YEREVAN STATE UNIVERSITY

JOURNAL OF ECONOMY
Bulletin of Yerevan University

VOLUME 16 - ISSUE 1(45)

JUNE - 2025

Three issues of "Journal of Yerevan University. Economics" are published annally. The journal has been published since 2010. It is the successor of "Journal of Yerevan University" published in 1967-2009

CONTENTS

Journal of Yerevan University. Economy
2025, Vol. 16, No. 1(45), June, 4-11
https://doi.org/10.46991/BYSU.G.2025.16.1.004

ECONOMIC AND SOCIAL INNOVATIONS IN ARMENIA: CHALLENGES AND OPPORTUNITIES

GRIGOR HAYRAPETYAN *
Yerevan State University

Abstract. Innovation is a key driver of economic growth and social progress. Economic and social innovations are essential for fostering inclusive, creative, and sustainable societies. While economic innovations enhance productivity, competitiveness, and technological advancement, social innovations address critical societal needs by improving quality of life, education, and public well-being. In Armenia, the interplay between these two forms of innovation is crucial for sustainable development. However, social innovations often face underinvestment in free-market economies due to their public good characteristics, necessitating strategic interventions from governments and other stakeholders. Governments and private interest groups can play an important role in institutionalizing social innovation through incentives to social innovators.

This paper examines the role of economic and social innovations in Armenia, analyzing their interconnectedness within regional and global contexts. It explores the challenges of fostering social innovation in a developing economy and highlights the importance of government involvement, international collaborations, foreign direct investment, and diaspora engagement. The study emphasizes the need for increased investment in research, education, and human capital to ensure that social progress keeps pace with economic growth. Ultimately, the paper argues that a balanced approach to economic and social innovation is essential for Armenia's long-term prosperity.

Key words: *economic innovations, social innovations, quality of life, education, ICT, human capital, productivity, labor force.*

Introduction

Recent economic and societal development has essentially been based on the development of high technology, its effective utilization and determined increases in exports. One of the reasons underlying differences in economic growth and income level between developed and developing countries is undoubtedly the technology infrastructures these countries have. While many factors such as the workforce, natural resources, economic and political stability, educational status, density of R&D activities, innovation and so on lead to differences in development and growth among countries, the most important

* **Grigor Hayrapetyan** – PhD in Economics, Associate Professor at the Chair of Economics and International Economic Relations of YSU Faculty of Economics and Management
Email: grigor.hayrapetyan@ysu.am ORCID: https://orcid.org/0009-0008-1088-4504

Received: 27.01.2025
Revised: 10.02.2025
Accepted: 06.06.2025

factor is the technology on which production is based (Kabaklarli E. et al., 2018). For developing countries like Armenia, it is very important to focus on quality education and research and development activities which will allow to produce and export competitive products or services. In this process for long-run effect, it's also very important not to underestimate the role of social innovations and discuss it as an inseparable part of economic innovations. The European Commission, through Innovation Union, supports innovation due to its capacity to create job opportunities for all, especially the young; get the economy back on track; make companies more competitive in the global market; solve the challenges of an ageing population; secure resources like food and fuel; fight global warming; and improve smart and green transport (Lakatos El. et al., 2016). Social innovation refers to activities and services designed to address social needs, as opposed to business innovation, which primarily focuses on maximizing profit. It is widely recognized that new technologies and products impact social relations, behavior, and attitudes. Additionally, it is understood that the successful development and introduction of new products and technologies depend on their alignment with a specific social context, which includes the organization of social relations, established norms and values, and accepted behavioral patterns. For example, inventions are often only adopted once society is "ready" to embrace them.

The aim of this paper is to find out how parallel with economic innovations social innovations can be created and promoted in the Republic of Armenia and to present the concept, content and essence of social innovation from the RA's economic system perspective. This paper underlines the interconnected nature of social and economic innovations and highlights the government's critical role in promoting social innovation, particularly in education and human capital development.

Innovations must take a social responsibility into account. Innovations should not only focus on the profit aspect but also on the planet and profit aspects of sustainability. Moreover, taking into account that innovation is also disruptive, this can be a challenging demand. Although economic/business innovation is a generator of human well-being, there are other innovations, like social innovations, that have a significant impact on social performance. Economic innovations that help to produce consumer products or services usually increase welfare allowing those goods and service available for us. In this aspect we can divide economic innovations into 3 main groups 1. Information and communication technologies (ICT), 2. Digitalization process and 3. Artificial Intelligence. Although we can consider that most social innovations are economic innovations there will be some kind of social innovations that are subject to market failure because they are not providing profit. That's why, besides economic innovations, countries systematically have to input into producing social innovations which in turn will prevent social development from diverging from economic and technological development.

The main purpose of using social innovations is to create a better life for society. In this aspect we can state that the main feature of social innovations is improvement in quality of life. We can consider quality of life in individual (micro-level) and group of people (macro-level) aspects. On a micro level quality of life determinants could be material well-being, individual characteristics and other sets of valuable options. On a macro level quality of life determinants could be the welfare of society, education and healthcare systems, job security, political stability and security, etc. As a whole country will benefit for social innovations but we can state that none of individuals has sufficient

incentives to pursue them. So, we can consider social innovations as public goods. Therefore, a free market economy will not create a sufficient amount of social innovations. In free-market economies, social innovations are often neglected, requiring deliberate intervention from governments and institutions. That's why governments need to play an important role in order to overcome that market failure. For example, there are many innovations in teaching and learning emerging from universities and other centers of learning that are in the nature of a public good. This suggests that to explain fully the improvement in the living conditions of humankind one has to introduce a new class of innovations that cannot be identified with the set of business innovations. We refer here to the class of social innovations (Pol E., Ville S., 2009). So here we have to differentiate social innovation from economic/business innovations and identify a subset of social innovations that require government support, for example, education and healthcare systems, rural development, poverty, etc.

We can consider innovation as a social process between different actors. In that aspect we can state that innovations bear risks as well as opportunities for society. The concept of social innovation originates in critiques of traditional innovation theory. By calling for social innovation, new theories point at the need to take the social mechanisms of innovation into account. Besides these not only commercial activities need innovation, but also social and public activities, for example, rural development, poverty, healthcare system, etc. Talking about the social innovation concept, we can refer to three main interpretations: 1. The social mechanisms of innovations, 2. The social responsibility of innovations, 3. The innovation of society.

Social innovation has been seen as a way of solving social problems based on a new form of Economics which uses elements of current logics connected with other elements that aim at contributing to social welfare. It deals with changes in the social context in which new institutions and social systems are created in a logic that moves from the individual to the collective. Therefore, different types of social innovations may emerge, such as social businesses. Unlike profit organizations, this kind of business is related to the agreement that a social enterprise should combine profitability and socio-environmental objectives (Bittencourt B., 2017).

Taking into account that social innovations are mainly considered public goods, we have to understand how social innovations can be created and promoted in Armenia. It is clear that developed countries have more chances for economic and social innovations than developing countries but it does not mean that small developing countries like Armenia have no chances at all. We think that in the case of Armenia social innovations can be created and promoted 1. By the Government of Armenia, 2. International Organizations, 3. FDI inflows, 4. Diaspora.

Many studies of social innovation point to the role of networks and collaboration as drivers of success, although we cannot say conclusively that these are necessary conditions for social innovation. In countries like Turkey, China and Russia, for example, the data shows that governmental support for social innovation is indispensable. Secondly, networks and collaboration operate differently in Europe than elsewhere, due to societal differences. In many European countries, people have relatively high trust in the government/democratic system. Moreover, several social innovation cases represent innovative

ways of solving social issues without public body involvement[1]. Taking into account the above mentioned we can state that governmental support for social innovation is crucial for any developing country. In this aspect we think that in the case of Armenia governmental support for social innovation is indispensable because social innovations require resource mobilization and only the government is able to mobilize sufficient resources.

Social entrepreneurship, social enterprise, social cooperation and social partnership are the main forms of social innovation implementation. So, social entrepreneurship is understood as entrepreneurial activity aimed at mitigating or solving social problems, characterized by the following features: social impact, innovativeness, self-sufficiency, scale, replicability (Kisova A., 2021). Despite economic innovation development in Armenia, the country is facing an educational crisis. Every year there are more than 600 teaching vacancies across the system, especially in science, technology, engineering, and mathematics (STEM). Some schools, particularly in rural communities, have gone without STEM teachers for years on end. Teach for Armenia launched several programs to overcome those issues. Tech4Armenia (T4A) is a collaborative initiative between Teach For Armenia and Armenia's leading technological companies. In short, they are working together to provide tech sector staff members at partner companies the opportunity to work remotely with flexible hours so that they can also teach in Armenia's rural public schools with Teach For Armenia. In addition to attracting existing talent from the tech sector into our two-year Teacher Leadership Program (a.k.a. "Program"), Teach For Armenia is also partnering with the Armenian Code Academy to train our alumni to become programmers who aspire to work in educational technology[2]. Teach for Armenia also launched the first incubator in Armenia dedicated to education. The Káits Social Innovation Incubator is one of the Leadership Pathways specifically available to Teach For Armenia's alumni (meaning individuals who have completed our two-year Teacher Leadership Program, a.k.a. "Program"). Káits provides our alumni with the opportunity to continue building upon their experience implementing Student-Led as well as Teacher-Led Innovation Projects. Through Káits, they continue to work with students and their communities in order to co-create and co-implement innovative projects that have the potential to scale[3].

Another project is Impact Hub Yerevan, which is a social innovation incubator. Impact Hub Armenia Social Innovation Development Foundation (aka Impact Hub Yerevan) is a non-profit organization registered and based in Armenia. Impact Hub Yerevan has a mission to support social impact projects and enterprises that propel the positive development of Armenia. Impact Hub Yerevan is also part of a global movement of 107+ Impact Hubs around the world. Part innovation lab, part business incubator, and part community center, Impact Hubs offer their members a unique ecosystem of resources, inspiration, and collaboration to grow impact. Since 2016, Impact Hub Yerevan has designed and implemented 20+ incubation/educational programs, hosted over 500 educational workshops and events, and now hosts more than 350 members with upwards of 100 projects/organizations representing every sector in Armenia within its inspiring social innovation space[4].

---

[1] Social Innovation in World Regions. https://www.socialinnovationatlas.net/fileadmin/PDF/kapitel/02_SI-in-World-Regions_v02.pdf, web page visited on 01.10.2024.
[2] Tech4Armenia (T4A) web page. https://www.teachforarmenia.org/en/tech4armenia visited on 28.10.2024.
[3] Kaits web page. https://www.teachforarmenia.org/en/incubator visited on 28.10.2024.
[4] Impact Hub Yerevan web page. https://yerevan.impacthub.net/about-us/ visited on 25.10.2024.

Finally, through the efforts of UNDP and the European Union, Kolba Lab was born as an incubator for citizen-led social innovation. Kolba Lab offered a platform for citizens and innovators to involve themselves in the development process, defining the problem they want to solve, and providing the space to incubate their idea, project and social start-up. Kolba Lab now implementing project "Future Skills and Jobs for Armenia's Rural Youth". This project seeks to enhance opportunities for employability as well as promote self-employment and entrepreneurship amongst youth in the regions of Armenia such as Lori, Shirak, Tavush and Gegharkunik[5].

As we can notice for this stage the government of Armenia's involvement in core social innovation programs is limited and they are mainly conditioned by international organizations working in the Republic of Armenia in that field. We think in order to have more impact government of Armenia has to implement its own social innovation programs based on the need of the country's development strategy policy. Here we think that these social innovations, first of all, have to be created and implemented in the field of education. Taking into account that education is the foundation for innovation, addressing the education gap is critical to Armenia's future social and economic progress.

Table 1

Government expenditure on education, total (% of GDP)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
World	4.4	4.3	4.4	4.2	4.3	4.2	4.1	4.4	4.2	3.7
Low & middle income	3.8	3.7	3.9	3.8	3.8	3.7	3.6	4.0	3.7	3.5
Middle income	4.2	3.9	4.2	4.0	4.0	3.8	3.7	4.2	3.7	3.5
Armenia	2.7	2.2	2.8	2.8	2.7	2.3	2.6	2.7	2.8	2.5

Source: *World Bank Development Indicators 2024.*

Based on the data of Table 1 comparing with the world average government expenditure on education in Armenia is below 1.2%. Moreover, government expenditure on education in Armenia is below that of low- and middle-income and middle-income country groups, with 1%:

Taking into account that Armenia is a developing country with relatively low FDI inflows we can state that the main research and development projects which are very important for innovations have to be financed by the government. Unfortunately, during the recent 10 years (2013-2022) despite economic development research and development expenditures share of Armenia's GDP remained unchanged at 0.2% (Table 2). Comparing with low- and middle-income countries' average indicator, we can see that Armenia's indicator is 10 times lower. In this situation, public and private sectors need to increase investments in R&D.

[5] Kolba Lab web page. https://kolba.am/projects/future-skills-and-jobs-for-armenias-rural-youth visited on 24.10.2024.

Table 2

Research and Development expenditures (% of GDP)

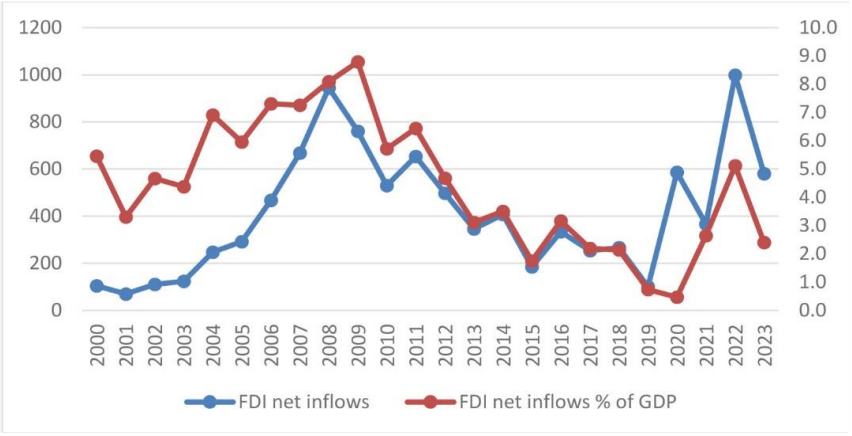
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
World	2.0	2.1	2.1	2.2	2.2	2.2	2.3	2.5	2.6	-
Low & middle income	1.2	1.4	1.4	1.4	1.4	1.4	1.5	1.7	2.0	-
Middle income	1.2	1.4	1.4	1.4	1.4	1.4	1.5	1.7	2.0	-
Armenia	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2

Source: *World Bank Development Indicators 2024.*

According to UNCTAD's World Investment Report 2023, FDI inflows to Armenia stood at USD 998 million in 2022, almost three times the level recorded the previous year. The total stock of FDI was estimated at USD 7.1 billion, around 36.5% of the country's GDP[6]. The electricity and gas supply sector leads the sectoral distribution of FDI flows into the real economy, accounting for 58% (USD 578 million), followed by the mining and real estate sectors, accounting for 15% and 7%, respectively. Russia remained the most prominent investor in Armenia, with approximately 70% of the FDI inflow, amounting to USD 697 million, ahead of Cyprus (7%) and Jersey (4.6%). According to data from the Ministry of the Economy, the volume of foreign direct investment in 2023 was about USD 350 million. As we can see from Figure 1, in 2023, FDI net inflows as a percent of GDP in Armenia accounted for 2.4% compared with the low- and middle country group, where the same indicator accounted for 1%.

Figure 1

FDI net inflows in Armenia from 2000-2023, million dollars



Source: https://www.mineconomy.am/en, web page visited on 01.10.2024.

[6] Lloyds Bank, Armenia: Investing in Armenia, https://www.lloydsbanktrade.com/en/market-potential/armenia/investment visited on 19.11.2024.

Diasporas can enhance connectivity by promoting trade and FDI, creating businesses and spurring entrepreneurship and innovation, and transferring new knowledge and skills. The largest Armenian population exists in Russia (around 3 million) followed by the United States (around 1.6 million), France (around 650,000), Georgia (200,000–400,000), Iran (60,000–80,000), and Germany (around 60,000). There is increasing recognition that beyond providing economic support through remittances, diasporas can be important sources of knowledge, skills, investment, and business connections. The ICT services sector has a proven track record of building and enhancing business opportunities through diaspora links. In the early 2000s, diaspora connections and prominent Armenians in various ICT hubs around the world played a pivotal role in the accelerated development of the ICT sector. Since then, they have been critical in bringing multinational technological companies to Armenia, setting up local research and development centers, investing in IT educational and infrastructure programs, generating leads for local IT companies, and linking with knowledge and funding sources[7]. As mentioned in the Global Innovation Index 2024, Armenia ranked 63rd place among 132 countries[8]. It seems that not such a bad position among 132 countries, but if we look at innovation pillar indicators here, the picture is not so good. For example, by human capital and research pillar, Armenia has the worst position, 89, followed by business sophistication, 85, and market sophistication, 83. We think that economic innovations have to bring improvement in human capital by social innovations, which in turn, by increasing productivity, will positively impact the future economic growth of Armenia. The low productivity of the labor force continues to be a major development challenge for Armenia. Based on the recent data of the WBG Human Capital Index, Armenia accounted for 0.58 out of 1.

Conclusion

Social innovation is a complex and multidimensional concept that encompasses the social mechanisms, objectives, and societal scope of innovation. The social mechanisms of innovation highlight that the development, diffusion, and use of innovations always take place within a social context, interacting with social relations, practices, norms, and values.

As we found for this stage, the government of Armenia's involvement in core social innovation programs is limited, and they are mainly conditioned by international organizations working in the Republic of Armenia in that field. We think that in the case of Armenia, social innovations can be created and promoted 1. By the government of Armenia, 2. by international organizations, 3. by FDI inflows, and 4. by the diaspora. For Armenia, it's very important to focus on quality education and research and development activities in order to spread social innovations. Unfortunately, during the recent 10 years (2013-2022), despite economic development, research and development expenditures' share in Armenia's GDP remained at 0.2%. In the case of most countries, especially in the case of developing countries like Armenia, government intervention is needed in order to create social innovations or in order for economic and social innovations to take place. Moreover, for this stage, in the case of Armenia, governmental support for social

[7] Armenia The Second Systematic Country Diagnostic, Beyond Boundaries: Unlocking Potential for a Sustainable Tomorrow, WBG, 2024.

[8] Global Innovation Index, https://www.wipo.int/web-publications/global-innovation-index-2024/en/ visited on 19.11.2024.

innovation is indispensable. In order to have more impact, the government of Armenia has to implement its own social innovation programs based on the needs of the country's development strategy policy. Here we think that these social innovations, first of all, have to be created and implemented in the field of education.

We think that economic innovations have to bring improvement in human capital by social innovations, which in turn, by increasing productivity, will positively impact the future economic growth of Armenia. Without sufficient public investment, Armenia risks falling behind in innovation and societal progress.

References

Armenia: The Second Systematic Country Diagnostic, Beyond Boundaries: Unlocking Potential for a Sustainable Tomorrow, WBG, 2024. 151 p.

Bittencourt B., (2017).,"The Impact of Social Innovation: Benefits and Opportunities from Brazilian Social Business", Revista.

Global Innovation Index, https://www.wipo.int/web-publications/global-innovation-index-2024/en/

Impact Hub Yerevan web page. https://yerevan.impacthub.net/about-us/

Kabaklarli E., Sami Duran M., Telli Üçler Y., (2018), "High-Technology Exports and Economic Growth: Panel Data Analysis for Selected OECD Countries", Forum Scientiae Oeconomia, Volume 6, No. 2. 47-59 pp.

Kaits web page. https://www.teachforarmenia.org/en/incubator

Kisova A., (2021)., "Social Innovation As An Economic System", European Proceedings of Social and Behavioural Sciences, 1137-1144 pp.

Kolba Lab web page. https://kolba.am/projects/future-skills-and-jobs-for-armenias-rural-youth

Lakatos E, Bercea O., Bacali L., (2016), "The concept of innovation in social economy. A review and a research agenda" Review of Applied Socio- Economic Research, Volume 11, Issue 1, 32-50 pp.

Lloyds Bank, Armenia: Investing in Armenia, https://www.lloydsbanktrade.com/en/market-potential/armenia/investment

Pol E., Ville S., (2009)., "Social innovation: Buzz word or enduring term?", The Journal of Socio-Economics. 878-885 pp.

Social Innovation in World Regions. https://www.socialinnovationatlas.net/fileadmin/PDF/kapitel/02_SI-in-World-Regions_v02.pdf, web page visited on 01.10.2024.

Tech4Armenia (T4A) web page, https://www.teachforarmenia.org/en/tech4armenia

Journal of Yerevan University. Economy
2025, Vol. 16, No. 1(45), June, 12-20
https://doi.org/10.46991/BYSU.G/2025.16.1.012

MEDIA AS A FACTOR OF INTELLECTUAL EVOLUTION

SARGIS ASHVANYAN, NIKITA RAVOCHKIN*
Kuzbass State Agricultural University

Abstract. The article presents the philosophical media, which act as a factor of intellectual evolution in the realities of modern social development. The authors consider media and technization in relation to the formation of new principles of social existence. The specificity of intellectualization of social systems is revealed. Innovative effects of media influencing society for the life of individual and collective subjects are determined. A comparative analysis of the implementation of intellectual achievements in practice is given. The possibilities of cognitive, value and behavioral resources in relation to the consolidation of society are clarified. The authors substantiate the popularity of media as an open communication system. Emphasis is placed on the pragmatics of media. The authors consider new media from the standpoint of challenges for the formation of new principles of social existence. The instrumental capabilities of media in the field of journalism are identified. The innovative effect of storytelling for intellectual evolution is determined. The positive potential of immersive media and VR technologies is designated. The possibilities of narratives in relation to the foundations of personal and collective existence are clarified. The emphasis is placed on the pragmatics of media. In conclusion, the article summarizes the results of the study.

Key words: *media, society, intelligence, knowledge, communication.*

Introduction

The functioning of modern society, which has significant features of information and post-industrialism, implies the need to recognise the increasing role of knowledge and intellectualisation in social interactions. It is also necessary to pay attention to the active nature of the transformation of the world and its various regions. The purpose of this article is to identify the specifics of the intellectualization of social systems, to propose new approaches to determining the innovative effects of media society on the life of individual and collective subjects. The purpose of this article is also to present the results of a comparative analysis of the implementation of intellectual achievements in practice. In particular, for humanitarian discourse, its understanding as a process of creating and enriching the intellectual potential of the social fabric on the basis of the achievements

* **Sargis Ashvanyan** – Doctor in Economics, Professor, Chair of Management and Agribusiness, Kuzbass State Agricultural University named after V.N. Poletskov
E-mail:sarkis57@rambler.ru ORCID: https://orcid.org/ 0009-0002-4486-3011
Nikita Ravochkin – Doctor in Philosophy, Associate Professor, Chair of Pedagogical Technologies, Kuzbass State Agricultural University named after V.N. Poletskov
E-mail: nickravochkin@mail.ru ORCID: https://orcid.org/ 0000-0003-1247-8231

Received: 24.12.2024
Revised: 15.01.2025
Accepted: 06.06.2025

of its various subjects (an individual person, a set of communities and organisations or the whole synergetic system) would be more accurate. In this sense, the general social meaning of the process of searching for and realising the results of intellectual activity is noted. Within the framework of the presented understanding, literally all aspects of human existence in a collective are subject to this process, regardless of how much they are determined by modern trends. It should be noted that the formation of new principles of social organisation in a certain sense can be interpreted through the introduction, use and actualisation of the presented understanding of intellectualisation as a way to improve the efficiency of collective forms of interaction. It is important to understand not only the idea of using intellectuality as a characteristic introduced in the interactions between the subjects of collective existence, but also to point out the evolutionary nature in their formation and development.

Literature Review

It is reasonable to say that the change of the social system is realised, among other things, on the basis of gradual replacement of less effective forms of social being of subjects with more effective analogues. Within the framework of this point of view, it should be understood that the technical side of social being is a special case of the above understanding of intellectuality, so it is appropriate to interpret this process as 'selection, accumulation, storage and consumption of public and private information resources, implementation and protection of intellectual rights of individuals and legal entities, integration and bundling of information systems to create and provide services to organisations and citizens' (Mokhov A.I., Svetlakov V.I., Mokhova V.A., 2015). In this interpretation, the processual and technical aspects of intellectualisation are valuable. In particular, the pluralism of technical means becomes the foundation for achieving informatisation and digitalisation of modern social space with the subsequent adoption of generally accepted norms of consumption of products of the same name. In the future, the adoption of such a norm should be considered as a means of consumer interaction (Mokhov A.I., 2013). At the technical level, any social object is thought of as an intellectual interaction of multiple systems, each of which invests in a phenomenon (for example, a building) a set of fundamentally important knowledge as an expression of conceptualised personal experience and competences. Subsequently, when exploiting a social phenomenon, competences and information are exchanged, which forms modern and promising social practices.

It is logical that the intellectual sphere allows not only to transform the modern social environment, but also to create agents of its activity, where it makes sense to identify individual or collective subjects. In the realities of the historical process, they can be capable of mastering and transforming social reality. Thus, we can see the subjective factor of the formation and unfolding of the historical process and development of social systems, which is associated with the competence side of human potential. The very idea of intellectual evolution in modern society is associated with the acquisition of competences by social subjects and their subsequent application in professional and everyday activities.

It is impossible not to point out the strengthening of the intellectual component in human activity. This is evidenced by the regularly increasing requirements for profes-

sional and ethical competences, as well as the conditions of personal and collective existence, increasingly associated with thinking (Shkondin M.V., 2017). The increased volume of innovations in qualitative and quantitative aspects contributes to the intellectualisation of social systems, and even on a planetary scale. Indeed, 'innovation as an intellectual activity has become a fundamental factor in the development of modern society'. It is curious that at earlier stages this process did not find support from the majority of social groups, but recently it is increasingly entering the coordinates of contextual conditions of existence, which is expressed in the formation of various innovative solutions. Among the latter, the intellectualisation of the home, the workplace, the car, and public spaces are noteworthy.

The analysis of existing social practices allows us to conclude that intellectualism has extremely reshaped the fundamental conditions of activity realisation, transferring the sphere of interests into the sphere of predominance of relevant interests. The position of B. Santo, for whom 'intellectualism is increasingly reflected in the predominance of intellectual goals both in narrow personal terms and in broad social terms' (Santo B., 2006). He believes that globalism is a property primarily of individual intellect, but the highest form of its activity is science, long ago and in principle neglecting all possible limitations.

It should be understood that the existing process of intellectualisation of public spaces and personal ways of existence relies on modern technical means, among which it makes sense to speak about media in general and mass media as a type of media. Technical means of information broadcasting make it possible to broadcast almost any information in a simple and quite effective form in the shortest possible time, as well as to use the resources of opinion leaders to form the necessary perceptions, mass thinking and ways of perceiving socially significant processes (Shkondin M. V., 2017).

Media today are based on impressions, create and broadcast them, providing individuals with almost limitless opportunities to immerse themselves in the experience of these emotions. Media narratives are aimed at ordering the chaotic flow of events in the surrounding socio-cultural environment, forming an understanding of what is happening, dissecting and structuring reality into separate semantic fragments available for perception, interpretation and modelling of its own version as a picture of the world (Jenkins H., 2006).

In today's reality, various media addressees are fully-fledged participants in the communication process. They are not only global consumers of incoming information, but also participate in the production, exchange and distribution of content. Thus, a specific feature of the 'new media' is that the audience has acquired the status of an actor in the modern media sphere, ceasing to be exclusively passive communicators (Rifkin J., 2000).

It is reasonable to believe that the genesis and subsequent implementation of social ideas allow us to develop valid grounds for the formation of numerous versions of the 'knowledge society'. In addition, intellectuals have the opportunity to exert expert influence on political, economic and other processes. The practices of interaction between intellectuals are determined by the dialectic of the external rigid, institutionally established and regulated, and the informal, which is funded by tacit forms and ways of implementation (Ravochkin N.N., 2024).

M.V. Shkondin writes that the intellectual sphere is one of the bases for the formation of the noosphere in the meaning of V.I. Vernadsky's ideas. At the same time, it is recognised that it is necessary to use the technical side of the social system to overcome territorial, state and other barriers to the intellectual development of modernity. In this case, the media are one of the essential and effective bases for the development of an intellectual environment, as they provide an opportunity to ensure intellectual interaction in society. It should be noted that the very idea of information and competence broadcasting is the basis of intellectualisation of any social process, including the evolution of collective existence, therefore, based on the historical retrospective, we should agree with the idea of using technical means of broadcasting such information flows. In the framework of modernity, it makes sense to consider new media or, in other words, the media environment, which is expressed in all its diversity: storytelling, podcasts, blogs, social networks, and even, in a certain sense, online games.

One side of the problem is that the available potential of information broadcasting and the intellectual evolution corresponding to it are characteristic of the owners of 'sources' - those significant information materials suitable for broadcasting and ensuring the reliability and quality of data, as well as their impact on social evolution. However, the idea of B. Santo is interesting, according to which, along with various obvious manifestations of intellectualisation of society through the use of new media resources, 'the gap between the minority, intellectually discerning and demanding, living by intellectual values, and the majority, opposing these intellectual values, often refuting even the concept of common sense, is increasingly striking on a global scale' (Santo B., 2006). The ability to intellectual activity, 'pure' in nature, in the conditions of modern social life is characteristic rather of a small stratum, which includes people capable of mastering, processing and producing fundamentally new data.

At the same time, the scientist's logic logically and reasonably leads to the statement about the increasing diversification and antagonism of the world order as the grounds for the transition of innovative society to the knowledge-based social environment. Gradually, evolutionarily, a global society of intellectualism of a higher level is being formed. Based on the presented scheme of reflection, a reasonable conclusion should be made about the gradual increase of intellectual abilities of the participants of the social process on the basis of the transformation of the technical side of the social system. This side can be considered a valuable resource, as it is a kind of means of information transmission from its owners (intellectual minority or, in B. Santo's terminology, a thin layer of information). Santo - a thin layer) to its recipient - the whole variety of participants of socially significant interaction.

Methodology

The authors base their research methodology on the analysis of scientific literature, mass media materials, and legal documents regulating the mass media sphere.And from this point of view it is necessary to agree with the position of domestic researchers, for whom the formation of the modern noosphere, based on the intellectual development of the social system, occurs in quite controlled conditions. According to some scientists, such conditions are determined, among other things, by the technical side of the development of the system of interactions that allow to broadcast socially significant data in a digital and rapidly changing world. This is a particular case in which the media systems

of individual countries can be regarded as an intermediate link on the way to a common information system for the whole of humanity. It is important to understand that the technical evolution of society allows the creative potential of an individual or even a social group to be realised without replacing it with the external side. In addition, the available resources of the technical side of society as a system determine the unification of the participants of the interaction for mutual enrichment of the participants of the process.

Intellectualisation of the social fabric is realised through the rational use of information resources in the form of generated data and a set of information links and relations. For this reason, M.V. Shkodin recognises that the essence of media as an open communicative system lies in fulfilling its main purpose, which is to provide access to all possible social actors (both personal and collective):

- to the processes of enriching society's information potential. This is expressed in the fact that media texts preserve and develop knowledge, behavioural and value resources as the results of mastering the conditions of social (personal and collective) existence;
- to the processes of audience consumption of information resources existing and used in modern media. Such consumption contributes to the formation and updating of the media picture of the world in the consciousness of both an individual and entire social communities.

Analysis

On this basis, it is important to recognise a set of resources, such as cognitive, value and behavioural resources, that provide an opportunity to consolidate social activity and are applied in various areas of social activity in order to master and change the surrounding reality in general and civilisation in particular. Such intellectual achievements 'act not only as a result of activity of a creative nature, but also as an opportunity to enrich the intellectual resources of other people involved in the consolidated labour of different communities and society as a whole, including within the subjective factor of mastering and transforming the world' (Shkondin M. V., 2017). It is not unimportant that the subjective factor in the context of social development is often interpreted as the most important link in comprehending intellectualisation. This is easily explainable by the fact that today mastering and transforming the world is unthinkable without active cognitive multitasking activity.

It should be recognized that the existing media can be considered as a basis for the development of an intellectual environment. It is obvious that society is traditionally thought of as a system of interrelated elements, the change of one of which has a more or less important impact on the evolution of all its other structural elements. An important component of modern society is the technical side, based on the transformation and complication of various devices, so the use and development of IT and other means of information broadcasting can be considered the basis for the evolution of the entire social system as a whole.

At the same time, it is important to realise that we are talking about a smooth transformation of the system. It is connected with the difference between revolutionary and evolutionary transition and transformation of the technical side of society. The industrial

revolution of the European system of the XVII - XIX century in its content should certainly be interpreted as a transformation, which is associated with a fundamental restructuring of the system of links and relations (Nureyev R.M., 2012). Fundamentally new ways and principles of organisation of the system of social relations are formed; that is why this period is categorised as an industrial (or technical) revolution.

Similar processes can be seen in the transition to computer technologies. At the end of the 20th century, a similar tectonic shift in the process of forming the foundations of collective existence took place in terms of content and external manifestations. However, new media are a form of expression of a post-industrial, digital society, which itself is capable of developing solely on the basis of the corresponding technical means. For this reason, new media form the sphere of high technology and gradually, in an evolutionary way, without fundamentally changing the foundations of modernity, determine the development of relations between the subjects of social interaction.

Based on these arguments, B. Santo's logic that new media, due to the availability of information broadcasting resources in them, can be considered a factor of intellectual evolution seems quite reasonable. This is due to two vectors of public formation. One of them is based on the development of the personal, individual in the structure of collective existence: the more a person has access to open and reliable data, the more he or she develops a set of competences that meet the conditions and challenges of the time. Moreover, it is the new media that should be considered as an external challenge, which makes it possible, and sometimes even necessary, for a person to undergo retraining and obtain new qualifications.

Another side of the formation of the social system consists in the development of the collective, objective way of knowledge transmission. The intellectual evolution of society is associated by scientists with transformations in the conditions of collective existence, such as the creation of virtual and augmented reality. At the same time, the difference in these terms is that ‘the first one is interpreted by researchers as the world created by technical means and transmitted to a person through various sensory organs, and the second one is the result of the introduction of visual data into the field of human perception in order to expand the information about the surrounding world (Osipovskaya E. A., 2018). Thus, the first term is a logical expression of a completely artificial space in which socially significant processes take place, while the second term contains a set of features of the combination of the sham and real objects of reality. As a consequence, it makes sense to say that new media are based on the achievement of the technical branch of humanity to simplify the broadcasting of information in the formed environment.

New media in this aspect are transforming entire sectors of social interaction. Thus, we should talk about the applicability of new media in the work of a journalist and as a journalistic tool. E.A. Osipovskaya demonstrates that the cover of one of the famous foreign magazines published in 2016 was made in 3D format with the help of a special offer. Due to the resources used, immersion of the reader in a certain atmosphere was achieved. Principal in such a cover was the idea of innovation: ‘The editors motivated their approach by the fact that the issue of the magazine is dedicated to innovation, and three-dimensional interactive illustrations, symbolising a new level of storytelling, are the best way to visualise progress’. For us, this approach is a vivid demonstration to describe the principle of intellectual evolution, which is realised through the resources of new media. Storytelling as a type of the latter in the presented case is conceived as a

new way of transmitting knowledge, information, ideas themselves. Innovations, in a certain sense, allow us to talk about innovations, i.e., about ourselves, and in forms that mankind could not have imagined before.

Among other things, new media allow the use of a new principle of information broadcasting organisation – immersiveness as immersion in an artificially created environment. The main purpose of such technology is 'connecting content and its perception for deep immersion in the event environment of stories, creating the illusion of presence in the virtual representation of media events, revealing new possibilities of human-machine interaction, the basis of VR technology is the industry of games and entertainment' (Evdokimov V.A., 2019). In the framework of the idea of the evolutionary nature of the intellectual environment it makes sense to say that the change of ways of influencing a person who perceives the information load contains the transition from the direct presentation of facts (i.e., knowledge neutral in its emotional potential) to the procedure of mixing knowledge and emotions. In addition, intellectual evolution in the contemporary environment utilises the resources of new media and their properties of immersiveness in the form of the possibility for social subjects (people in particular) to experience events and situations in the first person (Shkondin M. V., 2001). Thus, we should say that the principle of intellectual evolution contains the resource of transformation of the content of available and broadcast information.

Media influence the realisation of intellectual evolution also in the sense that they work with narratives, so the study of the laws of various modern forms and means of media (for example, storytelling) makes it possible to construct media texts in such a way as to capture the imagination of the audience, to form and use its emotional side, which can be considered an actual trend of modern media (Zamkov A.V., Krasheninnikova M.A., Lukina M.M., Tsynareva N.A., 2017).

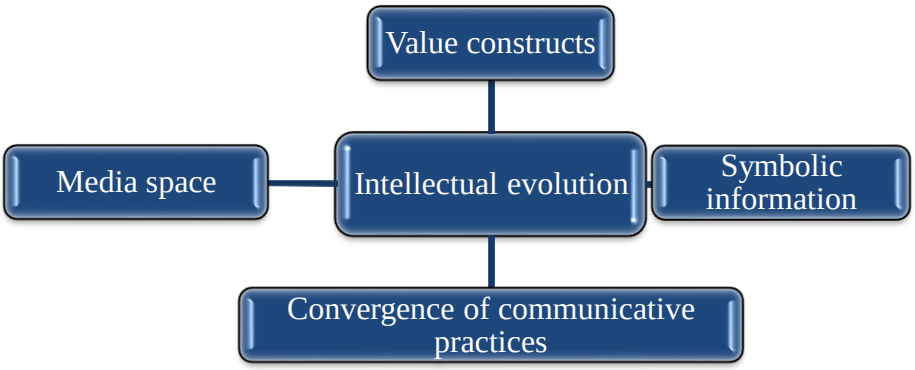
It is also a result of the evolutionary development of the intellectual side of social existence that we can consider the tendency used in modern media to strengthen the aesthetic and ethical experience oriented towards social impact. We are talking about the possibility of orienting the immersiveness of new media as an opportunity to form certain visually determined emotions and social practices based on them in mass consumers of information (Novikova A.A., Kiriya I.V., 2018). Among the latter it makes sense to highlight, for example, the ability to prevent accidents on various vehicles (which is realised by reconstructing the relevant accidents, demonstrating the possible consequences, as well as forming the necessary assessments and emotions) or the possibility of obtaining equal knowledge in unequal conditions (in particular, when reconstructing the facts of history, which for a number of reasons is inaccessible to a part of the population) (Krasavina A.V., Artemov I.A., 2019).

All the presented forms of cognitive activity, means of forming and broadcasting narratives and related emotional evaluations are based on the development of media as a means of forming and broadcasting human experience. Moreover, modern VR technologies, being a structural part of new media, turn out to be capable of exploring the complexity of personal and collective experience, including historical and social memory through the technical means of new media. Further, it is worth noting that the above-mentioned subjective factor of social development can develop on the basis of communication between the subjects of social interaction, the most important aspect of

which is the possibility of social development on the basis of the need to take into account the unity of subjective and objective bases of personal and collective existence. From this perspective, mass media (new media) as a means of mass communication are rightly considered by scholars as a basis for the stability of publicity and a collective form of interaction. It is the new media understood in this way that increases the level of organisation and adequacy to the real conditions and possibilities of society's development. The intellectual evolution under the influence of media can be schematically represented in Figure 1.

Figure 1

Scheme of intellectual evolution



Developed by authors.

Results

In this case, the intellectual sphere is one of the elements that are fundamentally affected by the new media in order to organise the integrity and stability of the social environment. It is the communicative nature of the media that can be perceived as an important factor, the basis for the sufficiency of mutual understanding of subjects entering into all kinds of intellectual contacts. At the same time, it should be noted that intellectual evolution in modern society can be realised on the basis of the integration potential of the media system. It is about the fact that the public representation of the results of intellectual activity is provided by combining cognitive, emotional and behavioural bases, resources of an innovative nature in a single block. It is believed that the evolutionary principle subordinates the unity of theoretical-cognitive (expressed in science or art), spiritual-practical (contained in educational, managerial or educational activities) and practical activities.

In the conditions of the unity of the three presented elements, the evolution of intellectualisation of society is realised through the media on the grounds that all creative and active forces of the system of social interactions should participate in the process of developing the intellectual potential of society. It is on the basis of interactivity and immersiveness that the direct feedback from all participants in communication interaction

and development of intellectual properties of its subjects becomes possible. Such a process should reflect the most relevant and 'fresh' results that are achieved in all spheres of society using new means of knowledge acquisition.

Media as a factor of intellectual evolution is realised also through the principle of mutual enrichment and self-development of subjects of social interaction. We believe that the personality, creating its own picture of the world in the conditions of diversity of information resources, comes to the state of joint practices for transforming reality in accordance with specific functions. As a consequence, it becomes possible to form a continuously self-renewing information potential of society, as well as the whole variety of personal abilities to participate in such renewal. In conclusion, we note that media are a factor of intellectual evolution in the sense that they form a social (in the broad sense) and technical (in the narrow sense) environment in which knowledge, emotional and value structure and behavioural models are exchanged between the participants of social interaction. The system of modern media is a communicative environment in which individual and collective actors broadcast information data.

References

Evdokimov V.A. Functions of immersive media // Science of Man: Humanitarian Research. 2019. No. 1 (35). Pp. 67 – 72.

Zamkov A.V., Krasheninnikova M.A., Lukina M.M., Tsynareva N.A. Immersive journalism: approaches to theory and problems of education // Modern information technologies and IT education. 2017. Vol. 12. No. 1. Pp. 166 – 172.

Jenkins H. Convergence Culture: Where Old and New Media Collide. – NY: New York University Press, 2006. 318 p.

Krasavina A.V., Artemov I.A. Storytelling and immersion: modern trends in journalism // Znak: problematic field of media education. 2019. No. 1 (31). Pp. 102 – 109.

Mokhov A.I., Svetlakov V.I., Mokhova V.A. Intellectualization of the sphere of life activity as a means of forming the noosphere of V.I. Vernadsky // Bulletin of the Russian Academy of Natural Sciences. 2015. No. 4. Pp. 31 – 40.

Mokhov A.I. Intellectualization of information resources of Russia – the imperative of the times / Scientific notes of IMEI, scientific and educational journal. 2013. Vol. 3. No. 2. Pp. 26 – 30.

Novikova A.A., Kiriya I.V. Aesthetics of immersion: features of the creative activity of a journalist in multimedia and transmedia projects // Bulletin of the St. Petersburg University. Language and literature. 2018. Vol. 15. No. 2. Pp. 276 – 288.

Nureyev R.M. Formation of an industrial society and the search for the wealth of nations // Terra economicus. 2012. Vol. 10. No. 1. Pp. 180 – 197.

Osipovskaya E. A. Virtual reality technologies as a new tool of journalism // Vestn. NSU. Series: History, philology. 2018. Vol. 17, No. 6: Journalism. Pp. 78 – 83.

Ravochkin N.N., Popov E.A. Informal practices in networks of intellectuals: socio-philosophical analysis // Sociodynamics. 2024. № 3. Pp. 45-56.

Rifkin J. The age of access: How the shift from ownership to access is transforming capitalism. London: Penguin books, 2000. 312 p.

Santo B. Innovation and global intellectualism // Innovations. 2006. No. 9 (96). Pp. 32 – 44.

Shkondin M. V. Media system as a factor in the intellectualization of society: structural and functional aspects // Social and humanitarian knowledge. 2017. No. 8. Pp. 96 – 113.

Shkondin M. V. Systemic characteristics of the media // The system of mass media of Russia. M., 2001. P. 17 – 34.

Shkondin M.V. Media system as a factor of publicity representation in the processes of world exploration by society // Bulletin of the Volga University named after V.N. Tatishchev. 2017. Vol. 1. No. 2. P. 185 – 189.

Journal of Yerevan University. Economy
2025, Vol. 16, No. 1(45), June, 21-34
https://doi.org/10.46991/BYSU.G/2025.16.1.021

ASSESSMENT AND ANALYSIS OF THE SECURITY LEVEL OF COUNTRIES

SAMSON DAVOYAN, VAHE ASATRYAN *
Yerevan State University

Abstract. The security of the country is the mutually supported and balanced capabilities of its multi-institutional systems to resist internal and external threats, which can ensure the territorial integrity of the country, the stable and effective functioning of all its most important systems, economic, political, etc.
The purpose of the article is to study the individual components and directions of the country's security, to carry out a calculation and comparative analysis of the economic security of different countries using an integral index. Within the framework of the research, the foundation of the economic development of the country and the possibility of ensuring it at different levels of the country's security were also considered.

Key words: *economy, safety, economic development, partial indexes, national security, global indexes.*

Introduction

The security of countries has been a vital necessity for the existence of nations and their long-term development at almost all times. Fortunately, humanity has now reached a level of development in which there are many opportunities to quantitatively assess the non-measurable indicators characteristic of humanity and to conduct comparative analysis in the context of different countries.

For centuries, the term economic development has been interpreted differently by different authors, however, the fact that economic development is significantly determined by the level of security of a country and the natural, sustainable development of various institutions of the country is indisputable. The economic development and security of countries are significantly interconnected, and a high level of security provides a great opportunity for implementing effective economic policies and ensuring economic development.

However, economic development is a complex and multidimensional concept, due to which there is no common definition of this term in the economic literature. Many economists, including Schultz (Theodore W. Schultz, 1978, pp. 3-23), Lewis (W. A. Lewis, 1954), and others, have studied economic development. Summarizing definitions

* **Samson Davoyan –** Doctor in Economics, Professor at the Chair of Economics and International Economic Relations of YSU Faculty of Economics and Management
E-mail: samsondavoyan2014@gmail.com ORCID: https://orcid.org/0009-0003-3100-002X
Vahe Asatryan – Graduate Student of YSU Faculty of Economics and Management
Email: vahe.asatryan@edu.ysu.am ORCID: https://orcid.org/0009-0009-8992-6080

Received: 03.02.2025
Revised: 17.05.2025
Accepted: 06.06.2025

of economic development in the professional literature, we propose the following definition of economic development.

The economic development of countries, according to time and space, is the qualitative-quantitative changes of all the main institutions of the economic system, which are aimed at ensuring the expanded reproduction of the entire economy, thus achieving a positive, synergistic result.

Considering the importance of economic development to the long-term success of countries, and based on the role of security in ensuring the continuous growth of economic development, we have addressed the concept of security of countries and its assessment.

The term "Security of Countries" has been widely studied in broad academic circles. In the paper “Assessment of Passive Economic Security of the Socioeconomic System of the Region” by Agarkov and Tarasyeva (2020), the authors discuss the concept of “national security” in relation to regional economic security, specifically focusing on passive economic security. They argue that national security includes safeguarding the socioeconomic stability of regions by evaluating the vulnerabilities in economic systems, thereby protecting against potential risks and threats that could destabilize the broader economic environment. In his 2010 paper “National Security Strategy in an Era of Growing Challenges and Resource Constraints”, Andrew F. Krepinevich Jr. discusses “national security” as being increasingly influenced by both traditional military threats and emerging challenges such as economic instability, technological advancements, and geopolitical shifts. He argues that national security strategy must adapt to a more complex global landscape, where resource constraints and non-traditional threats require a more comprehensive and strategic approach to safeguarding national interests. Other authors (Kravchenko, Kudryavtseva, & Kuporov, 2021) discuss national security in the context of economic threats to a region. They emphasize that national security involves safeguarding a region's economic stability, particularly through mechanisms like public procurement. The authors propose a method to assess and mitigate risks that could undermine economic security, highlighting the need for effective management and oversight of economic systems to ensure national stability and resilience. Molchan and Saenko emphasize that economic security is vital for protecting the state's overall stability and ensuring timely interventions when risks exceed acceptable levels (Molchan & Saenko, 2016). Hudson (2021) argues that “economic security” is essential for ending poverty in the United States. He emphasizes the need for policies that ensure everyone has access to basic economic resources, including stable employment, healthcare, and housing, to protect individuals from financial insecurity. Hudson suggests that achieving economic security for all is a critical step toward eliminating poverty and promoting overall societal well-being. According to Kremer-Matyškevič and Černius (2019), ensuring economic security involves protecting key sectors of the economy from risks that could jeopardize the country’s overall security and development.

Taking into account the studies of the above-mentioned authors on the security of countries, based on their definitions of this category and the results of their research, we propose the following definition of the term "security of countries", which, in our opinion, fully reflects the content of this concept.

The institutional system of the country's security includes the magnitude of the synergistic result formed as an outcome of the application of the required level of political,

economic, social, military, legal, diplomatic, informational, cultural, educational, environmental and other institutional components, which can ensure a normal and balanced activity of the population of the country. The country's security is the state's level of defense, its ability to neutralize multiple internal and external threats and challenges and to resist them.

Given the critical importance of the "security of countries" category, there is a need to quantitatively assess the security level of countries and classify countries according to that level, which will make it possible to easily explain the mechanisms for ensuring security, based on the policies pursued by leading countries in terms of security level. Thus, within the framework of the research, we have tried to calculate the levels of the country's security. As the concept of "country security" is very complex, variable and probable, and the assessment of its level using classical applied mathematics methods is very problematic, we employed one of the econometric methods previously used in our research (Davoyan S., 2016), the panel analysis method, and the calculations were performed through the SPSS software package.

Methodology

In order to assess the security level of countries in a comprehensive and systematic way, we developed a general (integral) security index by aggregating several internationally recognized partial indexes. Given the multidimensional nature of national security—which spans economic, military, environmental, and social dimensions—a composite index provides a practical framework for cross-country comparisons. Below we outline the methodological steps taken to construct the integral index, including the rationale behind the selected indicators and the specific weighting methodology used.

1. Rationale for Method Selection

The assessment of national security levels across countries and over time requires a methodology capable of handling both temporal and cross-sectional data. For this reason, we used panel data analysis, which combines data from multiple countries (cross-sectional dimension) and multiple years (time-series dimension). This approach provides several advantages:

- Increases the degrees of freedom and reduces collinearity among variables;
- Allows for the identification of country-specific and time-specific effects;
- Enables tracking of dynamic trends in security levels across countries.

The panel data analysis was performed using the SPSS statistical software package, which allowed for the efficient estimation of composite index scores and the verification of internal consistency.

2. Selection of Partial Indexes

The selection of partial indexes was guided by the following criteria:

- The indicators must be quantitative and standardized, ensuring comparability across countries.
- They must be published by authoritative international organizations (e.g., UN, World Bank, World Economic Forum).
- The data must be available for a sufficiently large sample of countries (at least 100) for the years 2020–2023.

- Each indicator must reflect a distinct and relevant dimension of national security (economic vitality, political stability, societal welfare, environmental sustainability, technological infrastructure, etc.).

These partial indexes are:

1) Global Competitiveness Index (GCI)

The index has been published annually by the World Economic Forum since 2004. It evaluates indicators affecting the long-term growth and development of the world's economies, and also provides an opportunity to identify the positive and negative aspects of these economies in order to develop a long-term development strategy.

The results of the assessment of the World Economic Forum, databases of international organizations (World Bank, UN structural bodies, World Health Organization, etc.) are used as a source of information.

The index is calculated for 140 countries and includes more than 120 indicators (such as higher education and training, product market efficiency, innovation, technological readiness, etc.) grouped into 3 sub-indices that make up the 12 pillars[1].

2) Human Development Index (HDI)

The index has been developed by the United Nations and considers the human potential of 188 countries as a driving force of the country's economic development.

The Human Development Index represents a composite assessment of three dimensions of human development[2]:

- a long and healthy life, as measured by life expectancy at birth;
- knowledge, as measured by mean years of schooling and expected years of schooling;
- a decent standard of living, as measured by GNI per capita in PPP terms in US$.

The human development index is estimated in the range of 0-1[3].

3) GDP (expressed in purchasing power parity) (GDP PPP)

The indicators of gross domestic product (GDP), expressed in terms of purchasing power parity, are quite applicable when conducting comparative analyses of living standards and quality of life between different countries, as they take into account the relative cost of living, inflation rates. Calculated and published by various international organizations.

4) Human capital index (Hcap)

The report behind the index is published by the World Bank; the index assesses the ability of different countries to mobilize the economic and professional potential of their citizens.

The Human Capital Index estimates how much capital each country is losing due to lack of education and health. The index was first published in 2008 for 157 countries. The human capital index ranges from (0-1), with 1 being the highest ranking score for the index[4].

---

[1] The Global Competitiveness Report 2015-2016, http://www3.weforum.org/docs/gcr/2015-2016/ Global_ Competitiveness_Report_2015-2016.pdf

[2] World health Organization, https://www.who.int/data/nutrition/nlis/info/human-development-index/Entry date: 10.12.2024.

[3] United Nations Development Programme, https://hdr.undp.org/content/human-development-report-2023-24/Entry date: 10.12.2024.

[4] https://datacatalog.worldbank.org/search/dataset/0038030 /Entry date: 10.12.2024.

5) The Quality of Life Index (QLI)

The rating score of the index is calculated for 177 countries, using 30 indicators, which are combined in 7 pillars, and each of the pillars is included in the index with its own weighting factor:

1. Stability: 14%
2. Civil Rights: 16%
3. Health and medical services: 16%
4. Security: 16%
5. Climate: 14%
6. Values: 16%
7. Popularity: 8%

The index change range is (0-100). The database of indicators included in the quality of life index is collected from the databases of the World Bank, OECD, the United Nations and other international organizations[5].

6) Economic Freedom Index (EFI)

The Economic Freedom Index was developed by the Heritage Foundation and The Wall Street Journal in 1995. The index evaluates the level of economic freedom in 186 countries of the world in the following four main sections:

1. supremacy of law,
2. dimension of state,
3. efficiency of regulation,
4. openness of the market.

The index is calculated every year on the basis of 10 pillars characterizing economic freedom (property rights, corruption freedom, tax freedom, government spending, business freedom, etc.). The rating points of the countries are evaluated in the range of 0-100, and as a result of their averaging; the rating point of the index of economic freedom is calculated. The higher the rating scores of the component, the greater the degree of economic freedom in that country[6].

7) Social Progress Index (SPI)

The index was initially published in 2011 by the initiative of Oxford University. The methodology behind the calculation was developed by Michael Porter at Harvard Business School. The Rockefeller Foundation, the Massachusetts Institute of Technology and a number of other reputable organizations also participated in the creation of the Social Progress Index. The Social Progress Index was first published in 2014 based on a methodology developed in 2013. The Social Progress Index is built on the basis of 12 main components and contains 52 indicators, calculated for 120 countries[7].

8) Global Peace Index (GPI)

In assessing peace, the Global Peace Index examines the extent to which countries are involved in current domestic and international conflicts, and attempts to assess the level of harmony or discord within a nation. The indicators that are part of the statistics broadly assess safety in society. According to these indicators, a low crime rate, minimal

[5] https://www.worlddata.info/quality-of-life.php /Entry date: 11.12.2024.
[6] Heritage Foundation, Economic Freedom Index, http://www.heritage.org/index/ /Entry date: 12.12.2024.
[7] Social Progress Imperative, https://www.socialprogress.org/social-progress-index /Entry date: 12.12.2024.

incidents of terrorist acts and violent demonstrations, harmonious relations with neighboring countries, a stable political environment and a small number of internally displaced or refugee populations testify to peace.

In 2017, 23 indicators were used to determine peace scores for each country. The indicators were initially selected with the support of an expert panel in 2007 and are reviewed by the expert panel on an annual basis. The scores of each index are normalized on a scale of 1-5[8].

9) Unemployment rate

The US Bureau of Labor Statistics measures the employment and unemployment rates for persons 16 and older. The unemployment rate is measured by two different labor force surveys:

Current Population Survey (CPS): also known as a "household survey", it is conducted based on a sample of 60,000 households. The survey measures the unemployment rate based on the ILO definition. The Current Employment Statistics Survey (CES): also known as the "wage survey," is conducted based on a sample of 160,000 businesses and government agencies representing 400,000 individual workers. The unemployment rate is also calculated using weekly unemployment insurance claims reports. The unemployment rate is updated monthly.

The US Bureau of Labor Statistics uses six measures when calculating the unemployment rate. The measures range from U1 to U6 and were introduced between 1950 and 2010. They calculate different aspects of unemployment.

The measures are:

- U1. Percentage of labor force unemployed for 15 weeks or more.
- U2. The percentage of the workforce that has lost their jobs, or has completed a temporary job.
- U3. The official unemployment rate, which is when people are out of work and actively looking for work in the past four weeks.
- U4. Persons described in U3 plus "discouraged workers" who stop looking for work because economic conditions make them think there is no work for them.
- U5. Individuals described in U4 plus other "lightly attached workers," "weakly attached workers," or those who are "willing" and able to work but have not recently looked for work.
- U6. Persons described in U5 plus part-time workers who wish to work full-time but cannot for economic reasons, mainly underemployment.

10) Global Food Security Index (GFSI)

The Global Food Security Index (GFSI) looks at issues related to food availability, quality and safety in 113 countries. This indicator is a dynamic, quantitative and qualitative pillar model built on 58 indicators. These indicators measure the drivers of food security in both developing and developed countries[9].

The GFSI methodology was developed by the EUF in consultation with a group of peer experts. The group met in February 2012 in Washington, D.C., to review the index's scope, indicator selection, weighting, and overall structure.

[8] https://www.visionofhumanity.org/maps/#/ Entry date: 12.12.2024.
[9] https://impact.economist.com/sustainability/project/food-security-index/about, /Entry date: 13.12.2024.

Food security varies around the world, with some regions being much more prone to food insecurity due to both lack of fertile land and capital. A lot of research is being done to increase the productivity of crops and therefore grow more food.

11) The Environmental Performance Index (EPI)

The environmental performance index is intended to measure and number the environmental indicators of the state's policy. This index was developed with the help of the Pilot Environmental Performance Index, which was first published in 2002 and is intended to meet the environmental goals set by the United Nations under the Millennium Development Framework.

The index was developed in 2006 by Yale University (Yale Center for Environmental Law and Policy) and Columbia University (Center for International Earth Science Information Network), in cooperation with the World Economic Forum and the Joint Research Center of the European Commission.

EPI calculation indicators change frequently. This should be taken into account when looking at a country's performance through several reports, as this may lead to score and ranking changes based purely on a change in methodology.[10]

12) Global Cybersecurity Index (GCI)

The Global Cybersecurity Index is designed to track the activities of companies operating in the cybersecurity industry. According to the data of the International Telecommunication Union, about one billion people in the world became Internet users for the first time from 2015 (when the first GCI was issued) to 2019. As global losses from cybercrime reach enormous proportions, citizens expect governments to improve cybersecurity standards and protect personal and financial data more effectively.

Each country's level of development or engagement is assessed against the five pillars of ITU's Global Cybersecurity Agenda: legal measures, technical measures, organizational measures, capacity building and cooperation.

Based on a multi-stakeholder approach and initiative, the GCI leverages the capacities and expertise of various organizations with the aim of improving the quality of research, promoting international collaboration and knowledge sharing on the subject[11].

13) Military Power Index

The ranking of the leading military powers of the world is made taking into account a number of factors: it uses a clear formula to rank countries according to their fighting capabilities[12]. More than 50 different factors are taken into account to determine the position of each country. The number of weapons, while important, is not the only factor determining a country's military capabilities or ranking. Training, combat readiness, overseas military bases, defense infrastructure and fortifications are factors that are considered and can often be decisive in the outcome of a war.

Strategic and tactical nuclear capabilities must be deployed with extreme caution, and states must refrain from using such weapons; they are considered a limited asset and do not have a decisive role; they would be decisive if they were used freely. Because of their top-secret nature, biological warfare capabilities are not considered.

---

[10] https://epi.yale.edu/, Entry date: 14.12.2024.

[11] https://unric.org/en/itu-releases-fourth-edition-of-the-global-cybersecurity-index/ Entry date: 14.12.2024.

[12] https://www.globalfirepower.com/countries-listing.php, Entry date: 14.12.2024.

Military forces are also divided into six tiers based on the league where their military capabilities are. Countries at the same level can be considered close rivals, while countries at lower levels struggle to wage war against those at higher levels.

Then, the specific weight of each partial coefficient in the range of 0-1 in the structure of the general (integral) coefficient of security of the countries was determined. According to our calculations, the partial coefficients in the formation of the general security index of the countries for 2020-2023 have the following weights:

Table 1

The relative weights of the partial indexes in the general index of the security of the countries

	2020	2021	2022	2023
Human Development Index (HDI)	0.078	0.069	0.075	0.0718
GDP (expressed in purchasing power parity) (PPP)	0.079	0.072	0.07	0.0822
Human capital index (Hcap)	0.077	0.086	0.087	0.0836
The Quality of Life Index (QLI)	0.066	0.074	0.075	0.0744
Global Cybersecurity Index (GCI)	0.095	0.092	0.09	0.0934
Economic Freedom Index (EFI)	0.059	0.061	0.061	0.0697
Global Peace Index (GPI)	0.079	0.082	0.08	0.0671
Unemployment rate	0.046	0.047	0.046	0.0537
Social Progress Index (SPI)	0.053	0.049	0.051	0.0668
Military Power Index	0.112	0.115	0.117	0.1046
Global Food Security Index (GFSI)	0.106	0.108	0.105	0.1032
The Environmental Performance Index (EPI)	0.096	0.097	0.095	0.0762
Global Competitiveness Index (GCI)	0.054	0.048	0.048	0.0534

Source: Developed by the authors.

The specific weights of each partial index in the overall security index were not assigned arbitrarily. Instead, we employed a **two-stage hybrid methodology** combining:

a) **Principal Component Analysis (PCA)**

PCA was applied to the panel dataset to identify the proportion of variance each partial index contributed to the total variation in national security levels. Indicators that explained more variance in the underlying data were assigned higher weights. For instance, the Military Power Index and the Global Food Security Index consistently exhibited strong explanatory power in differentiating the security levels of countries.

b) **Expert Judgment and Theoretical Relevance**

To supplement the empirical component, we incorporated **expert judgment** based on literature review and domain-specific understanding. This step was necessary to ensure that conceptually significant factors—such as cybersecurity, human development,

or environmental performance—were not underrepresented due to statistical limitations alone. This step follows the precedent established in our earlier research (Davoyan, 2016), where we found that mixed-method weighting strategies offer a more robust and interpretable index.

The final weights (presented in Table 1) represent an **average of both empirical significance and theoretical importance**, adjusted each year to account for small shifts in relative importance while maintaining overall methodological consistency.

The integral security index of countries' security is determined by the following formula:

$$H^t_{i\,security} = \sum_{j=1}^{13} a^t_{i\,j}\, L^t_{i\,j}$$

$H^t_{i\,security}$ - is the value of the general (integral) security index of the i-th country in the t-th year,

$a^t_{i\,j}$ - is the specific weight of the j-th partial coefficient of the i-th country in the general security index of the country in the t-th year,

$L^t_{i\,j}$ - is the magnitude of the j-th coefficient of the i-th country in the t-th year,

i - is the number of countries, (i=1,2...102)

j - is the number of the partial coefficients forming the general security index of the countries, (j=1,2...13)

According to our calculations, the general security index of countries for 2020-2023 has the following composition:

Table 2

The levels of security in the countries observed, 2020-2023

Country:	**2020**		**2021**		**2022**		**2023**	
	Score	**Rank**	**Score**	**Rank**	**Score**	**Rank**	**Score**	**Rank**
Ireland	0.725	1	0.685	1	0.711	1	0.748	1
Portugal	0.690	3	0.653	3	0.711	2	0.724	2
Finland	0.697	2	0.656	2	0.681	3	0.717	3
Austria	0.685	4	0.650	4	0.679	4	0.711	4
Denmark	0.683	5	0.643	7	0.679	5	0.707	5
New Zealand	0.682	6	0.644	6	0.669	6	0.704	6
Slovakia	0.673	8	0.644	5	0.665	7	0.699	7
Belgium	0.676	7	0.641	8	0.660	8	0.697	8
Germany	0.672	9	0.638	9	0.658	9	0.694	9
France	0.661	13	0.630	12	0.647	10	0.683	10
Canada	0.662	12	0.637	10	0.637	11	0.682	11
Australia	0.662	11	0.632	11	0.633	12	0.679	12

Switzerland	0.664	10	0.624	15	0.636	13	0.678	13
Japan	0.657	14	0.626	14	0.627	14	0.673	14
USA	0.656	16	0.628	13	0.620	15	0.671	15
Spain	0.646	18	0.622	16	0.619	16	0.665	16
Sweden	0.647	17	0.614	17	0.617	17	0.662	17
Italy	0.632	19	0.607	18	0.612	18	0.653	18
Great Britain	0.627	21	0.598	19	0.605	19	0.646	19
Netherlands	0.628	20	0.589	22	0.605	20	0.643	20
Israel	0.656	15	0.581	27	0.580	27	0.641	21
Czech	0.622	22	0.589	21	0.599	21	0.639	22
UAE	0.609	27	0.588	23	0.597	23	0.632	23
Greece	0.611	26	0.590	20	0.590	22	0.631	24
Estonia	0.621	23	0.583	26	0.583	26	0.630	25
Kuwait	0.614	24	0.585	24	0.583	25	0.629	26
Singapore	0.612	25	0.585	25	0.585	24	0.629	27
Malaysia	0.595	29	0.573	29	0.575	30	0.615	28
Chile	0.590	32	0.572	30	0.575	29	0.613	29
Norway	0.607	28	0.564	34	0.566	34	0.612	30
Mexico	0.589	33	0.568	31	0.573	31	0.610	31
Saudi Arabia	0.586	36	0.565	32	0.570	32	0.607	32
Romania	0.594	30	0.563	35	0.554	36	0.603	33
Luxembourg	0.593	31	0.550	39	0.565	35	0.602	34
Kazakhstan	0.588	35	0.563	36	0.549	38	0.599	35
Republic of South Africa	0.565	45	0.564	33	0.568	33	0.598	36
Thailand	0.582	37	0.560	38	0.550	37	0.597	37
Russia	0.580	38	0.561	37	0.547	39	0.595	38
Hungary	0.529	56	0.575	28	0.580	28	0.594	39
Poland	0.576	40	0.548	40	0.545	40	0.588	40
Lithuania	0.576	39	0.547	41	0.544	41	0.588	41
Panama	0.570	41	0.536	42	0.543	42	0.581	42
Azerbaijan	0.560	47	0.535	43	0.540	43	0.576	43

Uruguay	0.565	43	0.531	45	0.538	45	0.576	44
Latvia	0.566	42	0.530	46	0.536	46	0.575	45
South Korea	0.588	34	0.516	54	0.518	54	0.572	46
Turkey	0.549	49	0.531	44	0.539	44	0.571	47
Sri Lanka	0.549	48	0.524	49	0.533	49	0.567	48
China	0.540	52	0.528	48	0.534	47	0.565	49
Costa Rica	0.538	53	0.523	50	0.530	50	0.561	50
Ireland	0.546	50	0.517	53	0.520	53	0.558	51
Bulgaria	0.565	44	0.505	56	0.505	56	0.556	52
Morocco	0.534	54	0.519	52	0.523	52	0.556	53
Botswana	0.526	57	0.507	55	0.516	55	0.546	54
Jordan	0.482	74	0.530	47	0.534	48	0.545	55
Croatia	0.533	55	0.503	58	0.503	58	0.543	56
Slovenia	0.561	46	0.478	68	0.497	66	0.542	57
Cyprus	0.525	58	0.501	60	0.502	60	0.539	58
Georgia	0.518	60	0.503	57	0.504	57	0.538	59
Philippines	0.518	61	0.501	59	0.503	59	0.537	60
Argentina	0.516	62	0.500	61	0.502	61	0.535	61
Indonesia	0.513	63	0.494	63	0.501	63	0.532	62
Peru	0.512	64	0.492	64	0.500	64	0.530	63
Qatar	0.494	71	0.495	62	0.501	62	0.525	64
Albania	0.511	65	0.483	66	0.496	67	0.525	65
Egypt	0.501	67	0.487	65	0.498	65	0.524	66
El Salvador	0.510	66	0.473	72	0.483	72	0.517	67
Uganda	0.497	69	0.477	69	0.490	69	0.516	68
Kenya	0.495	70	0.474	70	0.488	70	0.514	69
Tanzania	0.482	75	0.481	67	0.493	68	0.514	70
Pakistan	0.501	68	0.466	74	0.478	74	0.509	71
Paraguay	0.544	51	0 5189	51	0.527	51	0.510	72
India	0.480	76	0.474	71	0.487	71	0.508	73
Vietnam	0.487	73	0.473	73	0.480	73	0.508	74

Malta	0.477	77	0.445	77	0.477	75	0.493	75
Nicaragua	0.520	59	0.441	79	0.431	79	0.491	76
Belarus	0.493	72	0.454	75	0.439	77	0.489	77
Nigeria	0.453	81	0.442	78	0.433	78	0.469	78
Bangladesh	0.453	82	0.438	80	0.430	80	0.466	79
Algeria	0.395	92	0.448	76	0.470	76	0.463	80
Zambia	0.454	80	0.436	81	0.420	82	0.462	81
Brazil	0.449	83	0.435	82	0.423	81	0.461	82
Honduras	0.456	78	0.433	84	0.418	84	0.461	83
Côte d'Ivoire	0.437	87	0.435	83	0.419	83	0.455	84
Namibia	0.446	85	0.422	85	0.417	85	0.453	85
Kyrgyzstan	0.443	86	0.417	86	0.416	86	0.450	86
Senegal	0.420	89	0.411	87	0.414	87	0.439	87
Cambodia	0.446	84	0.385	89	0.410	89	0.438	88
Mongolia	0.423	88	0.404	88	0.410	88	0.436	89
Guatemala	0.456	79	0.367	93	0.384	93	0.426	90
Venezuela	0.410	90	0.382	91	0.398	91	0.420	91
Jamaica	0.398	91	0.378	92	0.397	92	0.414	92
Bolivia	0.393	93	0.366	94	0.383	94	0.403	93
Zimbabwe	0.341	97	0.382	90	0.408	90	0.399	94
Togo	0.341	96	0.350	95	0.377	95	0.377	95
Armenia:	0.386	94	0.323	98	0.353	98	0.375	96
Ethiopia	0.341	95	0.338	96	0.375	96	0.372	97
Iran	0.329	98	0.323	97	0.362	97	0.358	98
Tajikistan	0.329	99	0.320	99	0.348	99	0.352	99
Taiwan	0.298	101	0.290	100	0.337	100	0.326	100
Ukraine	0.306	100	0.232	101	0.330	101	0.306	101
Syria	0.197	102	0.231	102	0.328	102	0.267	102
Lebanon	0.185	103	0.223	103	0.319	103	0.256	103

High
Above average
Medium
Below average
Dangerous

Source: Developed by the authors.

Conclusions

1) For the years 2020-2023, using the panel analysis method, a general index of the security level assessment of 103 countries was formed using 13 partial indexes (Table N2).

2) The different levels of security of 103 countries have been divided into 5 groups. Countries 1-20 in Table 2 are countries with a high level of security, among which are Denmark, Austria, New Zealand, etc. (countries in the green layer).

In the 2nd group, the countries in the 21st-40th places, those with a higher than average security level, among which are the Netherlands, Singapore, Norway, etc. (the countries in the orange layer).

In the 3rd group, the countries in the 41st-60th places are those with an average level of security, among which are Poland, Bulgaria, Azerbaijan, etc. (the countries in the blue layer).

In the 4th group, the countries in the 61st-80th places are those with a lower than average level of security, among which are Indonesia, Egypt, India, etc. (the countries in the red band).

In the 5th group, the countries in the 81st-103rd places are those with a low level of security, among which are Taiwan, Armenia, Ukraine, Syria, etc. (the countries in the white layer).

3) The low level of security of the Republic of Armenia in 2020-2023 is mainly due to the low levels of these partial indexes: military power, food security, human capital, social progress, GDP expressed in terms of purchasing power parity.

4) In order to improve the video-methodological provisions for the formation of the general index of the security level of the countries, in our further research, such partial indexes will be included, which are in a greater degree of interdependence with the term "security of the countries".

5) We believe that the presented research work is not free from a number of theoretical-methodological shortcomings, including:

1. It is necessary to carry out the evaluation of the security levels of the countries with the largest possible number of partial indexes.

2. To present the participation of such partial indexes in the process of assessing the security levels of the countries, which are most correlated with the quantitative magnitude of the security levels of the countries.

3. To use other quantitative evaluation tools, which will enable us to present the above partial indexes according to the degree of importance.

References

Davoyan S. (2016), “Analysis of the comparative efficiency of the multifaceted transformations of the countries”, Gyumri. "Dpir" publishing house, 415 pages

Theodore W. Schultz. (1978), “On Economics and Politics of Agriculture.” In Distortions of Agricultural Incentives, pp. 3-23. Bloomington, Ind.: Indiana University Press

Agarkov, G.A., Tarasyeva, T.V. (2020), “Assessment of passive economic security of the socioeconomic system of the region”. International Conference on Numerical Analysis and Applied Mathematics, 2293, 120002. https://doi.org/10.1063/5.0030882

W. Arthur Lewis. (1954), “Economic Development with Unlimited Supplies of Labour”, https://doi.org/10.1111/j.1467-9957.1954.tb00021.x

Andrew F. Krepinevich Jr. (2010), “National Security Strategy in an Era of Growing Challenges and Resource Constraints”, https://csbaonline.org/research/publications/national-security-strategy

Kravchenko, V., Kudryavtseva, T., Kuporov, Y. (2021). A method for assessing threats to the economic security of a region: A case study of public procurement in Russia. Risks, 9(1), pp. 1-10. https://doi.org/10.3390/risks9010010.

Kremer-Matyškevič, G Černius. (2019) “Country's economic security concept: Theoretical insights”. I Vilnius: Mykolo Romerio universitetas,

Molchan A.S., Saenko S.V. (2016) “Economic security of the state: current state, threats and threshold values”. Scientific Works of KubGTU, No. 2

W. Hudson. (2021), Economic Security for All: How to End Poverty in the United States, URL: http://shults.org/wadehudson/esfa/

Journal of Yerevan University. Economy
2025, Vol. 16, No. 1(45), June, 35-47
https://doi.org/10.46991/BYSU.G/2025.16.1.035

INTERGENERATIONAL JUSTICE: CHALLENGES AND PERSPECTIVES IN THE REPUBLIC OF ARMENIA

VARDUSH GYOZALYAN
Yerevan State University
SUREN AVETISYAN*
Department of General Education Republic of Armenia

Abstract. As part of the research presented in this article:

- the ideological and theoretical-methodological foundations of ensuring intergenerational justice as an economic issue were examined, along with its role, significance, and possible approaches to addressing the problem in the context of the theory of justice;
- the intergenerational justice component within the structure of the Social Justice Index and the methodology for its assessment were studied;
- based on the methodology of the Social Justice Index, the current state of intergenerational justice in Armenia was assessed through the analysis of the most comparable data and indicators, as well as their dynamics, and the main challenges arising from the issue were identified.

The research applied methods of economic and statistical analysis, chronological series, scientific deduction, and abstract methods.

The study revealed that all key indicators of intergenerational justice exhibit concerning trends. Data on pension and family benefit policies point to a likely deepening of income inequality in the future, along with a continued decline in opportunities for vulnerable population groups. Should the dynamics of environmental indicators continue, the next generation is sure to inherit an ecological environment with significant negative consequences for the quality of life. Trends in R&D investment and public debt indicators warn of the prospects of reduced competitive opportunities for the economy in the future and a significant increase in the tax burden.

Timely acceptance of the challenges arising from intergenerational justice, as well as the assessment and refinement of the resulting factor priorities in public policy, will not only allow inheriting better living conditions for the next generation, but also lay a solid foundation for long-term sustainable economic development.

Key words: *intergenerational justice, social justice, social justice index, ecological footprint, pension policy, family policy, environment, public debt.*

* **Vardush Gyozalyan** – PhD in Economics, Associate Professor at the Chair of Management and Business of YSU Faculty of Economics and Management
Email: vardushgyozalyan@ysu.am ORCID: https://orcid.org/0009-0009-7876-7651
Suren Avetisyan – PhD in History, Associate Professor, Head of the Department of General Education, Education Inspectorate of the Republic of Armenia
Email: avetisyansuren40@gmail.com ORCID: https://orcid.org/0009-0008-9519-3103

Received: 14.04.2025
Revised: 20.04.2025
Accepted: 06.06.2025

Introduction

Economic development, as opposed to economic growth, encompasses not only the efficient allocation of resources but also the equitable and productive redistribution of economic outcomes across the population. Sustainable and long-term economic development, in turn, cannot be achieved unless resources and economic outcomes are effectively redistributed not only among the current generation, but also among different generations (current and future). In other words, a viable vision of long-term development itself implies fairness towards future generations as well.

Since all processes of distribution and redistribution are inherently linked to the issue of social justice, a number of objective questions arise: What should be the standards of social justice in this context? How does this problem manifest itself, and how acute is it in the economy of the Republic of Armenia? To what extent should it be addressed, and are issues of intergenerational justice currently reflected in the priorities of the state's strategic policy?

Theoretical and practical analyses of contemporary problems of global economic development lead to the conclusion that whatever methods and indicators of economic development are applied - at the level of the world, regional or individual economies - they should be primarily aimed at generating new knowledge and information on the extent to which the economy and the environment mutually influence and interact today, and what potential these trends will have in the future.

The challenges facing individual economies and the world today are far beyond the goals of economic growth, and inadequate responses to them, especially in the context of environmental protection, could further exacerbate various inequalities among future generations for the near future, reducing opportunities for a life of dignity.

If this crucial component of social justice is ignored, the next generation of a country (economy) in a rapidly changing world will inevitably face unequal competitive conditions of human development. Therefore, consideration of the issue of intergenerational justice and contemporary challenges arising from it and proposing appropriate solutions are extremely important within the framework of the development and implementation of the state macroeconomic policy of any country.

Intergenerational Justice as a Key Issue. Theoretical and Methodological Aspects

The idea of intergenerational equity in the professional literature is usually summarised in the following three aspects:

- investing 'in the future',
- ensuring at least equal development opportunities for the next generation,
- transferring a favourable ecological environment to future generations.

According to John Rawls, one of the most influential theorists on the concept of justice, the issue of intergenerational justice poses a fundamental challenge to any ethical theory. He asserts that the theory of *justice as fairness*[1] would remain fundamentally incomplete without addressing this concern (Rawls J., 1971). Rawls argues that each

[1] In his famous work A Theory of Justice, John Rawls develops the theory of 'justice as fairness, according to which the provision of justice and the social contract around it is impossible without fairness as a fundamental virtue.

generation holds the responsibility not only to preserve the cultural and civilizational heritage and the foundational institutions of a just society but also to contribute from its accumulated capital for the benefit of future generations. In this context, the social contract theory necessitates that the contracting parties agree to a principle of accumulation[2]. Rawls references Alexander Herzen's remark that human development is essentially a form of chronological injustice, wherein future generations enjoy the achievements of their predecessors at a relatively lower cost. He further cites Immanuel Kant, who observed that earlier generations bear their burdens for the sake of those who come after, while only the latter will have the opportunity to live in the fully constructed edifice of society. This development, according to Rawls, may seem unfair to some, but one must accept the natural fact that over time the boundaries between generations blur and economic benefits shift in the same direction[3]. Regarding the level of accumulation, varying stages of development and income levels should naturally imply differing accumulation rates. However, once just institutions are firmly established and basic freedoms are effectively realized, the net accumulation should ideally approach zero[4]. Thus, Rawls does not challenge the approach according to which the starting opportunities of each subsequent generation are qualitatively superior to those of the previous one, and endeavours to show that such a development is also fully within the logic of justice. However, current trends in global socio-economic development paint a markedly different picture.

In this context, Nobel Prize-winning economist J. Stiglitz notes: "There is one dimension of fairness to which politicians often pay lip service, but little more than that: the well-being of future generations.… Millions are saddled with burdensome student debt, which impedes their ability to choose a career freely – they're constantly thinking of the payments due – or even start a family or own a home. Meanwhile, house prices, relative to incomes, have soared as a result of easy money, a poorly designed tax code, and financial deregulation. Our generation got the capital gains. The next generation has to figure out how to get affordable housing. This divide in well-being across generations is one of the most troubling. Parents who made a killing in real estate may share that wealth with their children, who, in turn, may hand it down to their children. But parents who don't own any real estate have little or nothing to pass on to their children and grandchildren, and that leaves their descendants scrambling. Inequalities in this generation may thus be amplified in the next" (Stiglitz J. E., 2019).

Stiglitz sees the solution to the problem of ensuring fair intergenerational opportunities in tax and credit policies[5], which should not only aim to maximise government revenues and the profits of financial institutions, but should indeed be consistent with a concept of social justice aimed at preventing and neutralising income polarisation today and in the future.

Within the intergenerational justice issue, Stiglitz agrees with Rawls' view that a certain portion of accumulated capital should be invested for the benefit of the welfare of the future generation. However, the two authors have different motivations. Unlike Rawls, who was convinced that economic benefits for the next generations tend to grow, so she considered reinvestment of capital as a kind of compromise option until a perfectly

[2] Ibid pp. 254-256.
[3] Ibid p.256.
[4] Ibid p.257.
[5] Ibid pp. 193-195.

just institutional system is formed, according to Stiglitz, in today's realities it is simply necessary and can be a lifeline for the next generation, which is on the verge of a significant loss of wealth.

"What really burdens future generations is a lack of investment, both public and private. Best estimates suggest that America's capital stock hasn't even been keeping up with the growth of income. If we don't provide our young with adequate education, they won't be able to live up to their potential. And if we don't invest in infrastructure and technology, the world that they inherit will not be able to sustain the kinds of living standards that we have had.[6]" – states Stiglitz.

This thesis is also developed in the work "Justice" by one of the prominent theorists of justice, O. Höffe.

"Within the gross domestic product the role of present tasks has increased: social obligations, expenditures on health care, pensions and repayment of public debt, and on the contrary, the role of future tasks has decreased: investments in education and other areas of social and material infrastructure - this shift from the share of investment to the share of consumption in the broad sense means injustice to future generations… The present is sustained at the expense of the future" (Höffe O., 2007)– notices Höffe.

According to Höffe, each generation is obliged to strive for savings in three dimensions, not just in the economic sense:

- 'conservation saving' preservation of institutions and resources,
- 'investment saving' (capital, infrastructure, promising technologies...) and
- 'preventive conservation': avoiding wars, environmental disasters, economic and social collapse[7].

The cornerstone of the problem of intergenerational justice today is undoubtedly the ecological component, which, in particular, is absent within the framework of Rawls's theory of justice. This can be explained by the lower acuteness of environmental issues in the world in the seventies of the last century as compared to the present time. Perhaps it is the desire to avoid such issues that determines Rawls's pronounced optimism about the well-being of future generations. However, since the early 2000s, this issue has become fundamental to all development and justice studies.

Nobel Prize-winning economist and equity theorist Amartya Sen suggests looking at the problem in the context of the impact of the environment on quality of life and human-nature interactions: "it is assumed that this pre-existing nature will stay intact unless we add impurities and pollutants to it, it might, therefore, appear superficially plausible that the environment is best protected if we interfere with it as little as possible. This understanding is, however, deeply defective for two important reasons. First, the value of the environment cannot be just a matter of what there is, but must also consist of the opportunities it offers to people… Second, the environment is not only a matter of passive preservation, but also one of active pursuit." – he states and continues, - Our power to intervene with effectiveness and reasoning can be substantially enhanced by the process

[6] Ibid p. 192.
[7] Ibid p. 133.

of development itself. For example, greater female education and women's employment can help to reduce fertility rates, which in the long run can reduce the pressure on global warming and the increasing destruction of natural habitats" (Sen A., 2009).

Sen believes that qualitative improvement of the environment is also directly dependent on the creative impact of human beings. For example, water purification, elimination of pandemics simultaneously contribute not only to development, but also to environmental health.

Sen focuses on a comprehensive definition of the content of sustainable development in the context of intergenerational justice. As defined in the Brundtland Report[8], sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. In Sen's view, this definition is not comprehensive enough because, apart from needs, it does not reflect the value side of human nature. In this context, Sen sees Robert Solow's definition in his work 'An almost Practical Step towards Sustainability' (Solow R., 1992) as a step forward. Solow's formulation sees sustainability as the requirement that the next generation must be left with whatever it takes to achieve a standard of living at least as good as our own and to look after their next generation similarly.

However, according to Sen, while needs and living standards are fundamental factors, the concept of sustainable development cannot be complete without the inclusion of fundamental freedoms. Thus, Sen argues, equitable sustainable development, beyond the definitions of Brundtland and Solow, must also include the preservation and possible expansion of real freedoms and opportunities for the next generation (Sen A., 2009).

All of the above components, from meeting needs to capabilities, cannot be fully realised without transferring the necessary quantitative and qualitative natural resource base. While the current ruthless misuse of resources only works in favour of pessimistic scenarios.

Issues related to the environmental dimension of intergenerational justice, according to J. Stiglitz, should be approached from the perspective of what benefits today's environmental transformations will lead to in the future.

With regard to the Fair Exploitation of Natural Resources indicator, Höffe notes that the extraction of non-renewable energy sources may be deemed fair only if it does not outpace the rate at which new, alternative sources are discovered (Höffe O., 2006).

According to the modern well-known theorists dealing with the problem of intergenerational justice D. Birnbacher, more and more aspects of existence are entering the sphere of human control, and we have a growing possibility to detect future dangers and risks early enough. These factors lead to an extension of our responsibility for future generations. How to fulfil this task must be based on fundamental ethics and must be well defined regarding different scopes. At any rate, according to Birnbacher we have to take the entire foreseeable future into account. Regarding the content of our responsibility for future generations, we have to care for a sustained preservation of the resources needed for human survival (Tremmel J. C., 2006).

From the point of view of the comprehensiveness of the scientific approaches on the issue, it should be noted that there are scientific approaches, according to which the idea

[8] World Commission on Environment and Development. Our Common Future. New York: Oxford University Press, 1987.

of intergenerational justice is impractical and useless. Such an opinion develops professor of economics at Oxford University and University College London Dr. Wilfred Beckerman. He outlines his arguments by the following syllogism:

1. Future generations – of unborn people – cannot be said to have any rights.
2. Any coherent theory of justice implies conferring rights on people, therefore
3. the interests of future generations cannot be protected or promoted within the framework of any theory of justice[9] .

The crux of the argument that future generations cannot have rights to anything is that properties, such as being green or wealthy or having rights, can be predicated only of some subjects that exist. However, Beckerman emphasizes that rights and justice do not exhaust the whole of morality, and that we still have moral obligations to take account of the welfare of future generations. Our main obligation is to bequeath to future generations a society in which there is greater respect for basic human rights than is the case today.

To summaries, within the framework of any coherent conception of justice, the issue of intergenerational justice is inescapable, as it is intrinsically linked to the challenges of sustainable development policy. In any economy, it is the responsibility of the government to integrate this dimension of social justice into its broader socio-economic strategy. Failure to do so, particularly in the context of a rapidly evolving global landscape, risks leaving future generations to confront overwhelming challenges and deeply unequal starting conditions.

Intergenerational Justice in the Context of Social Justice

Based on the multilevel dimensions of social justice, as well as its cornerstone importance in the concept of sustainable development, the Organization for Economic Cooperation and Development (OECD) has developed an internationally recognized methodology through which the Social Justice Index (SJI) is calculated. The latter is an aggregate indicator that includes six groups of components, which in turn include 38 quantitative and 8 qualitative indicators (see figure 1):

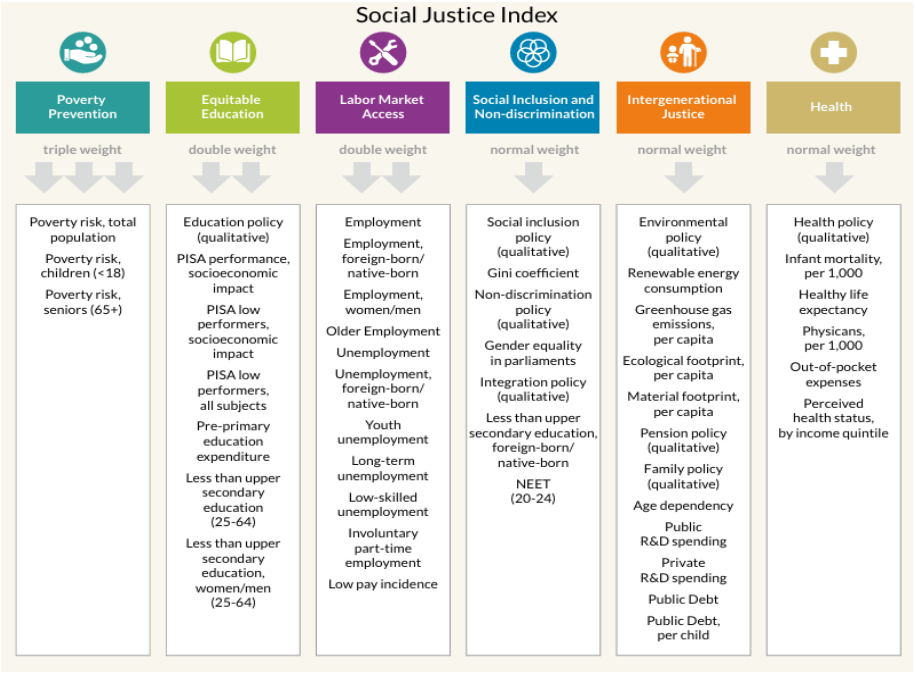
The concept of the Social Justice Index (hereinafter referred to as SJI) is methodologically based on the research of W. Merkel and H. Giebler (Merkel W., Giebler H., 2009), which gives the greatest weight in measuring social justice to poverty reduction indicators, followed by access to education and labour market participation. Within the SJI calculation, these three components are also prioritised the first one being triple weighted, while the other two are double weighted.

The fifth dimension of the SJI assesses the severity of intergenerational justice, a key component of sustainable development, across economies. It includes three types of indicators. The first group of them relates to the assessment of public policies targeting vulnerable age groups as well as families, and also includes the so-called old-age dependency ratio, which shows the number of elderly people per 100 people of working age. The second group is related to the environment and includes a qualitative assessment of environmental policies and four other quantitative indicators: renewable energy con-

[9] Ibid, p. 9.

sumption (share of renewable energy consumption in total energy consumption), greenhouse gas emissions (share of CO_2 per capita), and material footprint[10] and ecological footprint[11] per capita. The third group of intergenerational justice indicators, which concerns economic and fiscal sustainability, consists of four quantitative indicators. The first two show the share of public and private R&D expenditure as an investment in future well-being. The next indicator is the weight of public debt in GDP, and the third is the amount of public debt per child.

Figure 1



Source: *Social Justice in the EU and OECD, Index Report 2019, p.12*

The top three in terms of weighted intergenerational justice are Sweden (7.59), Denmark (6.92) and Norway (6.87), while Cyprus (4.21), Italy (3.95) and Greece (3.81) complete the list[12].

[10] The material footprint is an indicator of resource consumption that shows the final distribution of extracted raw materials based on actual demand for them. It does not reflect the actual physical movement of raw materials within and between countries, but shows the link between the beginning of the production chain (where raw materials are extracted from the environment) and the end (where the product or service is consumed). (Wiedmann et all, The Material Footprint of nations, Proceedings of the National Academy of Sciences , September 2013)

[11] The ecological footprint shows how much of the biosphere's reproductive potential is involved in human activity (consumption).

[12] Social Justice in the EU and OECD, Index Report 2019, p.94

Indicators of Intergenerational Justice in Armenia: Status and Challenges

The assessment of the Social Justice Index is limited to the OECD countries. A comprehensive assessment of the social justice index for the RA economy as such has not been carried out, and the number of possible comparable studies (Gyozalyan V., 2022) is limited. Table 1 summarises and combines the indicators of the social justice index in the RA economy and the intergenerational justice component while preserving the methodological comparability[13] as far as possible.

An analysis of the data presented in Table 1 reveals alarming trends and dynamics across all examined indicators of intergenerational equity in the Armenian economy.

Table 1

Dynamics of Intergenerational Justice Indicators in Armenia (2016-2023)

	2016	2017	2018	2019	2020	2021	2022	2023
Age Depandency								
Number of the retired (thousand people)	**394,4**	**405,2**	**419,2**	**434,6**	**446**	**458,4**	**551,5**	**598**
Working-age population (thousand people)	**1962,9**	**1934,6**	**1910,4**	**1889,5**	**1881,8**	**1868,3**	**1787,7**	**1788,2**
Number of the retired/working age population (in per cent)	**20,1**	**20,9**	**21,9**	**23,0**	**23,7**	**24,5**	**30,8**	**33,4**
Pension Policy								
Average monthly pension granted (drams)	**40397**	**40634**	**40478**	**40424**	**43983**	**43677**	**46629**	**49605**
Average monthly nominal salary (AMD)	**-**	**166004**	**172727**	**182673**	**189716**	**204048**	**235576**	**269994**
Pension/ average salary (in per cent)	**-**	**24,5**	**23,4**	**22,1**	**23,2**	**21,4**	**19,8**	**18,4**
Family Policy								
Average amount of benefit per family receiving family and social allowance (drams)	**31350**	**31350**	**31350**	**31350**	**31350**	**31350**	**31350**	**31350**
Family allowance/ average nominal wage (in per cent)	**-**	**18,9**	**18,2**	**17,2**	**16,5**	**15,4**	**13,3**	**11,6**

[13] The indicators presented in the table may not be methodologically fully identical and/or comparable to the Intergenerational Justice Component subindexators. The data were collected and calculated on the basis of possible comparable statistical indicators available in NSS RA reports and publications.

Environment								
Harmful substances emitted into the atmosphere, (1000 tons)	**276,7**	**291,1**	**263,4**	**267,9**	**295,4**	**308,9**	**317,4**	**316,1**
Water withdrawal from millions of sources. (cubic metres)	**3181,9**	**2865,4**	**2714,4**	**2865,4**	**2829,8**	**2966,5**	**3071,8**	**2917,6**
Total deforestation (including sanitary and liquidation deforestation) (ha)	**1940**	**2010**	**2015**	**2240**	**36317**	**39119**	**28931**	**3128**
Reforestation	**0,5**	**9**	**17,2**	**126,3**	**0,8**	**3,3**	**6,1**	**-**
Number of illegally felled trees	**513**	**30720**	**12821**	**7228**	**12978**	**18674**	**17193**	**13973**
Scorched forest area, (ha)	**37**	**1111,8**	**239**	**1880,8**	**342,4**	**890**	**1099**	**179**
R&D Sphere								
Gross expenditure on research and development, million drams	**-**	**-**	**-**	**12145**	**13717**	**14683**	**17814**	**16888**
of which: internal expenses	**11074,4**	**11867,6**	**10532,2**	**11683**	**12933**	**14373**	**16710**	**16759**
Public Debt								
Public debt as a percentage of GDP (calculated in dollar terms)	**56,3**	**58,8**	**55,6**	**53,8**	**63**	**66,5**	**54,5**	**49,2**
External public debt (as a percentage of GDP (calculated in US dollar terms)	**45,5**	**47,8**	**44,4**	**42,5**	**47,9**	**47,9**	**33**	**27**
Public debt stock (million, US Dollars)	**5942,1**	**6774,6**	**6922,5**	**7321,3**	**7968,5**	**9225,6**	**10637,7**	**11845,4**
Public debt per child (in US dollars)	**9449,9**	**10704,1**	**10889,6**	**11518,7**	**12538,9**	**14535,4**	**17779,9**	**19579,2**

Source: *NSS RA statistical yearbooks and publications data, author's calculations (data missing in the table are due to the fact that they are not presented in the relevant publications of the NSS RA).*

The upward trend in the number of retirees and their growing proportion relative to the working-age population suggests that the continuation of such dynamics may impose a significant socio-economic burden on future generations of the workforce. A shrinking pool of individuals engaged in active economic processes and the production chain, coupled with an expanding economically dependent population, risks undermining overall welfare and living standards. This issue may be further exacerbated by the persistent growth in pension levels and the widening disparity between pensions and average wages.

The average size of family and social benefits has not changed over the period under review. This means that the real incomes of families receiving benefits have decreased, which, in turn, given the growth of average wages, contributes to the deepening of income polarisation in society. Such trends reduce the already limited starting opportunities for future generations of poor families to qualitatively grow and invest in human capital (education, health care, cultural integration, etc.), creating a more worrying picture of social justice in the future.

Trends in all observed environmental indicators also indicate an unfavourable environmental situation for the future generation, hence also the preconditions for a deterioration in the quality of life.

It is important to highlight the risks associated with the accumulation of mining waste. Armenia has more than 130 types of minerals, of which 25 are metallic. Twenty-eight out of some 400 mineral mines with licenses are metallic. The existing waste rock and unconditioned ore dumps are located in the immediate vicinity of the mining facilities or at a short distance from them, on the surface of the earth and are mostly open, not subject to recultivation[14]. Mining poses risks and can have negative impacts on:

- Landscapes and soil
- Biodiversity
- Water resources
- Air quality
- Community safety, including increasing risks and impacts of disasters[15].
-

As for the R&D sector, we can see that, although investment in R&D has increased, it has been mainly at the expense of domestic funds, which indicates that Armenia's R&D sector is still not attractive for foreign investment, which could be a serious stimulus for growth in this area.

Table 2 presents data on the R&D expenditure of countries in the region (as a percentage of GDP) and data from Israel, one of the world leaders in this indicator.

[14] Mine Waste and Tailing Storage in Armenia: Disaster Risk Management, Educational Handbook, AUA Center for Responsible Mining, Yerevan, 2020, p. 54.

[15] Ibid, p. 58.

Table 2

Research and Development Expenditure (% of GDP)

	2016	2017	2018	2019	2020	2021	2022
Armenia	0.23	0.23	0.19	0.18	0.21	0.21	0.21
Azerbaijan	0.21	0.18	0.18	0.20	0.22	0.21	0.15
Georgia	0.29	0.27	0.28	0.28	0.30	0.25	0.24
Israel	4.47	4.62	4.78	5.22	5.71	5.56	…

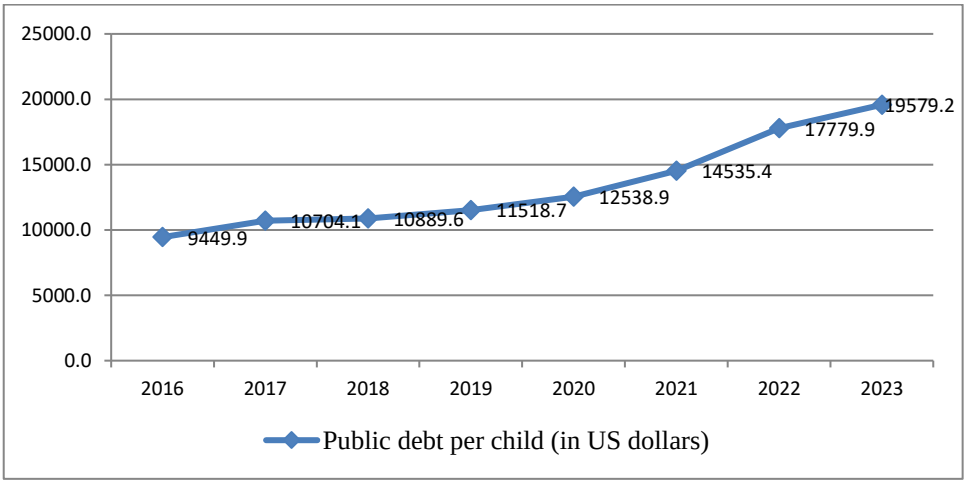
Source: *World Development Indicators Databank https://databank.worldbank.org/source/world-development-indicators#*

In the period under review, the share of R&D expenditure in the GDP of Armenia is stable (not high), and compared to the countries of the region, the trends are generally similar. However, when compared with the corresponding indicators of Israel, it becomes evident that in a rapidly evolving global environment, Armenia's key economic sectors – those critical for ensuring future competitiveness – do not generate particularly high expectations regarding the return on existing investments.

Regarding the dynamics of public debt indicators, Table 1 shows that although public debt has increased in absolute terms (in US dollar value) in recent years, its ratio to GDP has declined during 2022–2023 – a development generally considered positive. However, from the perspective of intergenerational equity, the trend in public debt per child (Figure 2) raises significant concerns.

Figure 2

Public Debt per Child (in US dollars) in Armenia for 2016-2013



Source: *NSS RA statistical yearbooks and publications data. The web was visited 20.03.2025*

The public debt per child (in US dollars) has been increasing steadily over the period under review, but the rate of increase has also accelerated in recent years. In 2022, the indicator increased by 18.25 per cent compared to the previous year and in 2023 by 9.19 per cent compared to 2022. This increase is the result of an increase in the absolute value

of public debt on the one hand, and a decrease in the number of children on the other. In particular, in 2022, the number of children in Armenia (including the population below working age) was the lowest in the period under review – 598.3 thousand, compared to 634.7 thousand last year. In 2016, the number of children was 628.8 thousand, in 2023 – 605 thousand[16].

The increase in public debt combined with the declining number of children is a serious concern in the context of intergenerational justice. Increasing public debt is, in fact, an alternative solution to raise the necessary funds to finance public (including social) programmes, which is applied at the expense of not increasing tax rates for today's generation, and hence the tax burden. However, all other things being equal, such a solution is not sustainable in the long term: eventually, in order to repay the accumulated public debt, an increase in the tax burden will become inevitable—one that will fall squarely on the shoulders of future generations. Given the current low growth in the number of children, this burden will be even heavier for each individual member of society in the future.

Conclusion

In the current context of economic shifts, GDP growth is not a sufficient indicator for assessing the real potential of an economy. Moreover, it can often be a warning sign that sustainable development opportunities are being exhausted. When GDP grows, but the environment suffers and resources are used sparingly, it indicates serious problems in the economy. Therefore, one of the priorities of macro policy should not be the constant expansion of the 'pie', but its possible equitable distribution not only among the present, but also among future generations.

The study of the dynamics of intergenerational justice indicators in the Republic of Armenia reveals serious signals regarding the multifaceted problems existing in the context of the issue of intergenerational justice. Alarming dynamics are observed for all indicators. Pension and family allowance policy indicators point to trends of deepening income inequality and further reducing opportunities for vulnerable groups in the future. If the trend in environmental indicators continues, the next generation is likely to inherit an ecological environment with significant negative impacts on quality of life, in particular high levels of air pollution and the extreme rarity of forested areas.

Rising public debt that is not accompanied by progressive fertility growth, in a context of low R&D expenditure, could potentially increase the tax burden on the working population, jeopardising the provision of an acceptable level of general welfare for the next generation.

Consequently, the priorities of Armenia's state macroeconomic and social policy need to be revised with a focus on the factor impacts of intergenerational justice. Such an approach is not only fundamental in terms of sustainable economic development, but also contributes significantly to the realisation of the principle of social justice among the current generation, curbing the deepening of income inequality for the future generation.

References

Gyozalyan, Vardush (2022): *Economics and Social Justice*, Yerevan. Edit Print, pp. 215-237.

Höffe, Otfried (2006): Gerechtigkeit, Eine philosophische Einführung, Verlag C.H. Beck, München (Russian edition. Justice. Philosophical Introduction, trans. from German, M, Praxis, 2007, p. 194)

[16] Statistical Yearbook of Armenia 2024, p. 29.

Merkel, Wolfgang and Giebler, Heiko (2009): *Measuring Social Justice and Sustainable Governance in the OECD. In Sustainable Governance Indicators 2009: Policy Performance and Executive Capacity in the OECD*, edited by the Bertelsmann Stiftung, 187–215. Gütersloh: Bertelsmann Stiftung.

Handbook of Intergenerational Justice, edited by Joerg Chet Tremmel, Northampton, 2006, 350 p.

Mine Waste and Tailing Storage in Armenia: Disaster Risk Management, *Educational Handbook, AUA Center for Responsible Mining, Yerevan, 2020*, 59 p.

Rawls John (1971) *A Theory of Justice*, Harvard University Press, 561 p.

Sen, Amartya (2009): *The Idea of Justice*, The Belknap Press of Harvard University Press, Cambridge, Massachusetts pp. 248-249.

Social Justice in the EU and OECD, Index Report 2019, 94 p.

Solow, Robert (1992): *An Almost Practical Step toward Sustainability*. Washington, DC: Resources for the Future, Volume 19, Issue 3, pp. 162-172.

Statistical Yearbook of Armenia 2024.

Stiglitz Joseph (2019): *People, Power, and Profits: Progressive Capitalism for an Age of Discontent*, pp. 191-193.

Wiedmann et all, *The Material Footprint of Nations, Proceedings of the National Academy of Sciences*, September 2013.

World Commission on Environment and Development. *Our Common Future*. New York: Oxford University Press, 1987.

Journal of Yerevan University. Economy
2025, Vol. 16, No. 1(45), June, 48-58
https://doi.org/10.46991/BYSU.G/2025.16.1.048

LABOR MARKET DEVELOPMENTS IN THE REPUBLIC OF ARMENIA

AMALYA GALSTYAN *
Yerevan State University

Abstract: Effective functioning of the labor market is one of the keys to sustainable development and economic growth. Thus, corresponding government policy along with the other socio-economic regulation mechanisms has a direct impact not only on the rate of employment and unemployment, but the other labor market indicators and as a result, on the economy as a whole. The article explains the situation in the labor market of the Republic of Armenia, by investigating main indicators and the reasons for the tense situation, as well as presenting recommendation on improving it. In particular, it's recommended to tighten collaboration among universities and businesses, by creating specialized training programs, by improving technical and vocational education (TVE), by developing labor market institutions and by implementing appropriate policy.

Key words: *employment and unemployment level, tension indicators, labor market situation, "brain drain", labor market policy.*

Introduction

Employment is the most important macroeconomic indicator whose changes in level and structure reflect both the socio-economic changes in the country and the situation of the entire society. Being a system of relations aimed at involving the population in the work process, it reflects the level of economic demand for the workforce, on the one hand, and the satisfaction of employees' personal demands and preferences through paid and appropriate income-providing jobs, on the other. It is clear that the provision of full employment is impossible to imagine only thanks to and through the clear functioning of the market mechanism and undoubtedly requires state intervention and regulation. It is interconnected with changing demographic waves and indicators, some of which at once, and some after a certain amount of time, influence the labor market and the entire economy. This is foremost about the population entering working age, as well as migration processes. Moreover, collaboration between education and business is widely acknowledged as a crucial point not only in human resources development, but also in the economy, as a whole. In this context, effective collaboration between universities and industries assumes paramount importance. Functioning as a tool with specific mechanisms and channels, this collaboration can enhance the skills and abilities of workers,

* **Amalya Galstyan** – PhD in Economics, Associate Professor at the Chair of Management and Business of YSU Faculty of Economics and Management
Email: amaliagalstyan@ysu.am ORCID: https://orcid.org/0009-0008-2027-5112

Received: 18.03.2025
Revised: 31.03.2025
Accepted: 06.06.2025

elevate productivity levels, address labor market mismatches, and improve the quality of education. Notably, the mismatch between industry and university holds special significance, as it can create imbalances in the labor market. However, collaboration emerges as the most suitable approach to address and mitigate these challenges, offering potential solutions that benefit all partners (Khachatryan K., Hakobjanyan A., Nikoghosyan K**.,** 2024**,** 11).

Results and findings

Achieving the goal of full, productive, and freely chosen employment, tackling poverty, inequalities and ensuring an inclusive structural transformation are essential for making progress on sustainable development, and require comprehensive employment policy that convey the short- and longer-term impacts of such change. The goals and tasks of the labor market policy in individual countries result from the specific economic, social and political conditions. However, of course, programs and initiatives with an international scope are of great importance, influencing the shaping of national employment systems, their unification and adaptation to world standards. Each country implements a labor market policy for the society consisting of influencing the supply and demand for labor in order to maintain the balance, with particular emphasis on the need to achieve the main goal, which is a high level of employment and a low level of unemployment. Due to the economic and social importance, as well as specific employment functions, these activities are among the most important ones undertaken in the field of economic policy (Miciuła I., Rogowska K., Wojtaszek H., 2021, 12453). So implementing effective employment policy greatly affects the living standards, health, education, and other problems of the population. Thus, when the world encountered a COVID-19 pandemic, in addition to heavy human losses, there were widespread job cuts as a result of reduced manufacturing power and consumer demand (except for some branches), and an increasing unemployment level, as well. Today, it can be said that the world has overcome the above-mentioned consequences, as also expressed in the data of the International Labor Organization. The world's employment rate was 60% in 2023, unemployment was 5.1%, and the working poor were 6.4% (Global labor figures, 2024). And despite some slowdown in economic growth, global growth was slightly higher than forecast in 2023, and labor markets saw stability in both unemployment and the job deficit, even though the latter approached 435 million (World Employment, 2024). Moreover, the labor force participation rate in 2023 has increased significantly compared to the decline during the pandemic period, especially in low-, middle-, and high-income countries; however, there are some regional differences. This idea is important because during the period mentioned and in general, under economic instability, the loss of work was a key factor in the decline in living standards, as well as a serious psychological blow. Under these circumstances, the role of the states in regulating the employment of the population becomes important.

By the way, in addition to the latest pandemic, as developments show, the situation in the labor market can change dramatically and, so to speak, get out of control, due to "shocks" that scientists believe, are expressed in three areas: number of jobs (unemployment and incomplete employment), quality of work (wages and access to social security) and influence on most vulnerable groups (Simchenko N., Troyan I., Goryacickh M., 2020, 79). The impact of major crises during historical development is also well-known,

particularly the Spanish flu, the two world wars, and so on, each with its own consequences in the labor market. As a result of the research conducted in the USA, the scientists identified 6 main types of "shocks" (Rodrik D, Di Tella R, 2019, 2) due to:

- a drop in the demand for the good produced by the factory ("demand shock");
- disruption in production due to new, labor-saving technology ("technology shock");
- mistakes by management ("bad management");
- international outsourcing to an advanced country;
- international outsourcing to a developing country;
- international outsourcing to a developing country with an emphasis on poor labor standards.

To the mentioned reasons, we may also add a purely regional characteristic: the transition from the prime administrative-command method of management to the market one in the post-Soviet territory, which included all aspects of society's life activity, and especially socio-economic. It had a direct impact in the labor market, employment of the population, leading to a significant increase in the volume of labor migration.

While researching the labor market's trends and dynamics method of analysis was used, summarizing main characteristics of the labor market and identifying basic trends, particularly examining rates of employment, unemployment, average duration of unemployment, studying demand for jobs, workload of 1 temporary workplace, etc. When gathering information from different sources, such as survey data from the Statistical Committee of the RA, International Labor Organization, the International Organization of Migration, a method of synthesis was used to form a broader understanding of the problems.

Thus, analyzing labor market of the Republic of Armenia, we can distinguish several stages. First, the period of formation of the labor market (1991-1998), when there was multi-ownership of the means of production, structural changes in production, formation of market relations, bankruptcy of unprofitable or less profitable enterprises, as well as the breakdown of previous economic ties between countries and the formation of new ones.

During the transition period, most of the CIS countries were characterized by a decline in the scale of production, a massive reduction in investment, high rates of inflation, and as a result, an ever-widening gap between wages and prices, a deepening of social tension, an increase in the number of unemployed, etc. In addition, the institutional environment was not shaped, which greatly hindered the formation and development of a civilized labor market and adequate infrastructure, where employment relationships would be regulated by employment contracts. Unfortunately, at that time oral arrangements and non-formal employment were very popular. Unlike other countries during the transition period, RA took upon itself not only the complications of transition, but also the consequences of the 1988 earthquake, blockade and war, which became the reason for the high level of unemployment, as well as a large wave of "brain drain".

In the early 2000s, the RA labor market was characterized by high tension due to the continuous increase in labor supply and decrease in demand. Despite the fact that some stabilization occurred, particularly in employment rates, there was a high level of unemployment, average duration of unemployment, and other indicators documenting that the labor market tension remained high. According to official statistics, from 1990 to 2001

employment in the RA decreased by 22.5% particularly in the industry - 65.7%, in construction - 77.7 %, in science and scientific maintenance - 72.5%. Higher rates of reduction in the science sector were linked, first of all, with the high mobility of scientific personnel, who, from the beginning of market transformations, either moved to more profitable spheres, often unrelated to their qualifications, spheres, or were forced to emigrate, becoming the basis for "brain drain". Moreover, during the same period, 17% of the employed population in the RA was considered "working poor". As for the level of unemployment, in 1996 it was already 9.3%, and in 2000 11.7% (Yearbook 2002, 53), and the hidden unemployment rate in 2001 varied between 30 and 35% (The Concept, 2002, 10). Moreover, according to sample surveys, in the early 2000's, unemployment rates varied by 30% (Social-economy situation, 2000, 84; Social-economy situation, 2001, 98; Social-economy situation, 2002, 108).

Among the reasons explaining the high percentage of the working poor, are interconnected factors such as:

- economic downturns or fluctuations that reduced job opportunities and increased competition for existing positions, making it harder for low-wage workers to guarantee well-paying jobs and a proper level of income,
- high level of hidden unemployment, including underemployment (as mentioned above), caused the situation, when many individuals, pretending to be employed like full-time workers, couldn't find an appropriate workplace. Moreover, many workers could be employed in a temporary position, but not be paid, which led to an inadequate level of income,
- level of wages in many sectors of the economy (including science, education and the other) didn't meet even basic living standards, and minimum wage level didn't keep pace with inflation,
- rising costs of living, such as housing, healthcare, education, etc., went faster than wage growth, which was insufficient as well, thereby worsening the situation of the low-paid workers,
- many of the jobs in the "working poor" part of the employed population were doubtful; in particular, the freelance economy and temporary jobs were unstable and insecure, which led to periods of unemployment and lack of income.
- level of education and lack of skill caused the lower-paying jobs, especially for the persons without access to affordable educational programs. That's why moving up the career ladder, which provides suitable income, was challenging.

Notably, the analysis of the labor market and, in particular, employment and unemployment indicators, within the framework of the institutional and information database faces a number of limitations, due to which, in order to visualize the phenomena more clearly, it is necessary to use additional indicators that complete the picture. Those indicators respond much more quickly to changes in the labor market situation than the level of unemployment (Tab.1). First, while analyzing the data, it gets a little complicated, especially with the calculation of the unemployment rate, since the Statistical Committee of the Republic of Armenia's methodology has been revised twice during the period.

And so, the workload of one temporary workplace in 2000 has been reduced 10 times since, and during that same period, demand for the workforce has increased almost four times, which certainly testifies, on the one hand, to the development of the economy, and on the other, to certain migration processes, not applying to the employment service, as

well as stopping the active search for work and being included in the household. The tension in the labor market is also increased by the average duration of unemployment, which in 2022 had more than doubled and amounted to 34 months, and the share of the unemployed for more than a year remained almost unchanged during this same period, about 75%, except for 2010-2015, when it fluctuated within 57-59 %. During that same period, the workload of 1 temporary workplace has halved, and the demand for jobs presented by organizations doubles, from 944 becoming 1761. By the way, it should be noted that the workload of one vacancy reaches its minimum value (24) in 2019, and respectively, the maximum values are recorded by the demand presented by employers (3608) and the share of people placed in a job - almost 16%.

Table 1

Indicators of the Tension in **the Labor Market of the RA in 2000-2023**

	Rate of unemployment, %	Workload of 1 temporary workplace	Demand for jobs presented by organizations	Average duration of unemployment, month	Long-term unemployment rate, %	Job placement of job seekers (to total number of job seekers), %
2000	11,7	316	561	14.1	73.5	5.9
2005	8.2	99	1129	15.7	80.3	6.8
2010	19.0	85	944	23.1	57.5	12.2
2015	18.5	44	1761	22.4	59.4	11.3
2018	19.0	32	2567	33.7	76.5	14.6
2019	18.3	24	3608	33.7	73.7	15.9
2020	18.2	73	1203	34.3	75.7	11.5
2021	15.5	39	2207	32.9	73.2	11.7
2022	13.5	30	2384	34.0	76.5	14.7
2023	12.4	18	3621	29.4	69.1	16.9

Source: *The table compiled by the author according to the Annual reports of the Statistical Committee of the Republic of Armenia*

However, COVID-19 radically changed the picture and already in 2020 there was a three-fold increase in the workload of one vacancy and a decrease in the share of people placed in a job to 11.5%. Despite these fluctuations, the long-term, or chronic, unemployment rate remains unchanged - at 73-76%.

The high level of unemployment for more than one year is mainly due to the following reasons:

- Problems related to qualification and experience, in particular, the gap between the requirements of the labor market and the qualifications of potential employees, when on the one hand young people entering the labor market do not have appropriate experience,

and on the other hand, the qualifications of middle-aged and older people are often outdated,

- One vacancy with a high load, therefore, and a high degree of competition, as a result of which even highly qualified specialists remain unemployed for a long period of time (which will be discussed below);
- Low mobility of people from regions with high unemployment rate, which is due to both economic and social factors,
- Due to the lack of adequate requalification, employment support programs provided by the Employment Service, especially during the long-term unemployment period,
- Psychological and social factors: when people who have been or are still in a long period of unemployment lose motivation, which further slows down the process.

Another indicator of the tense situation in the labor market is the share of unemployed with higher education in the overall number of unemployed; by the way, if it's not high, then the image of tension also changes a little. The level of education does not definitely affect one's behavior in the labor market. On the one hand, a high level of education should reduce the risk of job loss, but on the other hand, in the face of job loss, education can both contribute to and impede rapid employment. As the level of education increases, a person's demands for working conditions and wages also increase, as well as increase costs, associated with the necessary training, and extend the duration of the job search.

Thus, if we consider the experience of Central and Eastern European countries, then in the transition period, even in conditions of high unemployment, the share of people with higher education was 2-3% in Hungary and Slovakia, up to 4-5% in the Czech Republic and Poland and 8% in Bulgaria. Meanwhile, in Armenia during that same period (1996-2000) it varied between 11.8 and 12%, reaching 14.8% in 2010, in 2016 showing a decreasing trend (12.1%) and already reaching 10.7% in 2023 (Yearbook 2001, 56, Yearbook 2011, 63, Yearbook 2016, 74, Yearbook 2024, 121). During this same period, relevant indicators in those countries decreased several times to 2023: in the Czech Republic and Poland 1.3%, Hungary 1.6%, Bulgaria 1.9%, and Slovakia 2% (Unemployment by Level, 2024).

A high level of unemployment among individuals with high education can be explained by the following factors:

- periods of recession led to the situation, when finding a job even for those with high education and appropriate degrees was challenging,
- detach between the skills of higher education and those needed by employers. Mismatch of skills is observed when degree holders find that their specific knowledge does not range with the needs of the labor market,
- sometimes the worth of a degree varied remarkably from one field of study to another; particularly, most of the graduates in the sphere of engineering, high technologies, where demand for workers was and is high, have better job opportunities and prospects compared with the others,
- most of the employers choose candidates with applicable work experience. New graduates often may be inexperienced despite their intellectual credentials, making the competition more challenging,
- structural changes in labor market dynamics and the economy as a whole, when the rise of automation and artificial intelligence transformed many industries, thereby leading to the antiquity of certain skills.

Thus, policymakers and educational institutions should try to reduce the gap between the level of education and the needs of the economy, ensuring that graduates are better prepared to enter the labor market successfully.

According to official statistics, from 2008 to 2016, the number of persons with tertiary education among the poor population fluctuated between 14.7 and 16.8%, in 2023 figure was 16.2%, and with secondary professional education - 21.9%, 27.1% and 22.7%, respectively. Moreover, in 2008 the employed made up 22.2% of the poor population, in 2016 - 23.9% and in 2023 - 20.7% (Social Snapshot, 2017, 52, 54, Social Snapshot, 2024, 45), which indicates the impossibility of providing an adequate living standard, as well as the complexities of reproducing the working potential both at the individual and state level.

All of this once again demonstrates and proves the clarification of the labor market-university connection, because as a result of the mismatch between the educational level of a part of the population and jobs, not only workers, but also the state suffers significant losses. University-industry partnership is pivotal in facilitating knowledge transfer and innovation and fostering economic and innovative growth. Universities are transitioning into entrepreneurial institutions, expanding their focus beyond traditional teaching and research to promote innovation and business activities actively. The Triple Helix and Quintuple Helix conceptual frameworks offer valuable models for comprehending and augmenting these collaborations, underscoring the interconnectedness of academia, industry, government, civil society, and the environment. Additionally, university-industry partnerships prove crucial in supporting regional development strategies like the Smart Specialization Strategy, thereby propelling innovation and economic development (Khachatryan K., Hakobjanyan A., Nikoghosyan K**.,** 2024**,** 152)**.** Therefore, it is necessary to implement appropriate government policy, as the ineffective use of the labor force negatively impacts not only labor productivity and economic growth indicators but also becomes a reason for emigration, in particular, labor migration.

Migration, being an integral part of human development, is also considered a positive phenomenon, referring to its basic functions—economic and social. However, when it comes to labor migration, which can later turn into, and often turns into, irreversible migration, it is clear that it has unrecoverable consequences for the donor country, especially when it comes to "brain drain". After all, in this case, the country loses its most valuable capital - the human one, in whose development has been invested and which should have served the country's development.

According to the World Migration Report, if in 2000 the number of migrants in the world was 150 million people (2.8% of the world's population), then in 2020 their number was already 281 million (3.6% of the world's population), of which 169 million were labor migrants (2000 figures are missing). While the estimated number of international migrants has increased over the past 50 years, it is important to note that the vast majority of people live in the country in which they were born. In the latest international migrant estimates (dated as at mid-2020), almost 281 million people lived in a country other than their country of birth, or about 128 million more than 30 years earlier, in 1990 (153 million), and over three times the estimated number in 1970 (84 million). For 10 countries, the estimated net outflow of migrants exceeded 1 million over the period from 2010 through 2021. In many of these countries the outflows were due to temporary labor movements, such as for Pakistan (net flow of −16.5 million), India (−3.5 million), Bangladesh

(−2.9 million), Nepal (−1.6 million) and Sri Lanka (−1.0 million). In other countries, including the Syrian Arab Republic (−4.6 million), the Bolivarian Republic of Venezuela (−4.8 million) and Myanmar (−1.0 million), insecurity and conflict drove the outflow of migrants over this period (World Migration 2024, 8, 21, 28).

Moreover, OECD data reveals that in 2020 there were around 120 million migrants living in OECD member countries; 30 to 35 percent of these migrants are considered highly educated, meaning they have received vocational or academic training. Among the most common birth countries for highly educated migrants, these shares are a lot higher, however (World Economic Forum).

Armenia, not being in the above-mentioned ten countries in terms of emigration scale, nevertheless has a negative migration balance, and taking into account the issue of "brain drain", the problem is even more aggravated. Despite the lack of official statistics on "brain drain", respondents in sample surveys indicate socio-economic factors as the main reason for emigration. From the variety of reasons three main cause of emigration during 2013-2023 were chosen and presented in a table below. Moreover, that very period had been picked out because of the comparability of relevant data by official statistics.

Table 2

Households with migrant members 15 years of age and older by main reasons for migration during 2013-2023 (in %)

Involvement/ Reasons	Migrated and not returned	Need to/Search for a work	Study/training	Family circumstances
2013	33.6	67.1	5.8	5.9
2014	-	69.2	-	0.5
2015	-	71.0	2.8	3.5
2016	55.9	66.7	5.3	2.7
2017	52.4	64.3	8.5	3.3
2018	60.7	77.1	5.0	1.5
2020	42.1	56.6	5.3	4.3
2021	55.5	69.9	6.0	2.5
2022	53.2	66.3	7.7	3.7
2023	38.5	64.4	5.5	5.0

Source: *The table compiled by the author according to the Annual Social Snapshot and Poverty Reports of the Statistical Committee of the Republic of Armenia, based on the Integrated Living Conditions Survey (ILCS).*

In particular, during the period under review, since 2016 more than half of migrants migrated and didn't not return, except years 2020 and 2023 and the main reason for the departure was work/job seeking, which reached its highest position in 2015 (71%) and 2018 (77.1%), after which it showed tendency to decrease, nevertheless still remaining high in 2023 (64.4%) (Social Snapshot, 2024, 23). Another reason for emigration that seemed to be not so high, but at the same time very important is study/training, especially taking into account the fact, that only 1.0% of them have returned in 2023. Despite the decreasing trend since 2017 when the relevant indicator was 8.5% (Social Snapshot,

2018, 28), it is an ongoing concern, especially considering the age of migrants and the investment they could make in the economic development of the country.

Therefore, in order to resolve the university-labor market problem, the regulation of which will lead to solving not only unemployment, but also migration and the other interrelated problems, it is necessary to implement a targeted state policy in the following directions.

First of all, one of the employment policy directions can be considered the importance of developing workforce skills, by corresponding educational programs with the needs of the labor market and by establishing partnership between universities and businesses to create specialized training programs. Industry professionals can be involved in the process of developing academic programs in order to remain relevant. Moreover, it's significant to implement apprenticeship and expand internship programs, therefore the opportunities to gain practical experience for young people entering the labor market. That's why university syllabuses regularly should be updated to include the latest industry trends, technologies, and skills. It's important to develop flexible training programs and certifications for professionals to upskill alongside the rising industry, as well as for unemployed persons (reskilling or upskilling), which are aimed at learning new skills relevant to growing industries. Thus, the lifelong learning opportunities are crucial.

Secondly, it's essential to improve technical and vocational education (TVE) by applying and combining theoretical learning with practical training through partnerships with businesses. Implementing innovation-promoting policy by subsidizing the establishment of university-related incubators will stimulate student entrepreneurship and innovation abilities, increase financial support for research and development in universities to make the collaboration with the private sector more attractive and to create job opportunities.

Finally, it's urgent to develop labor market institutions, employment services, by improving and making quicker and more efficient the process of connection job seekers with employers, by building a database of employers actively seeking talent. Then, improve and develop investigations in the field of labor market data to anticipate industry trends and adapt policies accordingly. Conducting regular labor market studies will help to identify high-demand sectors and skills gaps. It is important to establish corresponding mechanisms for finding out from the employers the information on graduates' realization and then updating the educational programs.

A national skills development strategy is crucial, which includes developing an inclusive policy to identify current and future skills needs and guide educational reform with the necessities of the labor market and the economy at all. Focusing on the regional development programs, ranging them with the economic priorities of specific regions and university programs, will aim to balance development of the regions and the capital city.

Conclusion

The situation in the labor market and its effective functioning mainly depend on targeted government policy to support both labor market stability and sustainable development. In this regard, it is important to identify the needs of the labor market and develop partnerships between universities and businesses by creating corresponding training programs. In this regard, it's important to conduct labor market analysis by monitoring job

descriptions to discover skill trends, arranging the interviews with business leaders and HR professionals, and keeping insight into digital job marketplaces for trending job categories. Creating advisory boards that include business leaders to regularly review course appropriateness for the evolving needs of the economy (co-develop courses and case studies), collaborate on research initiatives, and organize career talks, guest lectures, and networking events with industry professionals is crucial as well.

It's pivotal to create opportunities for combining theoretical and practical skills through partnerships with businesses by integrating soft skills training and creating work-integrated learning opportunities. Making easy opportunities for internships will help students work within businesses as part of their academic program, where they would be able to solve industry-specific issues and provide a gradual transition from theory to practice. Project-based learning can be considered as a part of TVE when student teams engage in challenging projects provided by business partners, generating academic results and providing practical insights to businesses. In this regard, mentoring programs can be created where professionals guide students through their academic and early career paths. Putting into practice mechanisms for gathering feedback from business partners about the performance of graduates is important as well. Moreover, the effectiveness of the educational programs can also be estimated through graduates' career progress.

Thus, tripartite among universities, industries, and the government can decrease the gap between higher education and the labor market, stimulate economic growth, reduce the scale of youth unemployment and labor migration, especially "brain drain," and, finally, solve demographic problems.

References

Global labour figures at a glance**.** Data and statistics 2024, https://www.ilo.org/data-and-statistics

Miciuła, I., Rogowska, K., Wojtaszek, H. The Labor Market And Its Influence On Shaping The Business, *Journal Information Technology and Management· July 2021:*12449-12455, https://www.researchgate.net/publication/353549568_The_Labor_Market_And_Its_Influence_On_Shaping_The_Business

Khachatryan, K., Hakobjanyan, A., Nikoghosyan, K. Bridging Academia and Industry: Unraveling University-Industry Collaborations in the EU and Transitioning Economies *Insights from Armenia and Italy, Yerevan, YSU Press, 2024.*

Rodrik, D, Di Tella, R. Labor Market Shocks and the Demand for Trade Protection: Evidence from Online Surveys. Working Paper 25705. National Bureau Of Economic Research, March 2019,https://www.nber.org/system/files/working_papers/w25705/w25705.pdf

Simchenko, N., Troyan, I., Goryachikh, M., Labour market development under the external shocks, *Journal of Theoretical Economics,*10, 2020: 78-86

Social-economy Situation of RA, January-December, 2000, NSS RA, 2001 https://armstat.am/file/article/sv_12a_2000_141.pdf

Social-economy Situation of RA, January-December, 2001, NSS RA, 2002, https://armstat.am/file/article/sv-12a-01-iii.1.4.1.pdf

Social-economy Situation of RA, January-December, 2002, NSS RA, 2003 https://armstat.am/file/article/sv-12a-02-iii.1.4.1..pdf

Social Snapshot and Poverty in Armenia, 2018. Part 1 Armenia: Poverty Snapshot over 2008-2017https://armstat.am/file/article/poverty_2018_english_2.pdf

Social Snapshot and Poverty in Armenia, 2024. Part 1 Armenia: Poverty Snapshot over 2020-2023 https://armstat.am/file/article/poverty_2024_en_2.pdf

Statistical Yearbook of Armenia 2001 (1999, 2000),NSS RA,Yerevan,2001 https://armstat.am/file/doc/686.pdf

Statistical Yearbook of Armenia 2002,NSS RA,Yerevan,2002 https://armstat.am/file/doc/630.pdf
Statistical Yearbook of Armenia 2011, NSS RA Yerevan 2011 https://armstat.am/file/doc/99466628.pdf
Statistical Yearbook of Armenia 2016,NSS RA Yerevan,2016 https://armstat.am/file/doc/99504348.pdf
Statistical Yearbook of Armenia 2024, NSS RA, Yerevan,2024
The Concept of Sustainable Development. For Sustainable Human Development/UNEP National Committee. Yerevan, 2002
Unemployment by level of education 2024. World Bank, https://genderdata.worldbank.org/en/indicator/sl-uem-elv-zs?Educ ation = Adva nce d&gender=total
World Economic Forum. Where the World's Highly Educated Migrants Come From. https://www.weforum.org /stories/2020/12/where-do-highly-educated-migrants-come-from/
World Employment and Social Outlook. Trends 2024.ILO, Geneva, 2024, https://www.ilo. org/ publications/flagship-reports/world-employment-and-social-outlook-trends-2024 p.11
1. World Migration Report 2024, IOM, UN Migration, https://publications. iom.int/ books/ world-migration-report-2024.

Journal of Yerevan University. Economy
2025, Vol. 16, No. 1(45), June, 59-69
https://doi.org/10.46991/BYSU.G/2025.16.1.059

COMPETITION AND CORRUPTION: HOW THE LEVEL OF COMPETITION AFFECTS CORRUPT PRACTICES IN PUBLIC PROCUREMENT

DAVID HOVHANNISYAN, TATEVIK HOVHANNISYAN*
Competition Protection Commission Republic of Armenia

Abstract. Public procurement plays a crucial role in ensuring effective governance and economic growth, encompassing processes through which governmental entities acquire goods, services, and works. Public procurement has a significant impact on the provision of public services and stimulates economic development. In many countries, public procurement represents a notable portion of government expenditure, often accounting for 15-20% of GDP. The dynamics of public procurement directly affect market behavior, set industry standards, and can promote innovation. Establishing a competitive environment is crucial for enhancing transparency and accountability in procurement processes, which ultimately leads to more efficient use of public funds. Moreover, fostering competition can mitigate anti-competitive practices and reduce the risk of corruption, which is often exacerbated by non-transparent procurement systems. This article employs a qualitative analysis, utilizing insights from public choice theory and examining case studies from Estonia, South Korea, and Armenia to explore the interplay between competition levels in public procurement and the prevalence of anti-competitive behavior and corruption. It emphasizes the importance of institutional frameworks that support competition and transparency to combat corruption and improve public procurement efficacy.

Key words: *Public procurement, anti-competitive behavior, governance, economic development, competition, corruption, transparency, public choice theory, institutional frameworks.*

Introduction

Public procurement plays a pivotal role in the public administration system and the general economy. In particular, public procurement includes the process of acquiring goods, services and works for the needs of governmental entities which is important not only for ensuring the efficient delivery of public services but also for promoting economic development. According to World Bank data for 2017, public procurement represents a significant portion of government expenditure, often comprising 15-20 percent of GDP (OECD, 2017).

* **David Hovhannisyan** – PhD in Economics, Associate Professor, Deputy General Secretary of Competition Protection Commission
E-mail: hdavit@inbox.ru ORCID: https://orcid.org/0009-0009-9938-0317
Tatevik Hovhannisyan – Postgraduate Student, Russian-Armenian University, Head of Division of Control on Anticompetitive Agreements and Public Procurement of Department of Competition Control, Competition Protection Commission
E-mail: tatevikhovhannisyan4@gmail.com ORCID: https://orcid.org/0009-0008-0797-2044

Received: 24.04.2025
Revised: 26.04.2025
Accepted: 06.06.2025

The economic impact of public procurement is profound, as this process directly influences dynamics of market development, establishes industry benchmarks and can stimulate innovation. In the aforementioned context, ensuring and maintaining a competitive environment in the public procurement process is particularly important, as competition promotes process transparency and accountability, which ultimately leads to the efficient use of public resources.

Moreover, a strong and stable competitive environment can curb anti-competitive behavior within procurement procedures, not only between business entities but also between businesses and governmental agencies, thereby reducing potential corruption risks that often arise in non-transparent procurement processes. Corruption in public procurement is a pervasive issue that undermines the integrity of government processes and diminishes public trust. It manifests itself in various forms, including bribery, bid rigging and favoritism, often leading to the selection of suppliers based on personal connections. Such practices not only distort market competition but also lead to significant negative economic consequences. According to the World Bank's assessment of 2012, corrupt procurement can inflate state expenditures by 20 to 25 percent, resulting in the non-targeted allocation of state resources (World Bank, 2012).

This study aims to examine the relationship between competition levels in public procurement and the prevalence of anti-competitive behavior and corruption. Specifically, it seeks to answer the following research questions:

1. How does the level of competition impact the occurrence of anti-competitive practices in public procurement?
2. What role do institutional frameworks and transparency play in reducing corruption in procurement processes?

This study adopts a comprehensive methodological approach, combining case studies, theoretical exploration, and statistical analysis.

Case Studies: The case studies focus on the public procurement systems in Estonia, South Korea, and Armenia, offering in-depth qualitative insights into how competition and transparency have impacted corruption levels. These case studies draw on official government reports, such as Estonia's Public Procurement Act of 2007, South Korea's KONEPS system reports, and Armenia's e-procurement platform documentation. Additionally, data from national procurement databases and reports from Transparency International were analyzed to assess corruption trends and procurement outcomes.

Theoretical Frameworks: Theoretical frameworks, including public choice theory and institutional economics, are employed to provide a conceptual foundation for understanding the dynamics of competition and corruption in procurement systems. These frameworks are applied to interpret how institutional structures and incentives influence corrupt behaviors, as discussed in works by Arrow (1951) and North (1990).

Statistical Analysis: Statistical data from reputable sources such as the World Bank's Governance Indicators, OECD's Public Procurement Toolbox, and Transparency International's Corruption Perceptions Index (CPI) are analyzed to quantify the relationship between competition and anti-competitive practices. Using descriptive statistics, the study examines trends in procurement participation and corruption incidents across the selected countries.

This mixed-methods approach ensures a robust examination of the topic from both theoretical and empirical perspectives.

The correlation between corruption and competition

This section explores the theoretical foundations and empirical connections between competition and corruption in public procurement. The relationship between these two factors is complex, with competition often viewed as a mechanism for reducing corruption by enhancing transparency, accountability, and the efficiency of procurement processes. Drawing on public choice theory and modern economic perspectives, we examine how competition impacts corruption and how institutional frameworks can either mitigate or exacerbate corrupt behaviors in public procurement systems.

Thus, the theory of public choice provides key insights in the context of understanding the dynamics of corruption and competition in public procurement.

Specifically, public choice theory examines how government decisions are influenced by the interests of various stakeholders, including politicians, bureaucrats, and interest groups. It suggests that government failures can occur when these actors prioritize their personal interests, which often leads to inefficiency and corruption.

In the context of public procurement, the aforementioned entities may be involved in corrupt transactions, such as awarding contracts to privileged or selected suppliers to secure personal benefits. Such behavior, as already mentioned, distorts competition and leads to improper and inappropriate allocation of resources.

1. Existing studies on the relationship between competition and corruption in public procurement provide important insights for understanding these dynamics. To start with, Kenneth Arrow's work "Social Choice and Individual Values" lays the foundation for an in-depth analysis of decision-making processes in competitive environments. Arrow provides an intricate discussion about the complexities of aggregating individual preferences into collective decision-making, emphasizing that information asymmetries can lead to suboptimal outcomes (Arrow, K. J., 1951, 9-11).

The aforementioned is particularly significant in the context of public procurement, where a wide variety of stakeholders with different motives and interests often participate in the selection of suppliers. That is, increased transparency and competition can facilitate more efficient decision-making and reduce the opportunities for corruption. Therefore, the establishment of effective public procurement systems implies the reduction of information asymmetries and the promotion of competitive practices, which can improve the quality and efficiency of public service delivery.

Thus, establishing an institutional system through ensuring a competitive environment plays a major role in the reduction of potential corruption risks within the framework of public procurement, within which the following mechanisms are applicable.

- **Increasing competition:** Expanding the number of potential participants in public procurement can reduce the likelihood of favoritism and collusion, as having a larger number of participants makes it more difficult for specific individuals or business entities to influence the procurement process and related decision-making. In this case, it becomes more difficult for the organization to influence the decision-makers.
- **Transparency:** The publication of documents and results in open sources, which were compiled within the framework of procurement processes, allows for public control.

- **Standardization of criteria:** Bidding processes usually include standardized evaluation criteria that can ensure the assessment of the potential participants' applications on the basis of equal conditions and the same principle, focusing on their qualifications and price.
- **Reporting mechanisms:** Within the framework of procurement process monitoring accountability measures such as audits and performance reviews are also applied, which, in fact, contribute to the prevention of corrupt behavior. Such control mechanisms are alternative methods of deterring the involvement of stakeholders in corrupt activities.
- **Prevention of anti-competitive actions:** Within the framework of procurement processes, a healthy competitive environment can prevent the conclusion of anti-competitive agreements among potential participants, since the presence of numerous competitors and the likelihood of signing contracts with the most competitive offers significantly impact the effectiveness and expediency of reaching an agreement within specific participants.
- **Reputation and trust management:** Within the framework of competitive procurement procedures, companies submitting bids must maintain their reputation, as potential negative publications about corrupt actions could lead to long-term distrust of the business entity and potential losses. Consequently, the likelihood of negative reputational impact can encourage potential participants to adhere to ethical behavior and business environment regulations (Bhatia, A., & Dhanani, A., 2021, 78-95).

Expanding on the traditional public choice framework, modern New Institutional Economics (NIE) emphasizes the role of institutional structures in shaping the behavior of government actors. Douglass North suggests that the institutional environment—comprising laws, regulations, and governance structures—can either encourage or constrain corrupt behaviors. When procurement systems lack transparency and accountability, they create opportunities for corruption, making it essential for competitive environments to be institutionalized to mitigate these risks (North DC, 1990, 65-80).

Moreover, insights from Principal-Agent Theory suggest that the relationship between government officials (agents) and private contractors (principals) can be fraught with agency problems. Jensen and Meckling highlight that asymmetries in information and diverging incentives between principals and agents often result in moral hazards, where agents may prioritize personal gain over the public good. In procurement, this can manifest in the form of favoritism or kickbacks, further exacerbating corruption (Jensen, M. C., & Meckling, W. H., 1976, 305-360).

Thus, by integrating both classical public choice theory and more contemporary institutional and behavioral insights, the article can provide a more nuanced understanding of how competition and corruption interact within public procurement systems. Effective procurement requires not only reducing the opportunity for corrupt behavior but also ensuring that the institutional frameworks are in place to foster a competitive and transparent environment.

That is, within the context of public procurement, ensuring competition is an important tool aimed at strengthening integrity and accountability in concluding public contracts. The formation of an institutional system within this framework, in turn, promotes competition and transparency, effectively curbing corrupt practices.

It should also be noted that a comparative analysis of public procurement systems in different countries has shown a strong correlation between higher levels of competition and lower incidences of corruption (Smith, J., 2022, 112-130). Building on this foundation, research by the European Organization for Economic Cooperation proves that procurement procedures conducted with transparent tender processes and the involvement of a large number of suppliers are associated with lower levels of corruption.

Thus, international experience shows that the implementation of electronic procurement systems and the creation of independent control bodies in the framework of public procurement significantly reduce the possibility of corruption.

At the same time, it should be noted that there are certain gaps in the research on competition and corruption in the field of public procurement. In particular, most studies refer to the study of systems in specific regions or countries, but there is no generalized approach regarding the implementation of equivalent electronic tools and control mechanisms (Khashchyan, A., & Hovhannisyan, T., 2022, 45-67).

Thus, by digitizing the procurement process, the state significantly reduces the possibilities for corrupt practices and ensures competition to the fullest extent possible, since all stages of procurement processes are made accessible to the public. Moreover, the presence of the electronic system of public procurement enables real-time monitoring of procurement processes, allowing civil society organizations and citizens to monitor the procurement process. This transparency leads to increased public awareness and engagement, encouraging more suppliers to participate in bidding processes.

Thus, as a result of the abovementioned, the number of participants in purchasing procedures increases, which in turn leads to a more competitive price and quality improvement for the necessary products, works and services (OECD, 2008).

Moreover, by promoting competition and expanding the range of participants, it becomes possible to manage corruption risks as well, since there is typically a correlation between the number of participants in the competition and corruption incidents within that framework.

Some scholars argue that competition is not a universal solution to corruption in public procurement. For instance, high bidder numbers might conceal sophisticated bid rigging or cartels, as observed in certain OECD countries where firms collude to fix prices or rotate wins despite open tenders (OECD, 2008). This suggests that competition's surface-level benefits can be undermined by coordinated anti-competitive behavior, particularly in markets with entrenched oligopolies.

Similarly, in settings with weak institutions, introducing intense competition may overwhelm limited oversight capacities, creating opportunities for corruption through unmonitored loopholes or overburdened regulatory bodies. For example, in some developing nations, rapid increases in procurement participants have led to chaotic tender processes, enabling bribery or favoritism to persist unchecked. Additionally, cultural norms that prioritize personal networks over merit-based systems can resist competitive reforms, sustaining favoritism even in transparent frameworks, as seen in regions where loyalty to kinship or political ties trumps formal rules (Lambsdorff, 2007).

However, while these critiques highlight real challenges in specific contexts, they do not negate the article's central premise. Evidence from case studies in Estonia and South Korea demonstrates competition's broader efficacy. These successes underscore that,

when paired with strong institutional frameworks such as digitized processes, independent audits, and enforceable regulations, competition consistently curbs corruption more effectively than it enables it. Thus, while exceptions exist, the weight of empirical and theoretical support favors competition as a critical tool for enhancing procurement integrity.

The aforementioned arguments are evidenced by the initiatives implemented in the field of public procurement in Estonia and South Korea, which have effectively strengthened competition and reduced corruption in public procurement systems.

Thus, in 2007, Estonia introduced an e-procurement platform – an online system designed to simplify the procurement process, which played a significant role in reducing corruption in public procurement. Prior to this, procurement practices were often opaque, and there were concerns about bribery and favoritism. The Public Procurement Act of 2007 required all procurement to be conducted through a centralized e-procurement portal, which made all stages of the procurement process visible to the public and ensured accountability.

The purpose of platform integration is to increase transparency within public procurement, expand the number of participants, and reduce opportunities for corrupt practices. The electronic system includes standardized and digitized processes, as well as the possibility of real-time monitoring of purchases.

In addition, the Estonian system has some important features that differ from the Armenian procurement system model and can be effectively applied within the framework of the electronic procurement system in Armenia.

One of the important features of the Estonian system is the provision of feedback to participants, which enables continuous improvement in the public procurement system. In particular, participants can share their experiences and suggest improvements, which helps improve procurement processes over time.

At the same time, Estonia uses data analysis to monitor procurement activities and identify repeated patterns or violations. By analyzing public procurement data, the government gains the ability to identify anomalies and patterns that may indicate corruption, allowing proactive measures to be taken.

The digitalization of procurement made it easier to monitor, track, and report procurement activities, reducing opportunities for corruption. Also, the system gained significant public trust by showing clear, verifiable procurement data and providing citizens with the ability to monitor and question procurement decisions.

The research results of studies regarding the above-mentioned system also indicate a significant increase in participation within procurement procedures, while the number of corruption incidents related to procurement decreased by 25%, due to greater transparency and competition (Kasekamp, R., 2020).

A concrete example of how transparency and competition in public procurement can reduce corruption can be seen in Estonia's e-procurement system, particularly during the procurement of large infrastructure projects between 2015 and 2017 (Kattel, R., & Mergel, I., 2016, 261-278). One notable project during this period involved the construction of new public buildings, which required multiple tenders and substantial funding. Through the use of Estonia’s e-procurement system, the bidding process was made open to both Estonian and international contractors.

This system facilitated a high level of competition, as many international firms participated in the bidding process, which ultimately led to lower prices and higher-quality contracts. The competitive environment fostered by the e-procurement platform acted as a powerful deterrent to corrupt practices such as bribery, bid rigging, or favoritism—practices that are often prevalent in non-transparent procurement systems.

The e-procurement system's transparency ensured that every stage of the procurement process was visible and auditable, making it extremely difficult for any party to manipulate the system or circumvent the established rules. As a result, there were no opportunities for corrupt transactions between government officials and contractors. Instead, the increased competition led to more efficient use of public funds and a reduction in the risks of corruption that could arise from opaque procurement systems.

This case clearly demonstrates how an institutionalized, transparent, and competitive procurement system can effectively reduce corruption while improving the overall quality and efficiency of public procurement processes.

The Estonian government’s success with e-procurement has been widely recognized as a model for other countries seeking to improve procurement transparency and reduce corruption. The system also aligns with EU directives on public procurement, setting a strong foundation for further reforms.

Another strong example of successful public procurement reform is South Korea, particularly with the establishment of the Korea Online Electronic Procurement System (the "KONEPS" system) in 2002, which also aimed to increase the efficiency and integrity of public procurement, as well as to provide a transparent bidding environment and promote competition.

"KONEPS" created a fully digitized and standardized process, providing open access to procurement opportunities for both domestic and international suppliers. This open and competitive environment resulted in a significant increase in competition, with more bidders participating in tenders. By digitizing procurement processes, the system also minimized the opportunities for manipulation or corruption, as the bidding and evaluation processes became more transparent.

The system has one common module, which facilitates the access of potential participants to standardized and digitized processes, as well as to specified and digital evaluation methodology, and also creates the possibility of real-time monitoring of purchases.

At the same time, the aforementioned system also has feedback and data analysis tools; however, one of the specific features of the system is the development of the capacities of government officials.

In particular, training programs are being implemented for government officials involved in the procurement field. These programs focus on ethical procurement practices, compliance with regulations and the effective use of the "KONEPS" system, ensuring that officials are trained to maintain integrity in the procurement process.

Between 2020 and 2022, South Korea recorded a significant improvement in procurement practices, with a 35% increase in competitive bids, attributed to KONEPS' continuous modernization and emphasis on transparency. Furthermore, cases of corruption in public procurement decreased by 40%, reflecting the system's ability to increase oversight, reduce human intervention, and streamline processes, thus minimizing opportunities for bribery or favoritism. A study by South Korea's Public Procurement Service indicated that public satisfaction with the procurement process had also increased, as

more businesses felt that they had a fair chance of participating in bids, regardless of their size or connections (Korea's Public Procurement Service, 2022).

Also, between 2020 and 2022, South Korea recorded a significant improvement in procurement practices, with a 35% increase in competitive bids, attributed to KONEPS' continuous modernization and emphasis on transparency. Furthermore, cases of corruption in public procurement decreased by 40%, reflecting the system's ability to increase oversight, reduce human intervention, and streamline processes, thus minimizing opportunities for bribery or favoritism. A study by South Korea's Public Procurement Service indicated that public satisfaction with the procurement process had also increased, as more businesses felt that they had a fair chance of participating in bids, regardless of their size or connections.

The reforms in KONEPS demonstrate that continuous investment in technology, staff training, and transparency in procurement systems are critical for reducing corruption and promoting a competitive bidding environment. South Korea's experience serves as a useful model for other nations aiming to improve their public procurement processes and combat corruption effectively.

Thus, the systems of both countries have common elements, as well as differentiated approaches to managing corruption risks. While both countries emphasize having a digital and transparent public procurement system, the Estonian system is based on accessibility and public involvement, while South Korea emphasizes rigorous qualifications and formal training. Nevertheless, the approaches of both Estonia and South Korea can be effectively applied within the framework of Armenia's e-procurement system.

Following the examples of Estonia and South Korea, Armenia's public procurement system has made strides toward increasing competition and reducing corruption, yet there are areas where improvements can be made. Established in 2007 as part of a broader effort to modernize the country's public procurement processes and increase transparency, Armenia's system laid the foundation for progress. Armenia's public procurement system is primarily based on an electronic platform, which aims to enhance transparency, competition, and efficiency in the procurement process. While the system has made progress, its journey is incomplete, and e-procurement offers a pathway to further enhance its effectiveness.

E-procurement boosts transparency and competition in public procurement, potentially curbing corruption. Data from Estonia, South Korea, and Armenia illustrates this dynamic (Transparency International, 2024):

- **Estonia**: After adopting e-procurement in 2007, the average number of bidders per tender rose from 2.5 in 2005 to 3.5 in 2018 (Estonian Ministry of Finance, 2019). Concurrently, its Corruption Perceptions Index (CPI) score, as reported by Transparency International, improved from 64 in 2007 to 75 in 2020.
- **South Korea**: The KONEPS e-procurement system averaged 5.2 bidders per tender in 2020 (South Korea's Public Procurement Service, 2021), with its CPI score rising from 51 in 2007 to 61 in 2020.
- **Armenia**: In 2019, Armenia averaged 2.1 bidders per tender (Ministry of Finance of the Republic of Armenia, 2020), and its CPI score increased from 30 in 2007 to 49 in 2020.

These trends suggest that higher competition, facilitated by e-procurement, aligns with lower perceived corruption. However, the CPI's reliance on perceptions rather than

direct corruption measures means it provides an incomplete picture, requiring cautious interpretation.

Armenia's 2007 procurement reform, inspired by the successes of Estonia and South Korea, has shown promise but remains a work in progress. The rise in its CPI score from 30 to 42 over 13 years reflects a positive shift in perceptions of corruption. Yet, with an average of just 2.1 bidders per tender in 2019—compared to Estonia's 3.5 and South Korea's 5.2—Armenia has not fully leveraged e-procurement to maximize competition. This gap indicates untapped potential to further reduce corruption risks.

To strengthen its system, Armenia could focus on practical improvements, such as simplifying its e-procurement platform to attract more bidders. Drawing lessons from Estonia's user-friendly digital infrastructure or South Korea's robust KONEPS system could help. By increasing competition, Armenia can build on its transparency gains and align more closely with global best practices:

1. Enhanced Training for Government Officials: In South Korea, continuous training programs for procurement officials are a key element in maintaining integrity in public procurement. Similarly, Armenia could enhance its training programs for officials to ensure they are up-to-date on ethical procurement practices and are effectively complying with regulations.
2. Advanced Data Analysis and Monitoring Tools: South Korea's KONEPS system includes sophisticated data analysis and real-time monitoring tools that enhance oversight, allowing for early detection of irregularities. Armenia could integrate similar monitoring mechanisms in its e-procurement system to reduce corruption opportunities and increase accountability.
3. Increased Stakeholder Engagement: Estonia's success in promoting active involvement from civil society and private stakeholders in its procurement system has been key to maintaining transparency. Armenia could replicate this model by encouraging greater public participation and providing more avenues for external oversight in the procurement process.

It should be noted that the results of the study once again indicate the correlation between the level of competition and corruption in public procurement. The strong negative correlation between the increase in the number of participants in procurement procedures in different countries and corruption incidents highlights the importance of creating a competitive environment to increase transparency and accountability (Smith, J., 2022, 112-130).

Conclusion

The promotion of competition in public procurement, combined with robust monitoring and accountability mechanisms, is crucial for building a transparent and efficient procurement system. This approach not only strengthens market integrity but also ensures the optimal use of public funds, ultimately contributing to broader economic development.

The key findings suggest that to effectively reduce corruption and enhance competition, Armenia's public procurement system needs a comprehensive set of reforms. These should focus on broadening participation, establishing clear evaluation standards, continuous professional training, improving oversight mechanisms, encouraging public involvement, and regular system evaluations.

Specifically, based on the successes of Estonia and South Korea, Armenia must focus on the following: it is reasonable to claim that in order to effectively increase competition and reduce corruption in the field of public procurement, a multilateral approach is needed, within which, based on the successes of Estonia and South Korea, Armenia can focus on the following priorities are discussed:

1. Expanding the Range of Potential Participants: Broaden the Armenian public procurement system's access by simplifying registration and incentivizing diverse and international bidders, inspired by Estonia's inclusive model.
2. Establishing Clear Evaluation Criteria: Define transparent, sector-specific tender standards focusing on cost and quality, independently reviewed, as in South Korea's KONEPS.
3. Continuous Training for Procurement Specialists: Provide regular ethics and training for officials, leveraging expert partnerships like South Korea's approach.
4. Strengthening Control and Accountability Mechanisms: Enhance oversight with analytics and an independent audit unit enforcing strict penalties, mirroring Estonia's success.
5. Encouraging Public Participation and Feedback: Integrate a public feedback portal into the Armenian public procurement system and share transparency reports, following Estonia's participatory framework.
6. Continuous Evaluation and Reform: Annually evaluate the Armenian public procurement system with a task force driving adaptive reforms, benchmarked against global leaders.

These systemic changes are essential to the development of a sustainable procurement process and are in line with international best practices. Therefore, the implementation of the above proposals will significantly increase competition in the public procurement system of Armenia, thereby reducing corruption and leading to a more reasonable use of public funds and, accordingly, contributing to stable economic development.

References

OECD Public Procurement for Innovation: Good Practices and Strategies, OECD Public Governance Reviews, OECD Publishing, Paris, https://doi.org/10.1787/9789264265820-en, 2017, p. 3.

Public procurement reform in Latin America and the Caribbean (English). Washington, D.C.: World Bank, http://documents.worldbank.org/curated/en/371061468229175620/Public-procurement-reform-in-Latin-America-and-the-Caribbean Group, 2012

Arrow, K. J. Social Choice and Individual Values. New Haven: Yale University Press, 1951, 9-11

Bhatia, A., & Dhanani, A. "Fostering Competition in Public Procurement: Insights from Emerging Markets." Public Procurement Law Review, 30(2), 2021, 78-95

Smith, J. "Public Procurement and Corruption: A Comparative Study." Journal of Economic Perspectives, 36(4), 2022, 112-130

North DC. Institutions, Institutional Change and Economic Performance. Cambridge University Press; 1990, 65-80

Jensen, M. C., & Meckling, W. H. Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure. Journal of Financial Economics, 3(4), 1976, 305-360.

Khashchyan, A., & Hovhannisyan, T. "The Impact of E-Procurement on Public Procurement Efficiency in Armenia." Journal of Public Administration Research and Theory, 32(1), 2022, 45-67.

OECD/Asian Development Bank. "Chapter 6 - The role of civil society in curbing corruption in public procurement", in Fighting Bribery in Public Procurement in Asia and the Pacific, OECD Publishing, Paris, 2008

Lambsdorff, J. G. The Institutional Economics of Corruption and Reform. Cambridge University Press. https://doi.org/10.1017/CBO9780511492617, 2007

Kasekamp, R. "The Impact of E-Procurement on Competitive Bidding in Estonia." Journal of Public Administration Research and Theory, 2020

Kattel, R., & Mergel, I., Digital Government in Estonia: Building an E-Government Infrastructure for the 21st Century. In Digital Government: Technology and Public Sector Management, 2016, 261-278

Korea's Public Procurement Service. Annual Report on Public Procurement and Efficiency Measures. Public Procurement Service, Republic of Korea. https://u.to/vd4OIQ. 2022

Transparency International. Corruption Perceptions Index. https://www.transparency.org/en/cpi/2024/. 2024

Estonian Ministry of Finance. Public Procurement in Estonia: Annual Report 2018, https://riigi-hanked.riik.ee/rhr-web/#/

South Korea's Public Procurement Service. Annual Report on Public Procurement 2020 from the Public Procurement Service. https://u.to/_e4vIg

Ministry of Finance of the Republic of Armenia, Public Procurement Report 2019 https://u.to/7u4vIg

Journal of Yerevan University. Economy
2025, Vol. 16, No. 1(45), June, 70-81
https://doi.org/10.46991/BYSU.G/2025.16.1.070

PROBLEMS OF COOPERATION BETWEEN SCIENTIFIC ORGANIZATIONS AND HIGHER EDUCATIONAL INSTITUTIONS IN THE REPUBLIC OF ARMENIA

VARDAN BOSTANDJYAN, ARMINE ZAKHARYAN*
Yerevan State University

Abstract: The article is devoted to the study of the methods and mechanisms for enhancing the cooperation between scientific organizations and higher education institutions in the Republic of Armenia, the factors, that determine their effective use, as well as the possibilities for improving the scientific-educational system of the Republic of Armenia in the context of stimulating innovative development of the economy. It is obvious, that in the current geopolitical and economic conditions, there is an urgent need for comprehensive assistance in enhancing cooperation between scientific organizations and higher education institutions, both with each other and with private sector companies. The increase in the efficiency of the scientific-educational system of the Republic of Armenia is currently largely due to the increase in the number of active scientists, the formation of a modern image of lecturers, targeted cooperation between scientists and lecturers, as well as the intensification of scientific-educational activities of students. In order to establish the desired relationship between an active scientist and an effective lecturer, it is necessary to improve the assessment of the scientist in the educational sphere, and the lecturer in the scientific sphere. It is also necessary to increase the level of media literacy of scientists and lecturers, which is due to the modern rapid digitalization of science and education. Particular attention should be paid to and study the experience of increasing the efficiency of scientific-educational activities of famous scientists and teachers. School, university, postgraduate and doctoral studies can also contribute to the formation of an effective scientist-lecturer, where lecturer and students of different educational levels can acquire new intellectual abilities and the necessary psychological skills of perception. In the article, using the example of the Republic of Armenia, the issues of innovative development of the scientific-educational system are discussed, some mechanisms for activating cooperation between scientific organizations and higher education institutions are developed.

Key words: *scientific-educational system, innovative education, research activities, public policy, financing, stimulation, development, efficiency.*

* **Vardan Bostandjyan** – Doctor in Economics, Professor at the Chair of Financial Accounting of YSU Faculty of Economics and Management
E-mail: vardan.bostanjyan@ysu.am ORCID: https://orcid.org/0000-0002-1534-8080
Armine Zakharyan – PhD in Economics, Lecturer at the Chair of Economics and Management of YSU Faculty of Economics and Management, International Scientific and Educational Center of the NAS of the RA
E-mail: azakharian@inbox.ru ORCID: https://orcid.org/0000-0001-6619-0597

Received: 08.04.2025
Revised: 24.04.2025
Accepted: 06.06.2025

Introduction

The innovative development of the economy of developed countries and the increase of the efficiency of the scientific-educational system are in close interaction and are mutually reinforcing processes. In the current conditions, there is an urgent need in the Republic of Armenia to comprehensively promote the activation of cooperation between scientific organizations and higher education institutions, both with each other and with private sector companies. The latter is conditioned by the importance of the innovative development of the republic's economy and the imperative of increasing the level of interest of scientific and educational personnel. The organization of innovative education can also greatly contribute to the innovative development of the economy and the increase in the efficiency of the scientific-educational system, as it is an important factor in the development of society and a consequence of pedagogical innovative activity, which ensures the achievement of new educational results, including its economic, managerial, social, environmental, health and other aspects.

The theoretical and methodological foundations of cooperation between scientific organizations and higher education institutions

In order to intensify cooperation between scientific organizations and universities, as well as to solve the problem of increasing the volume of internal expenditure on research and development and increasing the share of extra-budgetary funds in their structure, it is necessary to study the experience of technologically developed countries, which allows us to identify a wide and diverse range of instruments that have a stimulating effect on the activity of economic entities in the scientific and technical sphere. The experience of the USA, the Netherlands, South Korea and China can be useful for creating a set of tools that stimulate the growth of domestic expenditure on research and development and have a positive effect on the development of intellectual capital and the efficiency of its use (**Ushakova S.E.,** 2016, pp. 7-29).

Measures to stimulate the growth of domestic expenditure on research and development in the USA:

1. Direct government funding of fundamental research and development.
2. State support for applied research and development carried out by enterprises through:
   - tax credit for scientific research and development (increase in the amount of tax credit provided by 20%, simplification of the tax credit calculation mechanism, provision of tax credit on an ongoing basis),
   - government procurement mechanism.
3. Improving the legal and regulatory system, governing of intellectual property rights:
   - granting temporary exclusive rights to use an innovation by the developer,
   - improving the quality of the patent system (accelerating the process of obtaining a patent for an invention).
4. Developing small entrepreneurship:
   - providing government loans to small businesses,
   - reducing the tax burden on small businesses,

- introducing a zero tax rate on profits from the sale of shares of small businesses that are sold no less than 5 years after their acquisition (the limitation for receiving such a benefit is the amount of the benefit of more than 10 million US dollars or a tenfold increase in the market value of the share).

5. Ensuring the efficient functioning of the capital market:

- allowing pension funds to invest 5% of their assets in high-risk enterprises,
- a tax break on profits from the sale of shares in high-tech companies.

6. Developing regional innovation clusters, that unite industrial enterprises, universities and regulatory government bodies on a partnership basis:

- a program of lending to enterprises by national and regional banks under government guarantees.

7. Ensuring the expansion of export opportunities for American high-tech enterprises.

8. Public-private partnerships, involving universities, research organizations and private industrial companies in collaboration.

Measures to stimulate the growth of domestic expenditure on research and development in the Netherlands:

1. A public-private partnership, based on the "leading sector approach" and consisting of concentrating major investments in selected leading sectors of the economy in order to maximize their return. One of the main principles of the approach implementation is the principle of joint coordination of research and development by the state and business:

- coordination of activities and encouragement of collaboration between the scientific, educational and production sectors; creation of expert councils from representatives of leading sectors of the economy, scientific organizations and government agencies for joint decision-making on industrial policy and the main areas of scientific research;
- reduction of the administrative burden on selected leading sectors of the economy,
- state aid to enterprises of leading sectors in foreign policy for the promotion of Dutch brands in foreign markets (involvement of the Ministry of Foreign Affairs of the Netherlands),
- accumulation of part of the income from gas sales and formation from them of "grants for the development of knowledge infrastructure", "fund for structural improvement of the economy" and creation of so-called virtual research institutes.

2. Creation of industry consortia of knowledge and innovation in leading sectors of the economy to implement the principle of co-financing research and development.

3. Tax incentives for enterprises, carrying out scientific research and development:

- tax credit for expenses on personnel engaged in research and development,
- provision of a tax incentive for investments in equipment used for research and development,
- preferential taxation of income received from the use of intangible assets developed by enterprises and patented.

4. A mechanism for loans guaranteed by the state for research and development by enterprises in the business sector, the terms of which vary for large and small enterprises, as well as depending on the stage of the innovation cycle (seed research, the stage of

venture financing for research, the late stage of venture financing - launching products into production based on research results):

- an innovation loan for small enterprises, issued from an innovation fund, created to support innovative small enterprises,
- allocation of "seed capital" for new small businesses,
- allocation of funds from the state venture fund (fund of funds) for the development of small businesses;
- provision of bank loans to small businesses with state guarantees,
- provision of state guarantees of 50% of the funds allocated to small businesses by venture funds,
- provision of state guarantees of 50% of investments in small businesses to owners of invested capital,
- creation of the Dutch Investment Agency, combining funds from pension funds, insurance companies, banks,
- creation of a public-private partnership represented by banks, the Ministry of Economy, the Ministry of Social Development and Employment of the Netherlands to provide small businesses with providing consulting services to small innovative companies.

5. A mechanism for public procurement, that stimulates demand for the products of small innovative enterprises.

Measures to stimulate the growth of domestic expenditure on research and development in South Korea:

1. Tax incentives for small innovative enterprises:

- tax credit for research and development,
- benefits for the payment of taxes on the salaries of employees of small innovative enterprises.

2. Use of the mechanism of co-financing of research and development.
3. Financing of startup activities through funds.
4. Public procurement mechanism.
5. Public-private partnership.
6. Development of technological clusters.
7. Accumulation and patenting of the results of intellectual activity within the country with the aim of using them in national production to extract maximum profit from the sale of products, manufactured on their basis.

Measures to stimulate the growth of domestic expenditure on research and development in China:

1. Direct government investments in the implementation of the medium-term and long-term strategic plan for the development of science and technology.
2. Creation of high-tech development zones and incubators with preferential tax, customs, currency, visa and labor regimes.
3. Improvement of the venture financing system through the implementation of the principle of co-financing of the state and the business sector.
4. Improvement of the intellectual property protection system.

5. Creation of a low-budget form of patenting utility models and industrial design (low-value patents), allowing national innovators to obtain patents in a short time at a low cost.

6. Introduction of technological standards in the production sphere, that improve the quality of high-tech goods and stimulate investment in their improvement.

7. Implementation of a mechanism for public procurement of high-tech goods.

In order to achieve the desired results in the activation of cooperation between scientific organizations and higher education institutions in the Republic of Armenia, it is certainly necessary to modernize the activities of scientific organizations operating within the National Academy of Sciences of the Republic of Armenia and increase their efficiency (**Approval of the Development Strategy of the National Academy of Sciences of the Republic of Armenia for 2022-2026,** 2022).

The implementation of this goal requires new steps and approaches, of which, in our opinion, it is necessary to emphasize:

- limiting the terms of office of the heads of scientific topics of the scientific organizations until their expiration, appointing to these positions those employees of the organization, who will be in-depth in the studies of the topics subject to implementation, will have at least 5 years of work experience in the scientific organization and an academic degree. We believe that such an approach will contribute to increasing the efficiency of the work of the heads and performers of scientific topics, will stimulate professional competition between them, will develop the professional abilities of the performers of topics, will stimulate the aspirations to become leading researchers in the future, as well as will increase the desire to have an academic degree and continue working in a given organization.
- inviting leading scientists and specialists from scientific organizations of the NAS RA and well-known advanced scientists and specialists in these fields to lecture on individual professional subjects at higher educational institutions, as well as organizing remote cooperation. This approach will contribute to the integration of science and education, increasing the efficiency of the educational process and increasing students' interest in scientific research.
- ensuring the participation of scientists from the NAS RA and related professional organizations in the working key discussions of ministries and departments, publishing co-authored scientific studies by civil servants and scientists, as well as developing mechanisms to promote the activation of cooperation between civil servants and scientists. Such an approach, in our opinion, will contribute to raising the level of awareness of scientists about the measures implemented by the Government aimed at the development of the republic's economy and the processes conditioned by them, to the submission of proposals to the RA Government by scientific organizations of the NAS RA, universities and private sector specialists that imply economic progress, as well as to the activation of cooperation between civil servants and scientists.
- Modernization of the activities of the National Academy of Sciences of the Republic of Armenia, the presentation by the Government of the requirement to implement developments that imply socio-economic progress, ensuring the adequacy of funding for such developments, establishing cooperative ties with well-known foreign scientific research centers, raising the scientific level of domestic specialists, etc. Such an approach will contribute to improving the effectiveness of developments carried out by scientists,

creating the necessary conditions for their practical implementation, as well as ensuring a higher level of solving social problems for scientists.

Increasing the effectiveness of the scientific-educational system of the Republic of Armenia today is largely conditioned by the generation of the number of active scientists, the formation of a modern image of lecturers, purposeful cooperation between scientists and lecturers, as well as the activation of scientific-educational activities of students.

Knowledgeable and talented scientists stand out with their worldview and creative initiative; they are courageous and purposeful, they are able to see the future. Such scientists are people with great work abilities, strong will and huge creative potential. They are optimistic, believe in the power of knowledge, are able to dream and act boldly. Such people, of course, are not many, but the army of knowledgeable and talented people can be replenished with quite a few people ready for scientific and research activities. Therefore, first of all, they need to be instilled with a selfless love for science and their chosen profession. Here, it is especially important to emphasize their ability to overcome the difficulties and obstacles encountered on the path of a scientist, as well as their confidence in the importance of the chosen study. All this leads to a strong sense of purpose, which allows the researcher not only to see the long-term perspective of the work, but also to clearly plan its individual stages. Important qualities of a scientist should be his honesty, rigor and objectivity. He must be modest and self-critical, as well as respectful of the opinions of others. The success of scientific activity largely depends on the general disposition of the scientist. Optimism inspires and stimulates the will, sharpens perception and thought. A scientist must look ahead, love life, have systematic thinking and be optimistic. And finally, one of the main qualities of a true scientist is consistent work. When conducting any scientific experiment, one must have patience and endurance. Experiments sometimes require hard work; there are failures, overcoming which implies the exclusion of despair and, ultimately, the achievement of the desired results.

In the professional literature, the following concepts are distinguished in terms of the mental and physical qualities characteristic of a scientist (**Selye H.,** 1987, p. 175):

- enthusiasm and perseverance,
- originality - independence of thinking, imagination, intuition, talent,
- intelligence - logic, memory, experience, ability to concentrate, abstract thinking,
- ethics and honesty,
- harmony with nature - observation, physical and technical skills, etc.,
- ability to communicate with people - ability to form groups, explain to others, convince them if necessary, as well as listen to their arguments.

It is obvious that with the above qualities, in order to carry out effective activities, a scientist must study and analyze everything new, be in constant contact with foreign scientists, publish scientific works, give interviews, create teams of like-minded people, etc.

The image of a lecturer is extremely important in the modernization of the scientific-educational system. It should have a special meaning, since the influence of a lecturer on a student is great. The main characteristics, attributed to the image of a lecturer in professional literature are (**Image of a university lecturer: structure, technologies, stages of formation**):

1. First impression. A lecturer should leave a unique impression, which is formed by clothing, voice, grooming and neatness, strength of handshake, eye contact and posture.

A positive first impression makes it easier to communicate with people, making it warmer and more comfortable. On the other hand, a negative first impression can end a relationship before it even begins. Research conducted in academic studies has revealed a connection between the components of a first impression and subsequent relationships. Stylish clothing and a neat appearance are important factors in making a good first impression. The right clothes create the image of a successful professional, evoking a positive response.

2. Depth of knowledge. Both students and colleagues understand that the lecturer is proficient in his profession, can freely discuss various professional issues and has the necessary expert knowledge. It is assumed that the work of a lecturer should be a highly paid intellectual job, who not only transfers his knowledge to students, but also engages in self-improvement and continuous updating and enrichment of his knowledge.

3. Comprehensiveness of knowledge. In addition to knowledge in his field, a successful lecturer should have broad understanding and knowledge of related fields and other issues of public importance. He should have expert skills and freely discuss phenomena, that are somewhat far from the scope of his professional activities.

4. Flexibility. The lecturer should be endowed with a certain flexibility and, if necessary, be able to demonstrate such behavior, so as not to jeopardize relationships with others. Such a lecturer listens to the interlocutor and is able to adapt to the rhythm of communication, without causing the other person discomfort in communication.

5. Enthusiasm. A lecturer's enthusiasm should be understood as his ability to accept new information and willingly take on any task. In other words, in terms of the observed characteristic, it can be understood that the lecturer should freely give the most complete answer possible to the most diverse questions from the students, thereby not jeopardizing his own reputation.

6. Sincerity. A true lecturer should be sincere, not present himself as such. A person, proclaiming scientific values, must be their true bearer and adhere to the rules of academic ethics.

In order to establish the desired relationship between an active scientist and an effective lecturer, it is necessary to raise the assessment of the scientist in the educational sphere, and the lecturer in the scientific sphere. It is also necessary to raise the level of media literacy of scientists and lecturers, which is conditioned by the current general digitalization of the spheres of science and education (**Bostanjyan V., Zakharyan A.,** 2023, pp. 248-251). Special attention should be paid to and studied the experience of famous scientists and teachers in increasing the effectiveness of scientific and educational activities. The formation of an effective scientist-lecturer can also contribute to school, university, postgraduate and doctoral studies, where lecturers and students at different educational levels can acquire new intellectual abilities and necessary psychological skills of understanding.

It should be noted, that increasing the effectiveness of scientific-educational activities of scientists, lecturers and students is a continuous and ongoing process, the future of both science and education, as well as the future of the implementation of the results and developments resulting from them, depends on the degree of its effectiveness.

In order to achieve the desired future in the field of scientific-educational activities in the Republic of Armenia, it is necessary to actively involve students in both scientific research projects and scientific studies, carried out by professional groups. Moreover, as

a result, students must participate in co-authored publications, and master's students must have at least two published scientific articles.

The possible rapid formation of a scientific-educational system in the Republic of Armenia, the strengthening of the scientist-lecturer relationship will not only contribute to the involvement of young students in the scientific research field, but will also create the necessary conditions for them to engage in science and get acquainted with the nuances and peculiarities of the activities carried out in the field. It is obvious that more serious volumes of state and private funding will be required to motivate scientists, lecturers and young specialists. In this regard, we should also note that although the volume of expenditures allocated to scientific research and development in the former CIS countries has recorded some growth, it has not yet expanded in relation to GDP (see Table 1).

Table 1

The volume of expenditures on scientific research and development in the CIS member states in relation to GDP in 2017-2022 (%)

N	CIS country	%, to GDP					
		2017	2018	2019	2020	2021	2022
1.	Armenia	0.2	0.2	0.2	0.2	0.2	0.2
2.	Belarus	0.6	0.6	0.6	0.5	0.5	0.5
3.	Azerbaijan	0.2	0.2	0.2	0.2	0.2	0.1
4.	Kazakhstan	0.1	0.1	0.1	0.1	0.1	0.1
5.	Kyrgyzstan	0.1	0.1	0.1	0.1	0.1	0.1
6.	Moldova	0.2	0.2	0.2	0.2	0.2	0.2
7.	Russia	1.1	1.0	1.0	1.1	1.0	0.9
8.	Ukraine	0.4	0.5	0.4	0.4	0.4	0.3

Source: ***How much does your country invest in R&D? - UNESCO Institute for Statistics (UIS), 2025,*** *web page visited on 01.05.2025.*

The CIS member states also significantly lag behind economically developed countries in terms of spending on scientific research and experimental and design work. Russia's indicator, which is the highest among the CIS member states, is about 12 times lower than the indicator of the world leader in the list of leaders. Armenia's indicator is about 5 times lower than Russia's indicator and about 47 times lower than the indicator of the world leader, the United States. According to the OECD's open database "Key Indicators of Science and Technology", the world leaders in terms of total domestic spending on R&D are the United States, Germany, China, Japan, and South Korea.

Of course, doctoral education also contributes to raising the scientific level of a scientist, and no matter how much some forces strive to abandon *this level of postgraduate education,* its importance will never decrease, since in Armenia, as in the entire post-Soviet space, this scientific degree is not only well recognized, but also the recognition of many as such is excluded.

At the same time, it is necessary to note, that not all doctors become inventors, since not all directions of the scientific sphere of the republic have the necessary conditions for full-fledged engagement in inventive activity. In our opinion, this circumstance is also the reason for the need to organize inventive education in the republic**—the third**

level of postgraduate education. Especially in the current challenges of the Republic of Armenia, the need to establish this third level of postgraduate education and the exclusion of discussions on abandoning the second level are emphasized. In modern conditions, it is certainly possible to establish additional conditions for the defense of doctoral dissertations, excluding, of course, the requirement to emphasize the presence of publications in periodicals with certain indexes in international scientific information databases. It is obvious, that the effectiveness of a scientist's work is objectively measured by the results of implementing the applied recommendations presented by him and the degree of their impact on social welfare.

There are serious prerequisites for the formation of a scientific-educational system in the Republic of Armenia, especially in the issue of human capital. In particular, many highly rated, professional lecturers work in the republic's primary vocational (craft), secondary vocational and higher educational institutions (see Table 2).

Table 2

Number of lecturers in primary vocational (craft), secondary vocational and higher education institutions in 2019-2024

Name	2019/2020	2020/2021	2021/2022	2022/2023	2023/2024
Pre-vocational (craft) educational institutions	939	963	1 035	1 189	996
Secondary vocational educational institutions	3 015	3 081	3 163	3 179	3 147
Higher educational institutions	6 747	6 538	6 484	6 505	6 450
Total	**10 701**	**10 582**	**10 682**	**10 873**	**10 593**

Source: *Education sector statistics, Statistical Yearbook of Armenia, 2024, pp. 169-199., web page visited on 21.03.2025.*

The analysis of the presented data shows, that there has been a change in the number of lecturers during different academic years. In particular, the number of lecturers in secondary vocational educational institutions increased by 132, in primary vocational by 57, and in higher educational institutions the number of lecturers decreased by 297. In general, the number of lecturers in educational institutions of the republic decreased by 108. The decrease in the number of lecturers, is certainly, due to both the reduction of the number of students and the low level of lecturers' salaries.

A certain number of scientific organizations currently operate in the Republic of Armenia. The trend that an increase in the number of scientific organizations has been registered in the republic in recent years should be considered positive. An increase has also been registered in terms of financing of such organizations (see Table 3).

Table 3

Indicators, characterizing scientific organizations operating in the Republic of Armenia in 2019-2023

Name	2019	2020	2021	2022	2023
Scientific organizations	63	65	94	91	89
Number of employees of scientific organizations (people)	4 539	4 499	4 889	4 864	4 853
Funding of research and development (million drams)	12 144.6	13 717.3	14 862.9	17 814.4	16 888.2

Source: ***(Science sector statistics, Statistical Yearbook of Armenia,*** *2024, pp. 200-208****),*** *web page visited on 21.03.2025.*

The analysis of the presented data shows, that in 2023, compared to 2019, the number of scientific organizations increased by 26, the number of employees in them by 314, and the expenses on research and development by 4 743.6 million drams.

According to the relevant decision of the Government of the Republic of Armenia, the minimum requirements for certification of scientific personnel are established mainly for the numbering of scientific publications and monographs ("**On the approval of the procedure for attestation of scientific personnel, scientific and engineering-technical positions in state scientific organizations and the minimum criteria for their evaluation**" **Resolution of the Government of the Republic of Armenia,** 2023). Scientific publications must be included in journals with appropriate indexes in the international scientific information databases Science Citation Index Expanded, Social Sciences Citation Index (SSCI), Emerging Sources Citation Index (ESCI), Arts&Humanities Citation Index (AHCI) կամ Book Citation Index, SCImago Journal & Country Rank (Q2, Q4), SCImago Journal Rank Indicator, and monographs (collective monograph) or scientific works must have at least five printed volumes and be published in publishing houses, included in the list of publishers of the Book Citation Index of the Web of Science™ scientific information platform. In our opinion, such a requirement may cause certain inconveniences in the Republic of Armenia, due to the fact that the publishing houses specified in the Order are registered in the Republic, the expenses stipulated by such publications are incurred by domestic scientists with extremely small incomes, and other obstacles. In the procedure for attesting scientific personnel of the Republic of Armenia, adopted by the Government's decision, the emphasis on the presence of publications in periodicals with appropriate indexes in international scientific information databases is, in fact, an important characteristic for scientists, but this requirement, in our opinion, can and should follow the criterion of the practical implementation of the proposals of scientific personnel, since the effectiveness of the work of a scientist is objectively measured, is being measured and will be measured in the future by the results of the implementation of the practical proposals, presented by him. The attestation process, of course, may be preceded by training, exams, tests and other approaches to revealing professional skills.

The issue of professional advancement of scientific personnel is of key importance in the establishment of the scientific-educational system. In fact, in the Republic of Armenia, there is no effective mechanism, that would provide a certain opportunity to effectively organize the professional advancement (career) of a scientist. Researchers, as a rule, on their own initiative and through personal connections, try to so-called "move forward", directly or indirectly pushing the requirements of scientific and practical efficiency into the background. As a result, we have what we have. Meanwhile, advanced experience is known in world practice, which can be localized in any country, taking into account the specifics and characteristics of the given country. In particular, like many countries of the world, Armenia can be guided by the principles of the Japanese "career growth" system, which can lead to positive results, when state policy is also implemented in this direction, with the necessary developments and assessment of the degree of importance of the researcher's activities. It is obvious, that the necessary developments and assessments should be based on **education and work:**

1. in undergraduate or graduate programs at universities,
2. in postgraduate or doctoral programs at scientific organizations,
3. in educational institutions,
4. in the executive body,
5. in the legislative body,
6. in the international arena and other areas.

The period of transition from the presented education and working levels to each of them can practically last 5-7 years, in which case a minimum of 35 years of work experience can be obtained, the duration of which, depending on the duration of the specified works, the consistency of the scientific worker, the results obtained by him and other factors, can be reduced or extended. During the transition from the presented working levels to each of them, it is naturally desirable, that the salary of the scientific worker, as well as his scientific level, increase. As a result, a scientific potential that significantly contributes to the development of the state will be formed.

Conclusion

In the establishment of the scientific-educational system in the Republic of Armenia and the strengthening of the scientist-lecturer relationship, the issue of competitive selection of scientific topics by the relevant structure of the sector is of fundamental importance. In particular, when selecting topics related to areas of strategic importance for the state, the involvement of representatives of the Public Council, the National Academy of Sciences of the Republic of Armenia, the Government of the Republic of Armenia, as well as highly rated experts from various professional fields in this process can provide positive results. It is obvious, that when discussing the feasibility of implementing the presented scientific topics, keeping in mind the opinions of the Public Council, the National Academy of Sciences of the Republic of Armenia, the Government of the Republic of Armenia, as well as the experts' conclusion, it will be possible to make an objective and transparent selection of topics. As a result, the effectiveness of their activities in various professional fields will increase, and the desire of scientists to carry out scientific research work will increase. Here, it is also necessary to emphasize the organization of "master classes" for young researchers, involving specialists with many years of effective scientific research experience. Such an approach will not only contribute to

increasing the effectiveness of scientific research work, but will also lead to improving the quality of scientific-pedagogical activities. Let us also note, that the final results of research conducted within the framework of scientific topics should also be presented to the relevant bodies of the executive power for their practical application and, why not, for the formation of state orders.

In summary, it is necessary to note, that the implementation of the practical recommendations for the integration of higher educational institutions and scientific organizations, as well as for increasing the efficiency of scientific-pedagogical and research activities presented in the article, can contribute to the innovative development of the economy, the creation of new jobs, the deepening of internal and external economic ties, and the balanced and sustainable development of the economy of the Republic of Armenia.

References

Approval of the Development Strategy of the National Academy of Sciences of the Republic of Armenia for 2022-2026 (Decision 14/1805-27-14 October 2022), https://www.sci.am/documents.php?y=2022&dcid=3&langid=1#top.

Bostanjyan, V., Zakharyan, A. (2023), Problems of digital transformation of the education sphere in the Republic of Armenia, Greater Eurasia: Development, security, cooperation: materials of the Fifth international scientific and practical conference "Greater Eurasia: national and civilizational aspects of development and cooperation", Yearbook. Issue. 6. Part 2 / Institute of Scientific Information on Social Sciences of the Russian Academy of Sciences. Dep. of scientific cooperation; Ed. V.I. Gerasimov. - Moscow, pp. 248-251, https://inion.ru/site/assets/files/7615/2023_e_bol_shaia_evraziia_6_2.pdf

Education sector statistics, https://escs.am/am/static/statistist, Statistical Yearbook of Armenia - 2024, pp. 169-199, https://armstat.am/file/doc/99552298.pdf

Selye, H. (1987), From Dream to Discovery: How to Become a Scientist, Moscow, Progress, p. 175, https://www.phantastike.com/way/ot_mechti_k_otkritiyu/html/

How much does your country invest in R&D? - UNESCO Institute for Statistics (UIS), 2025, http://uis.unesco.org/apps/visualisations/research-and-development-spending/.

Image of a university lecturer: structure, technologies, stages of formation, https://lala.lanbook.com/imidzh-prepodavatelya-vuza-struktura-tekhnologii-ehtapy-formirovaniya.

"On the approval of the procedure for attestation of scientific personnel, scientific and engineering-technical positions in state scientific organizations and the minimum criteria for their evaluation" Resolution of the Government of the Republic of Armenia N 2298-N, 21.12.2023, https://www.arlis.am/DocumentView.aspx?docid=187688

Science sector statistics, https://escs.am/am/static/statistist, Statistical Yearbook of Armenia - 2024, pp. 200-208, https://armstat.am/file/doc/99552303.pdf

Ushakova, S.E. Stimulating the development of the sphere of using national intellectual capital: a review of foreign experience, Scientific journal "Science Management and Scientometrics", N4, 2016, pp. 7-29, https://cyberleninka.ru/article/n/stimulirovanie-razvitiya-sfery-ispolzovaniya-natsionalnogo-intellektualnogo-kapitala-obzor-zarubezhnogo-opyta

Journal of Yerevan University. Economy
2025, Vol. 16, No. 1(45), June, 82-90
https://doi.org/10.46991/BYSU.G/2025.16.1.082

BEHAVIORAL FINANCE IN THE FIELD OF COMPENSATION

HASMIK DOVLATYAN, LILIT ASRYAN, GNEL SAHAKYAN*
Yerevan State University

Abstract: Behavioral finance in the field of compensation studies how psychological, social, and cognitive factors influence decision-making in aspects such as salary payment, compensation, and other elements of employment relationships. This field combines economic theory with psychological and sociological concepts to understand how people perceive and respond to different payment and reward systems. Within the scope of this article, a survey was conducted among 100 employed individuals over the age of 18, the analysis of which will highlight the key differences between traditional economics and behavioral economics more clearly.

Key words: *behavioral finance, remuneration, salary, motivation, job satisfaction, pay fairness, framing effect, anchoring effect.*

Introduction

Compensation plays a central role in shaping employee motivation, performance, and satisfaction within the workplace. Traditionally, compensation systems have been analyzed through the lens of classical economic and organizational theories, which assume rational behavior and objective decision-making by both employers and employees. However, real-world decision-making often deviates from these assumptions due to the influence of cognitive biases, emotional factors, and psychological heuristics.

Behavioral finance, an interdisciplinary field that integrates insights from psychology and economics, provides a more realistic framework for understanding how individuals perceive, evaluate, and respond to compensation. Concepts such as loss aversion, anchoring, framing effects, and fairness perceptions offer valuable tools for analyzing how employees interpret salary levels, reward structures, and compensation-related policies.

The study of behavioral finance and the implementation of its findings have a very important social aspect. Traditional finance views the individual as a rational being, whereas behavioral finance sees them as a 'normal' being (Bogatyriev, 2019). In other

* **Hasmik Dovlatyan** – PhD in Economics, Assistant at the Chair of Financial Accounting of YSU Faculty of Economics and Management
E-mail: hasmik_dovlatyan@ysu.am ORCID: https://orcid.org/0009-0008-3586-4761
Lilit Asryan – Lecturer at the Chair of Financial Accounting of YSU Faculty of Economics and Management
E-mail: lilit.asryan@ysu.am ORCID: https://orcid.org/0009-0001-3107-5967
Gnel Sahakyan – PhD in Economics, Head of Finance Bachelor's Degree Program, Acting Head of Chair of Financial Accounting of YSU Faculty of Economics and Management
E-mail: gnelsahakyan@ysu.am ORCID: https://orcid.org/0009-0004-8408-7429

Received: 27.04.2025
Revised: 16.05.2025
Accepted: 06.06.2025

words, our decisions are not always the best among the available options; they are influenced by our preferences, biases, and degree of risk aversion. Through the application of behavioral finance, the behavioral characteristics of individuals making managerial decisions are revealed.

This paper seeks to explore the potential relevance of behavioral finance principles within the context of employee compensation. Drawing on both theoretical sources and survey-based data, the study examines selected aspects of how compensation is perceived and the various factors that may influence this perception. The aim is to contribute to a more comprehensive understanding of how psychological and behavioral tendencies can shape attitudes toward remuneration in the workplace.

Research methodology

This study employs a mixed-method approach, combining a literature review with an online survey. A systematic literature review was conducted to identify key behavioral finance theories relevant to compensation. To complement the theoretical framework with empirical data, an online survey was conducted using a random sampling method. Participants included 100 individuals aged 18 and older who are currently employed. Participation was voluntary and anonymous. A correlation matrix was constructed based on the survey data to analyze the relationships between respondents' salary levels, on the one hand, and factors such as age, work experience, educational attainment, and other variables, on the other.

Results and findings

In many manufacturing settings, the most productive employees often outperform their least productive counterparts by a factor of two to three. In certain occupational contexts, the disparity in output can be even more pronounced. While various elements contribute to differences in individual performance, motivation emerges as a primary determinant. However, it is important to acknowledge that motivation is not the sole factor influencing productivity. An individual's performance is shaped by a combination of motivational, cognitive, and environmental variables, including inherent ability, workplace conditions, and broader situational factors.

Motivated behavior is generally characterized as being goal-directed. In everyday discourse, motivation is often explained by associating a given action with outcomes perceived as desirable within a cultural context. For instance, a typical commonsense explanation might state: "Person X is working hard in order to earn more money." While such explanations may suffice in informal settings, they fall short as scientific accounts of behavior. They do not elucidate why monetary gain is valued by the individual, why that particular path (Y) is chosen over alternative behaviors (Z), or why monetary rewards are prioritized over other potential goals.

A scientifically robust explanation must therefore address not only the specific behavior exhibited, but also the underlying reasons for the selection of a particular goal, the preference for that goal over others, and the strategy employed to pursue it.

The distinction between conceptualizing humans as rational, goal-oriented agents versus beings driven by unconscious impulses is of fundamental importance in understanding motivation. Each perspective carries significant implications for organizational

design. If one adopts a view of individuals as governed by unconscious drives, then organizational structures would logically emphasize external controls aimed at monitoring and regulating behavior. Conversely, if individuals are seen as rational actors capable of self-direction, motivation can be shaped through the strategic use of goal-setting, and organizations might rely more heavily on mechanisms that support intrinsic motivation and self-regulation.

The distinction between man as a rational, goal-oriented being and man as a being governed by unconscious drives is a very important one. If we accept a view of man as a rational being, then the very design of organizations needs to be different from what it would be if we accept the instinctual model of man. The instinctual model calls for an organization dominated by controls by which the organization tries to monitor and direct the behavior of people. The rational model suggests that motivation can be influenced by the use of goals and that self-control is possible. These models also suggest very different ways of approaching the study of motivation. One argues for trying to understand how people's goals develop and how people learn to obtain their goals. The other suggests trying to understand instincts and the analysis of individuals' fantasies, thoughts, and actions in order to understand what unconscious motives may be in operation (Lawler, 1994, Byrne & Brooks, 2008, Obolikshto, 2014).

Although traditional motivation theories, such as Maslow's hierarchy of needs (1943) and Herzberg's two-factor theory (1959), provide a foundational understanding of employee behavior, they often rely on the assumption of rational decision-making. However, in practice, decisions related to salary and compensation—on the part of both employees and employers—are frequently shaped by cognitive biases, emotional reactions, and imperfect information. This discrepancy between theoretical assumptions and real-world behavior highlights the relevance of behavioral finance (Leković, 2020). By integrating its principles, we can gain a more nuanced understanding of how individuals perceive and react to compensation structures, bridging the gap between motivation theory and the behavioral aspects of remuneration.

In the context of salary structures and compensation decisions, several key concepts from behavioral finance provide important insights into employee behavior and perception. These mechanisms challenge the assumptions of classical economic rationality by illustrating how cognitive biases and psychological factors shape attitudes toward remuneration (Yi, 2024, Xu, 2023, Kahneman & Tversky, 1979).

- ✓ Anchoring Effect: Individuals often rely disproportionately on the initial salary figure presented to them, which then serves as a psychological anchor for evaluating subsequent offers. This effect persists even when the anchor is objectively misaligned with market standards or the individual's true economic value. For instance, an initial salary offer may distort perceptions of fairness or adequacy in later negotiations, influencing long-term compensation expectations.
- ✓ Framing Effect: The manner in which salary information is presented significantly influences how it is interpreted by employees. Identical remuneration amounts can elicit different psychological responses depending on their framing. For example, an annual salary stated as "4.5 million drams per year" may be perceived differently from a monthly breakdown of "375,000 drams per month," despite being numerically equivalent. This underscores the importance of presentation format in shaping salary satisfaction.

✓ Loss Aversion: Rooted in prospect theory, loss aversion refers to the tendency of individuals to experience the pain of losses more acutely than the pleasure of equivalent gains. Applied to salary dynamics, employees often react more negatively to a pay cut than positively to a similar increase, even when real wages are adjusted for inflation. This asymmetry can create lasting dissatisfaction and affect employee morale.

✓ Hedonic Adaptation: Over time, individuals tend to psychologically adjust to changes in income levels, a phenomenon known as hedonic adaptation. As a result, the initial satisfaction derived from a salary increase diminishes, and employees may revert to their baseline level of contentment. This can lead to reduced appreciation for continued high compensation and necessitates periodic recognition or goal-setting to sustain motivation.

✓ Affective Forecasting Errors: Employees frequently overestimate the long-term emotional impact of salary increases. This misjudgment, known as ineffective happiness forecasting, may lead to inflated expectations regarding job satisfaction and overall well-being following a raise. When these expectations are not met, it can contribute to disengagement or disappointment despite objectively favorable pay conditions.

✓ Perceived Pay Fairness: Beyond absolute compensation, employees are highly sensitive to relative pay and perceived equity. Even when salaries are competitive, a sense of unfairness may arise if workers believe they are compensated less than colleagues performing comparable roles. This perception of inequity can negatively influence motivation, commitment, and overall job satisfaction.

The same bonus system can be perceived differently by different employees. For example, one may be highly motivated to earn bonuses, while for another, it may not seem justified — in other words, it may not be reasonable for them to put in extra effort to receive the offered bonus.

Depending on the sector, employees should be compensated and therefore motivated in different ways (Shivhare, n.d.).

- *Time-Based Compensation:* This method motivates employees by providing stability and encouraging them to fulfill their duties during working hours. Employees who receive an hourly or monthly salary usually focus on the quality performance of their duties and do not need to exert additional effort. This method is suitable for jobs where responsibilities are difficult to measure quantitatively.
- *Piece-Rate Compensation:* In this case, employees are motivated to increase the volume of their work because their income is directly linked to the results. This encourages employees to improve productivity and efficiency in order to earn more.
- *Premium-Based Compensation:* Rewards are used to motivate employees to achieve or exceed specific goals, performance indicators, or standards. This can stimulate teamwork, leadership, innovation, and increased productivity.
- *Commission-based Compensation:* In this case, employees are motivated to achieve high results because their income is directly linked to the volume of sales or the revenue they generate for the company. This encourages active effort from employees and the continuous improvement of their personal sales skills.
- *Mixed (Time-Piece) Compensation:* This system combines the advantages of different approaches and allows for motivating employees both on stability (fixed part) and high performance (variable part). In this case, employees can receive a stable income for

performing their main duties and strive for additional earnings through bonuses, rewards, and other incentives.

Case study

In order to more clearly discuss the behavioral approach in the field of compensation and draw relevant conclusions, an online survey was conducted within the framework of this article among 100 respondents over the age of 18 who are employed. The survey was designed to explore key behavioral finance concepts, such as perceived fairness, relative income comparison, and bounded rationality, in the context of salary compensation. These dimensions were examined through the correlation of salary levels with age, education, work experience, and perceived fairness. The correlations observed in the survey suggest that salary perceptions are not solely determined by objective factors like experience or education. For instance, the significant relationship between perceived fairness and income level reflects behavioral patterns, such as reference dependence and social comparison.

Diagram 1.
The age distribution

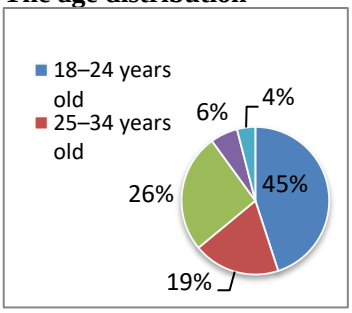


Diagram 2.
Educational attainment

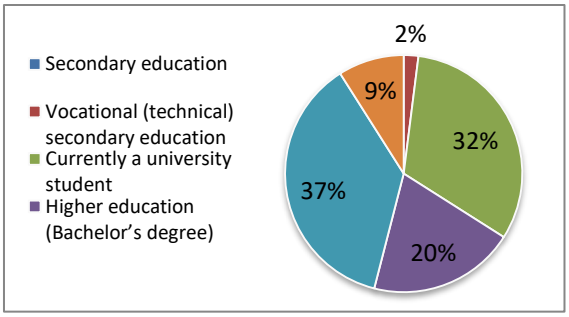


Diagram 3.
Employment Sector

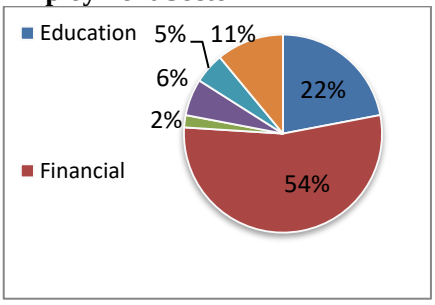


Diagram 4.
Work Experience in the Given Field

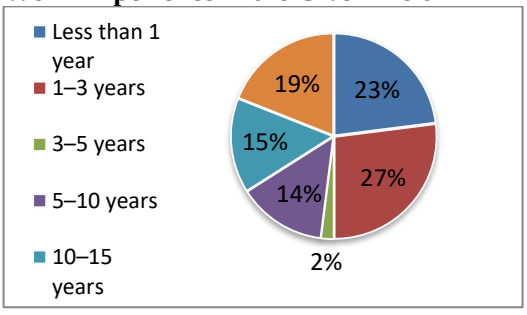


Diagram 5.
Salary Level

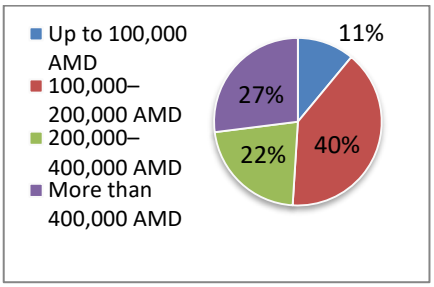


Diagram 6.
Perceived fairness of the amount paid for the work performed

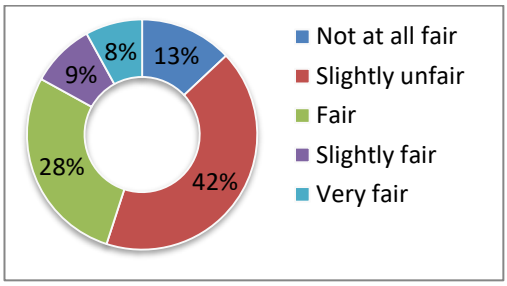


Diagram 7.
The employee's perceived salary level relative to the market

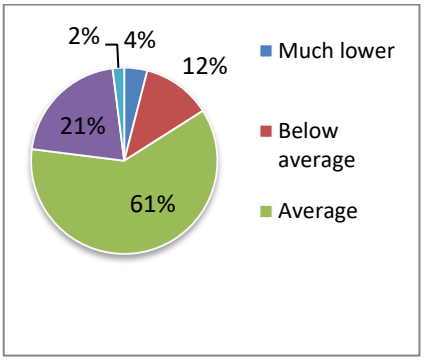


Diagram 8.
The role of salary level in job satisfaction

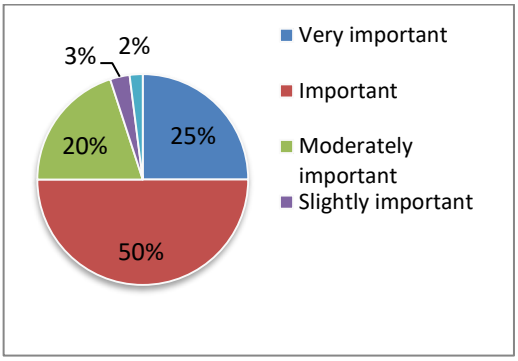


Diagram 9.
Which is important?

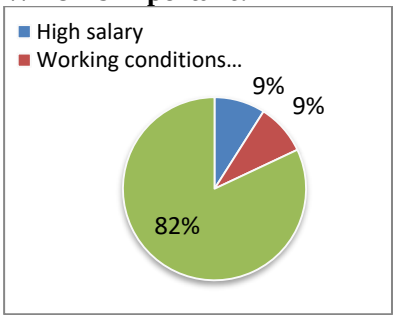
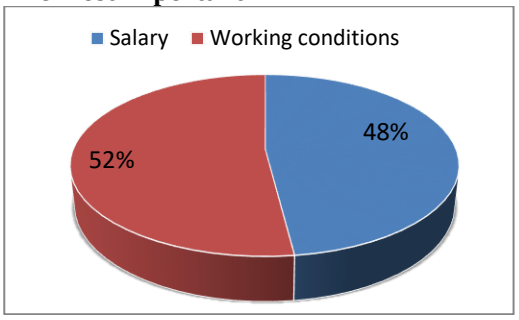


Diagram 10.
The most important



Source: *Developed by the authors based on survey results.*

Let us briefly comment on the results reflected in the diagrams.

According to Diagram 1, 45% of the respondents were between the ages of 18 and 24, 26% were aged 35–44, 19% were 25–34, 6% were 45–54, and only 4% belonged to the 55 and older age segment. Diagram 2 presents the respondents' level of education, showing that the largest share—37%—held a higher education degree (Master's level),

32% were still students, 20% held a Bachelor's degree, 9% had a scientific degree (PhD or equivalent), and only 2% had a vocational secondary education.

In terms of the employment sector (Diagram 3), 54% of respondents were engaged in the financial sector, 22% in education, 6% in IT, 5% in services, 2% in healthcare, and 11% in other sectors. It should be noted that "other" includes all responses that individually accounted for only about 1% of the total. Respondents who worked in more than one field were asked to indicate the sector of their primary employment.

Diagram 4 shows the length of respondents' professional experience in their respective sectors: 27% had worked in the sector from 1 to 3 years, 23% had less than 1 year of experience, 19% had more than 15 years of experience, 15% had worked for 10–15 years, 14% for 5–10 years, and 2% for 3–5 years.

Diagram 5 presents respondents' salary levels: 40% received a monthly salary ranging from 100,000 to 200,000 AMD, 27% earned more than 400,000 AMD, 22% earned between 200,000 and 400,000 AMD, and 11% earned less than 100,000 AMD.

Diagram 6 illustrates the respondents' subjective perception of the fairness of their salary. 42% considered their pay slightly unfair, 28% considered it fair, 13% viewed it as completely unfair, 9% perceived it as slightly fair, and 8% believed their salary to be very fair.

Respondents were also asked how they perceive their salary compared to that of colleagues in similar positions (Diagram 7). 61% considered their salary average, 21% above average, 12% below average, 4% very low, and 2% very high.

According to Diagram 8, 50% of respondents believed that the amount of salary plays an important role in job satisfaction, 25% considered it very important, 20% considered it moderately important, 3% gave it low importance, and 2% did not consider salary level to be a factor in their job satisfaction at all.

Finally, Diagram 9 shows that 82% of respondents considered both high salary and good working conditions equally important. However, when asked to choose only one factor (Diagram 10), 52% gave preference to working conditions, while 48% chose salary.

The data collected through the survey served as the basis for constructing a correlation matrix (Figure 1) and conducting the corresponding analysis within the scope of this article.

Figure 1

Correlation matrix

	X1	**X2**	**X3**	**X4**	**X5**	**X6**	**X7**	**X8**
X1	1							
X2	0,7	1						
X3	-0,1	-0,2	1					
X4	0,8	0,7	-0,1	1				
X5	0,3	0,4	0,2	0,4	1			
X6	-0,2	-0,1	0,1	-0,2	0,3	1		
X7	0,0	-0,1	0,2	-0,1	0,4	0,5	1	
X8	-0,1	0,0	0,1	-0,1	0,0	0,2	0,2	1

Source: *Developed by the authors based on survey results.*

where:
X1 represents age,
X2 the level of education,
X3 the field of employment,
X4 work experience,
X5 salary level,
X6 the perceived level of fairness from the employee's perspective,
X7 the comparison of one's salary to that of colleagues performing similar work,
X8 the role of salary in overall job satisfaction.

Disregarding variables that currently show either no relationship or extremely weak correlations, we focus on those that demonstrate weak, moderate, or strong associations with each other. As might logically be expected, the variable representing age shows a strong positive correlation with both the level of education and work experience. Likewise, there is a strong positive correlation between education level and work experience. A moderate positive correlation is observed between the perceived fairness (X6) and the perception of satisfaction with one's salary in comparison to others (X7).

The results also indicate weak positive correlations between age and salary level, education level and salary level, and work experience and salary level. This suggests that, although these factors would be expected to have a significant influence on salary from a rational perspective, their actual impact appears to be relatively limited.

It should be noted that the results of this survey cannot be generalized to the entire labor force due to sample limitations; the patterns observed support the relevance of behavioral finance theories in understanding salary satisfaction. Future research could include experiments or longitudinal studies to validate these findings.

Conclusion

From a rational perspective, it can be inferred from the above that all the factors which were expected to have a strong relationship with the level of remuneration do, in fact, exert some influence, but not to the extent that was anticipated. This is precisely why it is crucial to take into account the behavioral characteristics of both decision-makers and employees when making managerial decisions. It is worth noting here that traditional economics, which is based on models of rational behavior, often fails to explain the actual decisions people make. For example, instead of acting as "rational agents," individuals often make decisions guided by emotions, intuition, and limited information. Behavioral economics helps explain why traditional models, such as human capital theory, do not always adequately account for employee behavior. For instance, many decisions related to salaries, rewards, and bonuses are not based on objective productivity metrics, but are often influenced by emotions, expectations, and social factors. Some employees may be motivated not so much by money as by recognition of their work, a sense of fairness in the compensation system, and even by how they perceive their status and the attitudes of their colleagues toward them. This is particularly evident in the data presented in Diagram 9, where 82% of respondents indicated that they value both salary level and working conditions equally. In Diagram 10, when respondents were asked to choose between two options—whether they would prioritize salary or working conditions if forced to make a decision—52% indicated that they would prioritize working conditions. Therefore, it is crucial to apply the principles of behavioral economics to

develop more effective and equitable compensation systems. For example, an understanding of the anchoring effect, as mentioned earlier, could assist companies in establishing fairer salary structures, among other considerations.

References

Bogatyriev S. Y. (2019). *Instruments and technologies of behavioral finance*. Moscow. 7-24

Byrne A., & Brooks M. (2008). *Behavioral finance: Theories and evidence*. Cannon Financial Institute. https://www.cannonfinancial.com/uploads/main/Behavioral_Finance-Theories_Evidence.pdf

Kahneman, D., & Tversky, A. (1979). Prospect Theory: An Analysis of Decision under Risk. *Econometrica*, 47(2), 263–291. https://doi.org/10.2307/1914185

Lawler E. E. III. (1994). *Motivation in work organizations*. San Francisco. 1-113

Leković, M. (2020). *Cognitive Biases as an Integral Part of Behavioral Finance*. Economic Themes, 58(1), 75–96. https://www.researchgate.net/publication/341273388_Cognitive_biases_as_an_integral_part_of_behavioral_finance

Maslow, A. H. (1943). *A Theory of Human Motivation*. Psychological Review, 50(4), 370–396. https://psychclassics.yorku.ca/Maslow/motivation.htm

Obolikshto Y. (2014). *Behavioral finance and the modern enterprises: Russian reality*. SSRN. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2390841

Shivhare D. G. *Methods of remuneration*. Jiwaji University. https://jiwaji.edu/pdf/ecourse/management/methods%20of%20remuneration.pdf

Yi S. (2024), *Behavioral Finance: Several Key Effects of Investor Decision-Making.* SHS Web of Conferences. https://www.shs-conferences.org/articles/shsconf/pdf/2024/08/shsconf_icdde2024_01017.pdf

Yusoff, W. F. W., Kian, T. S., & Idris, M. T. M. (2013). *Herzberg's two-factor theory on work motivation: Does it work for today's environment?* Global Journal of Commerce and Management Perspective, *2*(5), 18–22. https://www.researchgate.net/publication/262639924

Xu J. (2023). *Behavioral finance provides insights into risk perception and risk management*. https://www.researchgate.net/publication/374867259

About the Publishing House of Yerevan State University

The Publishing House of Yerevan State University works closely with the academic community to publish high quality academic journals, monographs and textbooks, and provides services to promote teaching and research. Our main mission is to internationalize, make open, accessible and transparent the scientific work of the Armenian scientific community.

Our publications include digital, print and open access content spanning the humanities and social sciences, natural sciences and technology. In cooperation with authors, we distribute the best academic materials in the region and in the world.

Publish your journal and book with The Publishing House of Yerevan State University and you will join the scientific community of distinguished authors whose published work has helped shape and influence learning in the region and around the world.

- If you need information on how to apply to publish a book, you can read our guide here.
- For information on how to write for a scientific journal, please visit our journal author page here.

Open research
As a university press and not-for-profit publisher, we are committed to the advancement of open research, exploring and innovating new models that will ensure sustainability and quality, while maximising the benefits that openness can offer.

Author Services
In order to continue to publish the best local, regional and international researchers, it is important that we support researchers preparing their research for publication in our journals. In order to help prospective authors to prepare for submission and to reach their publication goals, we offer a range of high-quality manuscript preparation services - including language editing and video abstract creation.

Director of the Publishing House of Yerevan State University is Dr. Karen Grigoryan.
E-mail: publishing@ysu.am

YEREVAN STATE
UNIVERSITY
PUBLISHING HOUSE

Publishing Editor and Issued by **Armen Hovakimyan**
Proofreader **Gayane Grigoryan**
Technical Editor **Ani Khalatyan**

Address: 1, Alex Manoogian str., Yerevan

journals.ysu.am
Email: ephbanber@ysu.am
banber.econom@gmail.com