Journal of Current Researches on Social Sciences
(JoCReSS)
www.stracademy.org/jocress
ISSN: 2547-9644

Year: 2017
Volume: 7
Issue: 1

An Analysis of TUBITAK Projects' Budgets and Regional Distributions with Recommendations

Onder KASKA[1], Hediye KIRLI AKIN[2], Nehir TOKGOZ[3] & Recep HALICIOGLU[4]

Keywords
TUBITAK, data analysis, regional development.

Article History
Received
13 April, 2017
Revised
21 April, 2017
Accepted

Abstract
In this study, the TUBITAK's budget that was distributed to universities in one year is analyzed. It has been observed that the amount of the support distributed to developed universities is higher than that of developing universities. However, emerging universities need more equipment, materials and personnel. In this respect, an approach has been presented for balancing the regional distribution of the TUBITAK budget on Turkey. The approach will accelerate their development in developing universities.

1. Introduction

Research projects are suggested, accepted and supported by different councils in the world. The Scientific and Technological Research Council of Turkey (TUBITAK) is an important national founder of Turkey. TUBITAK supports research and development (R&D) projects by Turkish researchers of universities and research institutions as well as industry. The council was established in 1963 for a mission of advancing of science and technology in Turkey. Since then, TUBITAK has provided high level contributions in science and technology to universities, other state and private organizations by supporting their projects. A result of this supports a lot scientific articles and patents are published in the world by Turkish researchers. TUBITAK where more than 1500 researchers work in different 15 institutes also conducts and coordinates R&D within national priorities and targets (URL1). In 2015, R&D spending in Turkey was realized as 20 billion 615 million TL with an increase of 17.1% over the previous year. Ratio of R&D expenditures to GDP was 1.06% that is an important source for researchers. The commercial sector had the largest share with 50% followed by the higher education sector with 39.7% and the state sector with 10.3% in the Gross Domestic R&D expenditures (Doğan, 2015). Academic personals are generally supported under the TUBITAK

[1] Osmaniye Korkut Ata University, Department of Mechanical Engineering, Osmaniye, Turkey
[2] Corresponding Author. Department of Manufacturing Engineering, Osmaniye Korkut Ata University, Osmaniye, Turkey, hediyeakin@osmaniye.edu.tr
[3] Department of Energy Systems Engineering, Osmaniye Korkut Ata University, Osmaniye, Turkey
[4] Osmaniye Korkut Ata University, Department of Mechanical Engineering, Osmaniye, Turkey

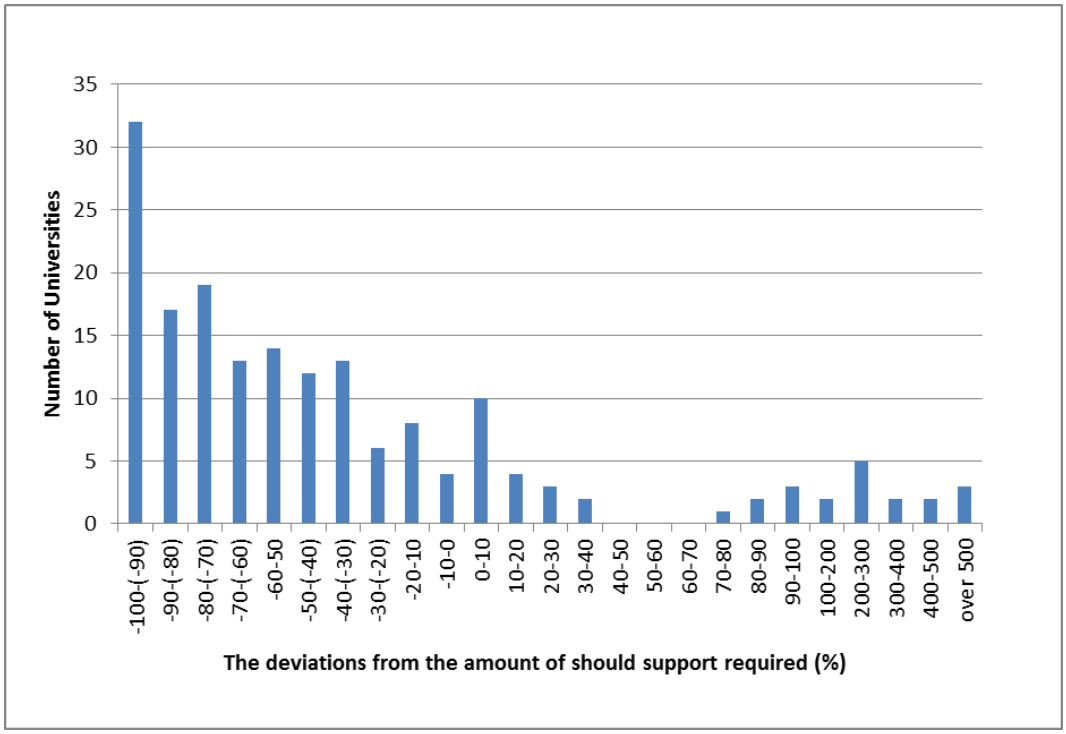
projects. However, it is seen that there are very big differences in the budget distributions between regions. In reality, regional differences in development are available in the world. Today, there are regional differences in different countries, although at different intensities this related with economic developments. This situation is not acceptable and can be solved by some policies. In Turkey, since long there has been training in regional planning and applications. But, improvements are needed in some areas. Mutluer (1999) investigated these differences and showed some advices that are increase investments for regional planning, establishment of authorities in each region and the provision of infrastructure support by region. Sevinc (2011) evaluated the efficiency of the regional policies applied on removing unbalances which are between the regions. It was seen that the development policies to be applied should be implemented both to analyze the internal potentials in the region and the potentials in the country and to realize development at both national and regional-local level with a complete governance system. Arslan (2005) emphasized that the abandonment of the classic backward region concept and the adoption of the concept of regional planning so that the policies envisaged in the national development plans could respond to local needs and be transformed into local actions, was the time for the incentives to be determined within the regional plan discipline and for each region to be determined by regional development agencies.

Reginal supports of the TUBITAK in 2015 are investigated in this study. Having unbalanced distributions of the project budgets, some recommendations are suggested. Regional units under the TUBITAK can be adopted and local researchers can directly support for doing a scientific project. By doing so, infrastructure of universities can brought to an equal level.

2. Analysis of TUBITAK Budgets

The graphics obtained by analyzing the data taken from The Scientific and Technological Research Council of Turkey (TUBITAK) are presented in this chapter. During analysis the statistical data of 2015 published on TUBITAK's and YOK official web site are used (URL2). In this context, 177 state and foundation universities, the number of faculty members, the number of projects they proposed to TÜBITAK, the number of projects supported by TUBITAK and the total project budgets supported were examined in detail. As a result of the analyzes, it has been observed that the total budget was unevenly distributed to the universities. Amount of support required per scientist is calculated by dividing the total support budget to the total numbers of academic staff. The difference between the amount of support received and the amount of support required and the rate of deviation from the amount of support required are calculated as a percentage. After the amount of support per scientist is determined, the amount of support required for each university, taking into account the number of scientific staff, is calculated from Equation 1.

Figure 1. Number of universities in Turkey vs the deviations from the amount of should support required



$$RS = (TBxNSS) / TNSS \qquad (1)$$

Here, *RS, TB, NSS, TNSS* present the amount of required support, TUBITAK total budget, the scientific staff number, the total number of *scientific* staff, respectively. The deviations from calculated support budget are shown in Fig. 1. According to the figure, three universities have gained 500 times more than support required and 32 universities have gained none or nineteen percent less than they had to. 138 universities, on the other hand gained less than support.

Distributions of the first ten universities receiving the most support on a budget basis are shown in Fig. 2. The blue columns represent the supports money that is gained and red columns represent the amount of should support required terms of the project. Five of these ten universities are state universities and five are foundation universities. It is remarkable that the supported state universities are well-established and have research and development infrastructure. It is also known that the foundation universities don't have difficulty in finding sources for settings research and development infrastructure than state universities. Thus the productivity of scientist in well-established and developed state and foundation universities is better thanks to the opportunities given. This situation has already caused on the gap to further increase the among infrastructure and the working environment on the regional basis. For instance; the working conditions of a university in Şırnak are not the same as those in a city that is self-sufficient like Kayseri. The support of developed universities reduces the motivation of academicians in remaining universities and their productivity. For this reason, it is proposed that the budget of the TUBITAK should be separated in a fair way between the regions and that each region should use its own budget. Thus, it is

believed that the differences between developed universities and developing universities will be reduced. Although Productivity of Academicians in well-established university increases as a result of the TUBITAK supports, it brings opportunity-inequality for faculty members in developing universities. Sabancı University is supported by an amount of 2,000 times more than the amount of support required defined in the present study (Fig. 2). Whereas, ten developing universities could not get any support.

Quantity of the support from state and foundation universities is presented in the Fig. 3. According to the chart, 15 state and foundation universities receive more shares than the total support of the others. While Bilkent University was ranked among these 15 universities Dokuz Eylül University was at the last in these 15 universities. The diagram was drawn on the basis of the amount of total supported received per university.

Figure 2. Distributions of the first ten universities receiving the most support on a budget basis

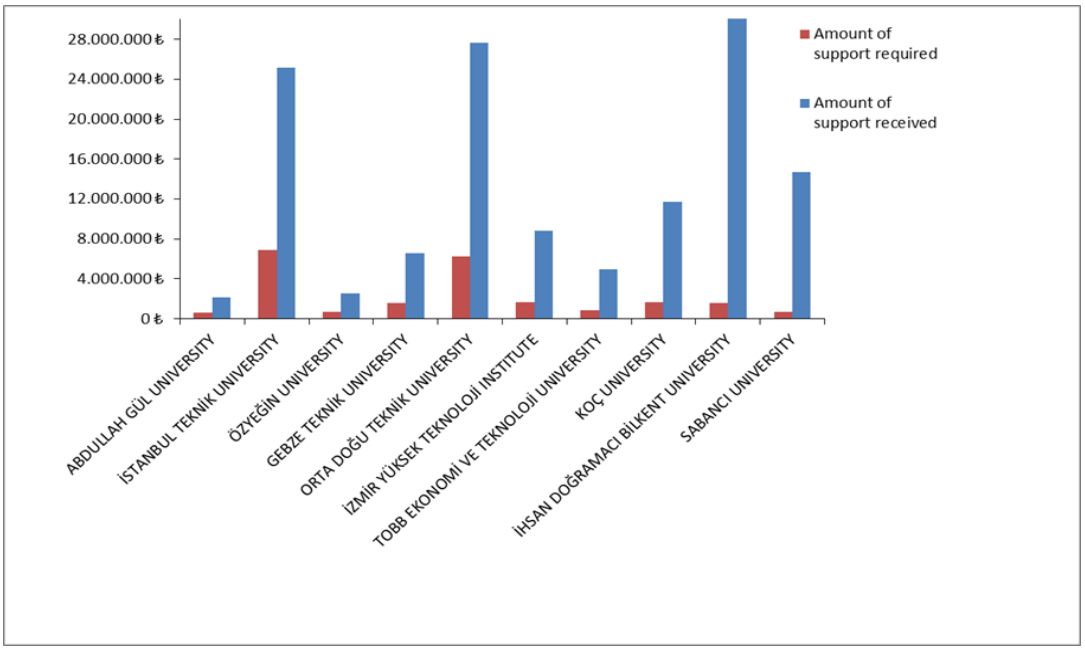
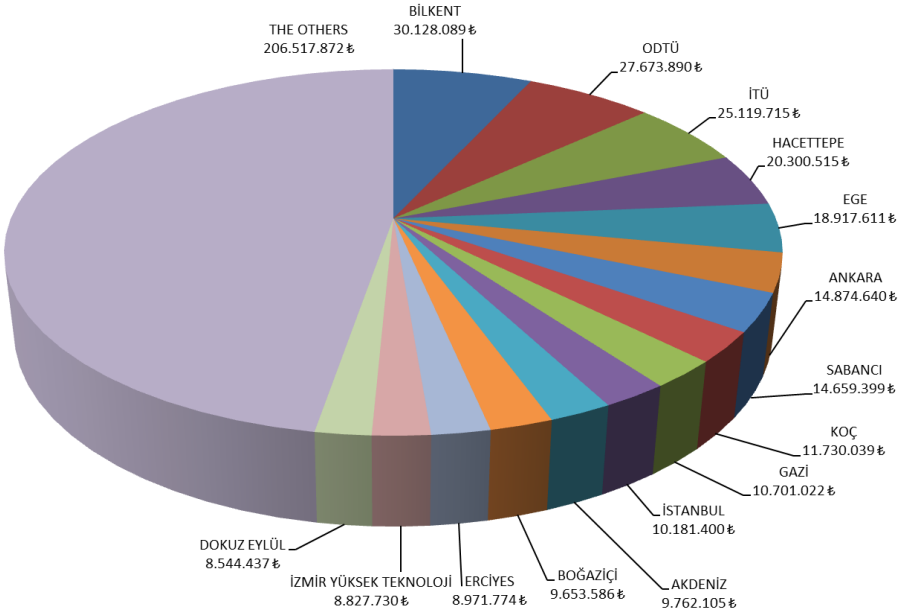


Figure 3. Quantity of the support from state and foundation universities



Depending upon results and discussions above, classification of regional units of TUBITAK supports studied below. The classification of regional units of TUBITAK support was given taking into account the Classification of Territorial Units for Statistics (NUTS). NUTS is a geocode standard for referencing the subdivisions of countries for statistical purposes. The main purpose of these regional units is to collect statistics on a regional basis, to make socio-economic analysis and to frame the regional policies for collecting. The cities in the NUTS are classified as "Level 3" and the neighboring provinces that are similar in economic, social and geographical directions are grouped as "Level 1" and "level 2" by considering regional development plans and population sizes (URL3).

The main factors used in defining the statistical regions are:

- Population
- Geography
- Regional Development Plans
- Basic Statistics Indicators
- Socio-economic development ranking of provinces

The proposed regional support was based on Level 2. According to Öztürk (2009), regional development plans of NUTS Level 2 regions, socio-economic development ranking survey of provinces, scale of settlement centers and GDP per capita, per capita production in industry sector, agricultural production value, population density, Some basic statistics supported by field experience and observation, taking into account the indicators; historical, economic, cultural and social knowledge based on their expertise.

TUBITAK support is not distributed homogeneously on the basis of the number of academic member. As a result of the study, it is advised that TURKEY should be divided into 26 different regions according to the number of academic member as given in Fig. 4. These regions are shown on the colored map of the TURKEY according to the amount of support needed.

In accordance with the prepared map, Istanbul is the 1st region, with the number of 25654 academic members (81x106 TL) and Şınak, Siirt, Batman and Mardin are 26th and last region with the number of 1419 academic members (4,5x106 TL). Regional determination and distrubution of support budget of TUBITAK will pave the way for equality in opportunities.

Figure 4. Regional demonstration of the universities as number of scientific members

3. Conclusions

Regional supports of the TUBITAK are investigated in this study by using statistical data of 2015 published on TUBITAK's and YOK official web site. Some conclusions and suggestions are summarized below.

TUBITAK R&D support is not homegenously distrubuted around the country. TUBITAK support make the well-established university better however, this brings inequality opportunities for academic staff member in developing universities. To overcome this issue, it is suggested that TUBITAK supports have to be divided according to NUTS. Budget of the supports have to be regulated depending upon number of academic staff of the university. It will be better to evaluate allocated budget determined according to present study than a central support budget. A dynamic budget model has to be realized to tolerate change in number of academic staff.

References

A. Dogan, Araştırma-Geliştirme Faaliyetleri Araştırması. TUIK haber bulteni vol.21782, 2015.

A. Ozturk, "Homojen ve fonksiyonel bölgelerin tespiti ve Türkiye için istatistiki bölge birimleri önerisi: planlama uzmanlığı tezi" Devlet Planlama Teşkilatı, 2009.

H. Sevinç, "Bölgesel kalkınma sorunsalı: Türkiye'de uygulanan bölgesel kalkınma politikaları" in Journal of Entrepreneurship and Development, vol. 6(2), pp. 35-54, 2011.

K. Arslan, "Bölgesel Kalkınma Farklılıklarının Giderilmesinde Etkin Bir Araç: Bölgesel Planlama ve Bölgesel Kalkınma Ajansları" in Istanbul Ticaret Universitesi Sosyal Bilimler Dergisi, vol. 4(7), pp. 275-294, 2005.

M. Mutluer, "Türkiye'de Bölgesel Dengesizlikler ve Bölge Planlama Çalışmaları Üzerine Gözlemler" in Ege Coğrafya Dergisi vol. 10(1) pp. 173-194, 1999.

URL1: https://www.tubitak.gov.tr/en/about-us/content-who-we-are, accessed in February 2017.

URL2: https://www.tubitak.gov.tr/tr/destekler/akademik/ulusal-destek-programlari/icerik-akademik-destek-istatistikleri, accessed in February 2017.

URL3: http://www.planlama.org, accessed in February 2017