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Jabrailov Fehrur Nizami oglu*PhD student,**Economic Institute under the Ministry of Science and Education
of the Azerbaijan Republic**ORCID ID: 0009-0009-1959-5765***Kazimli Elvin Elshan oglu***PhD student,**Economic Institute under the Ministry of Science and Education
of the Azerbaijan Republic**ORCID ID: 0009 0006 7976 8179*

THE ROLE OF TRUST IN PROMOTING INNOVATION NETWORKS BASED ON MUTUAL COOPERATION: A COMPARATIVE STUDY OF PUBLIC AND PRIVATE SECTOR PARTNERSHIPS

Abstract. *The aim of the article.* The aim of the article is to study the role of trust in the development of collaborative innovation networks. In particular, the study analyzes how trust between public and private sector partnerships affects the effectiveness of these networks.

Methods. In order to achieve the goal set in the research, comparative research methods are used to examine examples of cooperation between the public and private sectors. Analysis and synthesis, statistical analysis and classification methods were also used in the process of writing the article.

Scientific innovation. The scientific novelty of the study is that it expands on existing research in this field and reveals the specific effects of public-private sector collaboration on innovation and the role of trust.

Practical significance. The practical significance of the research is that it contributes to the formation of new cooperation models and strategies for both public policymakers and private sector leaders.

Conclusions. It is noted that as global economic competition intensifies, collaborative innovation in key emerging sectors has attracted considerable attention as a means of promoting corporate development and economic progress. It is emphasized that in order to promote long-term growth of innovation networks, special attention should be paid to establishing and maintaining partnerships for future industrial development, maximizing cross-sector innovation networks, expanding the scale and depth of knowledge absorption. As this is necessary to enhance business competitiveness, expand employment prospects and promote creative economic growth. It is pointed out that establishing developed and reliable partnerships creates a basis for creating new innovations through information sharing and optimal use of resources. Therefore, strengthening trust and mutual confidence is the basis for successful and sustainable cooperation. This serves to ensure the economic and social development of both the public and private sectors.

Keywords: innovation networks, trust, mutual cooperation, public sector, private sector.

Problem statement and its relevance. In an increasingly competitive and complex global economy, the creation of collaborative innovation networks is emerging as a key driver of economic growth and sustainable development.

Innovation networks bring together diverse partners working together in education, research and development. These networks are recognized as important platforms that can accelerate scientific and technological progress. The success of such collaborations depends on building strong trust between partners. Public-private collaboration plays an important role in promoting innovation activities. However, both sectors have their own unique characteristics and objectives, which can change the nature or technical aspects of the collaboration.

Innovation networks are platforms where different organizations, experts and scientific institutions come together to share resources, exchange information and work on new ideas. These networks operate in a wide range of fields, from scientific research to technological developments. Collaborating partners can achieve greater results with their shared goals and resources. However, mutual trust is essential for such collaboration to be effective. Partners should trust each other, share information freely, and address potential risks together.

The purpose of the article is to examine the role of trust in innovation networks established between the public and private sectors, to assess the importance of trust in these mutual collaborations, and to propose effective strategies for increasing trust between partners.

To achieve the set goal, the following tasks need to be performed:

- To examine the essence and functions of trust in innovation networks;
- To identify factors and obstacles affecting the establishment of trust in public-private partnerships;
- To analyze existing research and experience on the topic;
- To develop relevant proposals and recommendations.

Analysis of recent research and publications. The role of the public and private sectors in the formation of innovation networks is different. The public sector mainly provides the legal framework, regulations, and promotion of these networks. The private sector further accelerates the implementation of these networks with financial resources and market information. However, without mutual trust between these two sectors, any cooperation may be ineffective.

The importance of innovation and its role in mutual cooperation. Two main categories of collaborative innovations are distinguished - intra-industry and inter-industry collaborative innovation. Collaboration and invention between several organizations within the same industry, including businesses, research institutions and academic institutions, is called intra-industry collaborative innovation. In contrast, inter-industry collaborative innovation involves cooperation between multiple industries to achieve synergy and complementarity in technology, resources and information. In addition to providing other industries with new resources and opportunities, such collaboration successfully develops innovations and increases competitiveness (Van de Ven, A.H., 1993, 23–51).

Strategic emerging industries are one of the main forces behind modern economic growth, influencing economic structure, developing technology and determining the direction of future development. In order to support high-quality economic growth, policymakers and business managers can benefit from both theoretical and practical implications of a comprehensive study of innovation networks in key emerging industries.

It is highly appropriate to refocus on the innovative capabilities of governance networks. In most developed Western countries, public innovation has become a hot topic and has risen to the top of the policy agenda. Thanks to new technologies and scientific discoveries, there are many innovations in the public and private sectors, but researchers are increasingly paying attention to innovation methods that emphasize the roles of managers, employees and users. The goal of employee-driven innovation is to use the experience, skills and ideas of public employees. Finally, user-driven innovation seeks to better understand consumers' desires, preferences and experiences by learning from them. As a cooperative paradigm, collaborative collaboration can increase the efficiency of innovation by facilitating risk sharing, resource integration, and knowledge sharing (Zhang, X.; Gao, C.; Zhang, S., 2021, 13).

Research shows that strong relationships and mutual trust between partners can enhance information sharing between organizations, improve performance and innovative capabilities (Liang, L.; Yu, B, 2021, 1574–1583). In addition, building excellent relationships can foster a culture of innovation by encouraging partners to work together to solve common challenges and achieve innovative goals.

Increased structural integration facilitates businesses' access to diverse resources and expertise, improves communication between partners, and creates a more conducive atmosphere for cooperative innovation.

Innovation has long been a priority for the private sector, as it is considered a powerful tool for developing new products, reducing costs, expanding markets, and increasing sales and profits. Many private businesses have their own R&D departments. Some large and growing companies, such as Google and 3M, allow their employees to dedicate 20% of their working hours to creating their own company concepts (Eggers and Singh, 2009).

A growing number of large corporations, such as IBM and Procter & Gamble, have established external knowledge networks to help them collaborate with users, academic experts, and government agencies to develop and implement innovative ideas. (Nambisan, 2008).

In some places, civil servants claim that the constant changes in regulations, standards, and norms create great stress and strain. Administrative reforms, policy changes, and changes in the scope and nature of public services are common. Public innovation, on the other hand, usually arises from more or less unintended circumstances. New procedures and services are created through local experimentation, made possible by limited access to dedicated funding. The haphazard nature of public innovation highlights the need for a new innovation strategy that seeks to transform innovation into a consistent, methodical practice that permeates the public sector as a whole.

The ways in which the public sector produces and delivers must also be rethought and changed, and the appearance, structure, and operations of public organizations must be transformed. Consider the following chart:

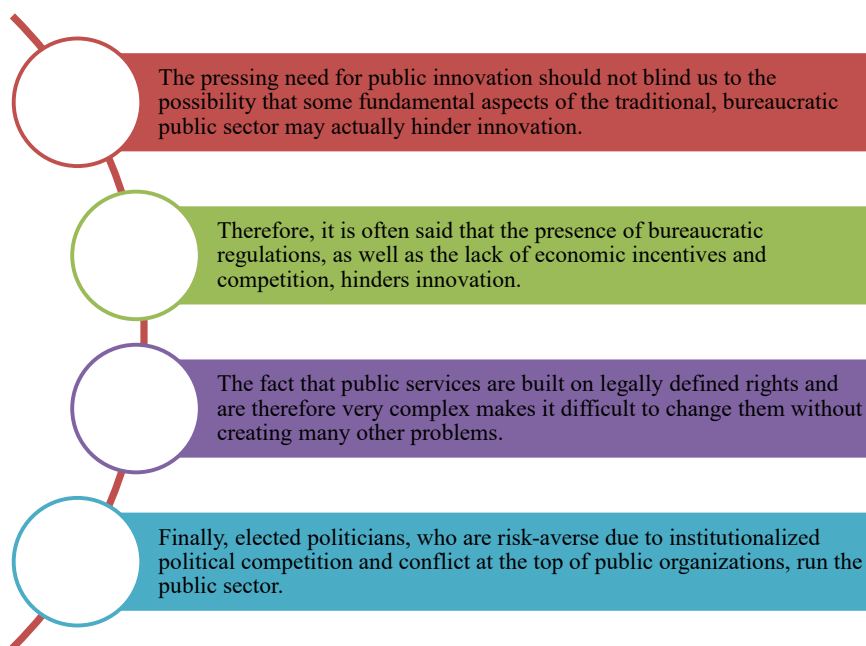


Figure 1 – Barriers to innovation in the public sector and the need for reform

Source: Hartley, Jean (2005), p. 28

The theoretical framework for examining public-private sector co-innovation is being developed, in part, through theoretical advances in several research areas. It is crucial to foster creativity, improve performance, and drive co-innovation in industry, as well as to foster innovation, improve performance, and promote co-innovation in industry.

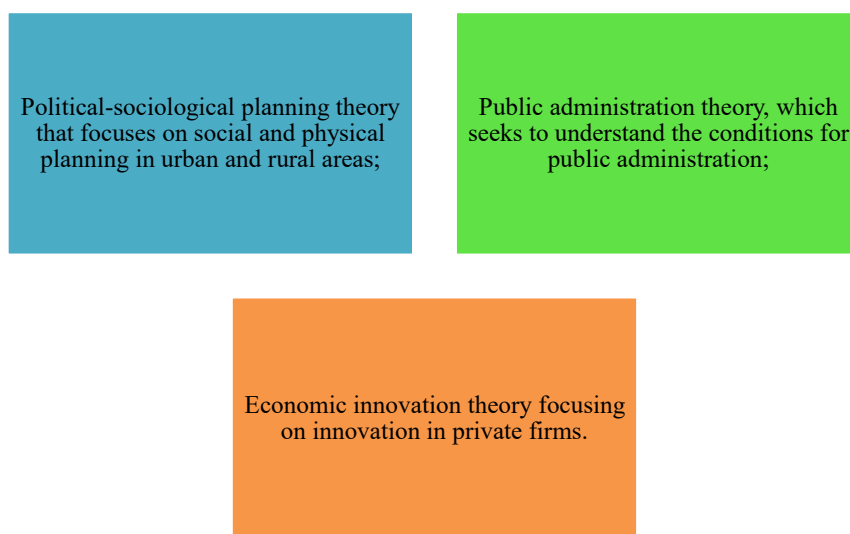


Figure 2 – Theories of innovation in the public and private sectors

Source: Edquist, Charles and Hommen. Leif (1999), p. 63

The place of trust in innovation networks. Trust is the cornerstone of mutual cooperation between partners. The importance of trust in innovation networks increases even more, because here different organizations and individuals pursue different goals and require open sharing of information. Developed and dynamic innovation ecosystems are possible with the development of this trust. In the private sector, trust is essential for cooperation between companies, sharing risks and sharing market experiences. At the same time, the public sector should focus on transparency and honesty in its relations with the private sector, which strengthens mutual trust (Harrison, J., & Rainer, S., 2019).

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Presentation of the main research material. Let's look at the dynamics of spending on technological innovations in various industrial sectors in Azerbaijan:

Table 1 – Expenditures on technological innovations in Azerbaijani industry, (million manats)

	2019	2020	2021	2022	2023
Mining industry	378,6	1001,1	529,8	19,3	87,2
Processing industry	47658,5	34918,7	5318,5	22521,1	11084,1
Production, distribution and supply of electricity, gas and steam	–	–	–	–	495,4
Water supply, waste treatment and processing	–	–	–	–	–

Source: State Statistical Committee of the Republic of Azerbaijan, (<https://www.stat.gov.az/source/industry/>)

Analysis of the table shows that spending on technological innovations in Azerbaijani industry has unstable dynamics. Although the mining industry received high investment in 2020, a sharp decrease was observed in subsequent years. Although the processing industry was the leader in innovation spending, it experienced a serious decline in 2021 and increased only in 2022, but decreased again in 2023. Innovation investments were recorded in the electricity, gas and steam generation sector only in 2023. The water supply and waste treatment sectors were completely left out of innovation investments.

These results indicate that the funds allocated for technological innovations are unevenly distributed across industries and that there have been serious fluctuations in some years. In general, it is necessary to ensure the sustainability of innovation spending in the country and to form a more balanced investment strategy across sectors. When strategic support from the state and market-oriented innovation initiatives of the private sector come together, a more sustainable and efficient innovation environment can be formed. This requires expanding public-private sector cooperation, especially in high-tech sectors, and maintaining stable investments. In addition, partners can communicate and work together more successfully by building strong cooperative relationships and trust, which reduces conflict and uncertainty in the process of mutual cooperation.

Establishing public-private partnerships. Cooperation between the public and private sectors is an important factor in strengthening the country's innovation environment. The public supports the private sector, especially by participating in high-risk and long-term research projects. The private sector, in turn, plays an important role in implementing innovation networks with its experience and financial strength. However, mutual trust is essential for the public and private sectors to cooperate.

If we look at the example of Azerbaijan, here are several important examples of mutual cooperation between the public and the private sector. For example, in Azerbaijan, within the framework of the "Innovation and Development of the Digital Economy in Azerbaijan" project, the public and private sectors work together to accelerate the implementation of new digital technologies across the country (Aliyev, 2020). This project has also increased the state's support in the field of research and development, in addition to offering innovative solutions for local enterprises. The role of trust between the parties in such projects is indispensable; while the public benefits from the technological experts and experience of the private sector, the private sector also uses the legal and economic guarantees provided by the state.

Azerbaijani companies producing high-tech products have achieved results in modern research and development by regularly cooperating with the state. For example, the company "Azercell" conducted research on the application of 5G technologies with the support of the state, which created the opportunity for the company to enter new markets (Azercell, 2022).

Building trust in cooperation between the public and private sectors can be difficult, because both parties have different goals. The public sector looks at the broader picture, mainly looking at social responsibility, economic development and legal regulations. The private sector, on the other hand, operates with the aim of making a profit, increasing competitiveness and gaining market advantage. These differences can create misunderstandings or trust problems between partners.

In the modern world, in projects where the public and the private sector cooperate, networking and joint research help both parties achieve their goals. However, lack of trust can create serious obstacles in this cooperation. The public should ensure transparency and mutual benefit when cooperating with the private sector, while the private sector expects support and stability from the public in the long term.

Azerbaijan in the global innovation index. The UN World Intellectual Property Organization (WIPO) has announced the 17th Global Innovation Index (GII). This index covers 133 countries and is based on approximately 80 indicators that assess their innovation potential, efficiency and current conditions. These indicators reflect the level of development of legislation, science and education, market economy, business

environment, infrastructure and other areas (<https://azranking.az/az/ratings/global-innovationsiyas-indeksi>).

The Global Innovation Index for 2024 is composed of 7 indicators that divide innovation activity into two main categories – “innovation inputs” and “innovation outputs”.

The sub-indices “Innovation resources” (institutions, human capital and science, infrastructure, market and business development) and “innovation results” (dissemination of knowledge and technologies, results of creative activity) assess the presence of innovative factors in the economies of countries and the results achieved in this area.

The leader of the 2024 Global Innovation Index was Switzerland. The top five also includes Sweden, the USA, Singapore and the UK. The top ten was then followed by South Korea, Finland, the Netherlands, Germany and Denmark. China, on the other hand, ranked 11th in this ranking. Azerbaijan is ranked 95th in the GDI in 2024.

According to the “Institutions” indicator of the index, our country was rated 51st in terms of government effectiveness, regulatory quality and political stability.

In the “Business environment” sub-indicator, our country moved up 2 places and ranks 15th. This indicates that there are favorable conditions for innovation and business development in Azerbaijan. Azerbaijan also rose 3 places to 19th in the “business policy stability” sub-indicator, which shows that it has left many regional countries behind. According to the “business development” indicator, our country is ranked 67th.

Azerbaijan is a leader in the South Caucasus in the field of university-industry cooperation, especially in scientific research and development (30th place), as well as cluster development (29th place). These indicators demonstrate that strong cooperation has been established between the scientific and private sectors, which is also important in terms of supporting research and innovation. The government supports the establishment of industrial clusters and cooperation in the field of scientific research and development as key directions of its development plans until 2030.

Also, Azerbaijan has moved up 17 places in the trademark sub-indicator of the “Results of creative activity” indicator, taking 49th place. According to this indicator, our country leaves many countries in the region behind (<https://azranking.az/az/ratings/global-innovationsiyas-indeksi>).

Reforms implemented in the education sector and investments in human capital are already yielding positive results. However, it is important to further strengthen cooperation between education and industry.

Conclusion. Promoting innovation networks can contribute not only to the development of high technologies, but also to increased economic and social development. Trust is of great importance in mutual cooperation between the public and private sectors. Creating transparent and mutual trust between the public and private sectors will ensure the effective functioning of these networks.

Azerbaijan’s modern innovation environment can further develop by strengthening the trust that forms the basis of this cooperation. It is noted that as global economic competition intensifies, collaborative innovation in key emerging sectors has attracted considerable attention as a means of promoting corporate development and economic progress. It is emphasized that in order to promote long-term growth of innovation networks, special attention should be paid to establishing and maintaining partnerships for future industrial development, maximizing cross-sector innovation networks, expanding the scale and depth of knowledge absorption. As this is necessary to enhance business competitiveness, expand employment prospects and promote creative economic growth. It is pointed out that establishing developed and reliable partnerships creates a basis for creating new innovations through information sharing and optimal use of resources. Therefore, strengthening trust and mutual confidence is the basis for successful and sustainable cooperation. This serves to ensure the economic and social development of both the public and private sectors.

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**Джабраїлів Фехруз Нізамі оглу,
Кязимли Ельвін Ельшан оглу**

*Економічний Інститут при Міністерстві науки та освіти
Азербайджанської Республіки*

РОЛЬ ДОВІРИ У РОЗВИТКУ ІННОВАЦІЙНИХ МЕРЕЖ, ЗАСНОВАНИХ НА ВЗАЄМНІЙ СПІВПРАЦІ: ПОРІВНЯЛЬНЕ ДОСЛІДЖЕННЯ ДЕРЖАВНИХ І ПРИВАТНИХ СЕКТОРНИХ ПАРТНЕРСТВ

Анотація. *Мета статті* – вивчити роль довіри у розвитку спільних інноваційних мереж. Зокрема, у дослідженні аналізується як довіра між партнерствами державного та приватного секторів впливає на ефективність цих мереж.

Методи. Для досягнення поставленої мети використовуються методи порівняльного дослідження для вивчення прикладів співпраці між державним та приватним секторами. У процесі написання статті також використовувалися методи аналізу та синтезу, статистичного аналізу та класифікації.

Новизна. Наукова новизна дослідження полягає в тому, що воно розширює існуючі дослідження в цій галузі та розкриває конкретні інноваційні ефекти ролі довіри у співпраці державного та приватного секторів.

Практична значущість. Практична значущість дослідження полягає в тому, що воно сприяє формуванню нових моделей та стратегій співпраці як для державних політиків, так і для лідерів приватного сектору.

Висновки. Зазначається, що в міру посилення глобальної економічної конкуренції спільні інновації в ключових секторах, що розвиваються, привертають значну увагу як засіб сприяння корпоративному розвитку та економічному прогресу. Наголошується, що для сприяння довгостроковому зростанню інноваційних мереж особливу увагу слід приділяти встановленню та підтримці партнерських відносин, розвитку промисловості у майбутньому, максимізації міжгалузевих інноваційних мереж, розширенню масштабу та глибини засвоєння знань. Це необхідно для підвищення конкурентоспроможності бізнесу, розширення перспектив працевлаштування та сприяння творчому економічному зростанню.

Вказується на те, що організація розвинених і надійних партнерських відносин створює основу для створення нових інновацій за допомогою обміну інформацією та оптимального використання ресурсів. Отже, зміцнення довіри та взаємної впевненості є основою для успішного та сталого співробітництва. Це є забезпеченням економічного та соціального розвитку як державного, так і приватного секторів.

Ключові слова: інноваційні мережі, довіра, взаємна співпраця, державний сектор, приватний сектор.