EVOLUTION AND DEVELOPMENT OF THE TRIPLE HELIX MODEL IN TURKEY

Abstract. The triple helix cooperation is in on-going development process in Turkey. Government is starting initiatives and supporting the industry and universities with various financial incentives and opportunities. Turkish and Kazakh “research universities” have a special status, and they are expected to produce knowledge that will be of great significance, innovation and produce concrete outcomes and products based upon creative and innovative scientific idea. The research was carried out in the frame of AP08052656 “Readiness assessment of Kazakhstani higher educational institutions for transformation within the context of “Triple Helix” project, funded by the Ministry of Education and Science of the Republic of Kazakhstan.

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In 2017 the concept of research university came into force in Turkey. The universities which carry out research projects, which have strong research infrastructure, profound academic experience and strong network of experts and faculty members started to be given the title of “research university”. Thanks to this concept, universities gained a new responsibility field and contribute to the research and science infrastructure of the country. Moreover, they are expected to cooperate with government and industry. This has been a significant step in Turkey to contribute to the Triple helix.

Innovation policy came into the force after 1980 when the highest technology industries had an impact upon the economical performances of the countries. The initial purpose of the innovation policy, which was implemented in liberal economies, is to cover the market deficiencies of the private sectors that wanted to
produce. Especially, related to the RE & DE activities’ finance, insufficient. Elçi (2016) have put forward these deficiencies in finance of the innovation activities. Among these, the preliminary deficiency is the risks that enable the continuity of the innovation projects. Venture capital is insufficient as an alternative finance method that is used in supporting the innovation and entrepreneurship due to the information asymmetry. Public innovation policy in Turkey was insufficient till the end of 1990s in terms of establishing systematic and integrated policy (Aydoğan, Erdil and Pamukçu, 2016).

Before 2000, innovation policy focusing on university centred fundamental research fields went into government and entrepreneurship centred reform process with the impact of liberalization period. Innovation experience that began with the establishment of KOSGEB (Small and Medium Industry Development Organization) and Technology Development Centers (TEKMER) founded with the collaboration of KOSGEB and universities was a significant step in commercializing the information & knowledge production. In the following step, with the triple helix of university-private sector and government, Technoparks and University-Industry Common Research Centers of Technology Development Regions (ÜSAM) started their activities and their activities had a huge impact on information production and enhanced the regional capacity.

With the purpose of developing the cooperation between the public authorities, private sector and non-government organizations, reducing the inter-regional and intra-regional development disparities, development agencies were expected to be established in regional places and there were regional expectations in terms of innovation politics (Development Agencies Law, 2006: Article 1).

Moreover, “National Science, Technology and Innovation Strategy” 2011-2016 politics documents put into practice by Higher Council of Science and Technology prioritized the innovation in the transformation of Turkey. With that strategy document, it became practical to follow the short and long-terms targets of Turkey in terms of creating a well-designed eco-system. In this process, support programs that will have a beneficial impact upon the RE & DE potential of the universities. Authorities made significant initiatives to combine information &
knowledge production with the national structure to have a big impact in terms of innovation.

In 2010, strategy which was more sectoral target based and which aimed to enable the universities and researchers in the universities for new enterprises, increase the share of private sector, was adopted (TÜBİTAK, 2010). In parallel, private companies were encouraged to establish RE &DE centers. It was put forward that universities should have technology development centers, incubation centers. University staff was incited to be part of this innovative process, contribute to the innovative ecosystem. Strategy and action plan, whose infrastructure activities began in 2012-2014, was published by the Ministry of Industry and Technology in 2015 and practical activities started accordingly (Ministry of Science, Industry and Technology, 2015).

With the “National Science and Technology Politics: 2003-2023 Strategical Policy Document” , the approach of innovation systems that began be effective on the innovation policies of Turkey created the base for the following plans and strategy documents. This innovation policy made it necessary for organizations to strengthen their capacity, develop intra-organizational learning process (Aydoğan, Erdil ve Pamukçu, 2016:678).

When the universities in Turkey are evaluated, cooperation of some universities in the cities except for Ankara, Istanbul and Izmir, is still in on-going development process. Most of thee seem to have been established in the last 20 years. With the increase of universities, human capital indicators such as number of academics working in universities and the number of students graduating from the university increased. It was found out that the universities which were established after 1990 had the aim to improve the region and reduce intra-regional and revive the economic life in small and medium-scaled cities. Based upon this, it can be said that universities in Turkey are acknowledged as regional development tool.

Technology development centers which are the live actors of university-private sector interaction are the tangible examples of the cooperation in Turkey. Technology development centers which gained a legal identity in 2001 can incorporate technology transfer offices and incubation centers.
In order to produce highest technology products and increase the competitive power in the industry, the connection between the university and industry needs to be strengthened. Turkey has an extensive and effective ecosystem that will strengthen this connection. Within this ecosystem extending to 81 cities, governmental bodies, universities, academic staff in the university, Technology Development Centers, Research/Design Centers, Technology Transfer Offices, Implementation and Research Centers within the universities, University-Industry Cooperation Centers, organized industrial zones work (Bahçeci, 2019). They have an active role within the ecosystem. The shareholders which are part of the ecosystem are listed below (Bahçeci, 2019).

*Strategic road map*

In order to enable the effective public organizational structuring, it was decided that University-Industry-Government Cooperation Working Group would be established. Moreover, decisions were made to establish University-Industry-Government Planning and Development Boards and they would be incited to work effectively and cooperate. Another plan was to create a “Cooperation-Based Education Model” between public, university and industry, to organize post-graduate programs in a way that would support university-industry-government operation. To strengthen the triple helix cooperation, some plans were made to be implemented as follows:

a) Prioritized programs considered as urgent and necessary and fulfilling the needs of the sectoral field will be opened in the Vocational High Schools/Colleges. The programs which were not in high demand would be revised.

b) Undergraduate program will include such courses as entrepreneurship, project development, industry cooperation projects, intellectual and industrial property rights, research & development management courses.

c) The academic staff who carries out projects enabling cooperation between university and industry will be funded, their national and international conference expenditures will be covered, their seminar expenses will be prioritize.

d) Commercialization support programs will be enabled.
e) The results of the state supported RE &DE projects will be pursed after the project term terminates.

Currently, universities are also in transition process to the research-based activities. The government is raising the awareness of academic staff to transform the knowledge into product. TÜBİTAK is supporting the academic and industrial fields to cooperate and produce new, creative and innovative products. Strategy documents published in Turkey state that technology and science concepts are the key components of development and civilization. The development of technology and science will turn into social benefit of the society. Also basing upon the Planned Development Models in Turkey, dynamic social and economy enhancing the cooperation of industry, government and university is put into force.

Turkey is in a phase to move to the status of developed countries, focuses on research-based cooperation network and projects and trying to transform the RE&DE culture into sustainable one which will contribute to the economy, as well. In this development phase, government is putting financial supports to improve the status of research laboratories and improve the technological opportunities. Strategy documents and plans are developed and published to determine the plans of the following years and important steps are taken to enable the economy-based society structure.

Supporting the triple helix will have a positive impact upon the economic situation of Turkey. New employment fields will be created for the graduates of university bachelor and post-graduate programs. Also, there are some initiatives and steps to adapt the recent bachelor and post-graduate educational content and curriculum according to the needs of the sector, which is considered to resolve the mismatch between the capabilities and skills of the graduates and lacking points in the sectoral fields. Lack of employment power in the sector will be completed and fulfilled in this way.

References:
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