

Functional Transformation of Universities: An Assessment on Literature

Üniversitelerin Fonksiyonel Dönüşümü: Literatür Üzerinden Bir Değerlendirme

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ABSTRACT

There is broad literature on the impacts of universities as well as classification studies carried out taking into account the methods and approaches used in these studies. However, no assessment based on a global and a specific country agenda is available. In my opinion, the historical review of the mass literature on the universities' impacts will provide important insight into the functional transformation of universities. University institution is a result of social production influenced by social development processes as well as the need to shape them. In this study, the literature on universities' impacts was assessed according to the language criteria. The studies conducted on the impacts of the universities in English -which is today's lingua franca- and in Turkish, to represent the local level, are classified based on their contents and dates. It is designated that universities have undergone a functional transformation over the years. Besides that, there are similarities and differences encountered in studies in English and Turkish. The Type 1 studies, which reveal the expenditure impacts of university, have been started in English since 1960s and in Turkish in the 1990s. As for Type 2 studies, which are related to Knowledge impacts of the university, it has been determined that there is a historical parallelism.

Keywords: Universities, Literature assessment, Expenditure impacts, Knowledge impacts, Functional transformation

ÖZ

Üniversitenin etkileri ile ilgili oldukça geniş bir literatür mevcuttur. Söz konusu çalışmalarda kullanılan yöntemler ve yaklaşımlar göz önünde bulundurularak yapılan literatür sınıflandırma çalışmaları vardır. Ancak küresel ve belirli bir ülke gündemi baz alınarak bir değerlendirmeye rastlanmamıştır. Kanımca üniversitenin etkileri ile ilgili yığın literatürün tarihsel olarak değerlendirilmesi üniversitenin geçirdiği fonksiyonel dönüşüm hakkında önemli bilgiler verecektir. Üniversite kurumu, toplumsal bir üretimin sonucudur. Bu kurum toplumsal gelişmelere yön verdiği kadar söz konusu gelişmelerden de etkilenmektedir. Bu çalışmada üniversitenin etkileri ile ilgili literatür dil kriterine göre değerlendirilmiştir. Günümüz 'Lingua Franca'sı İngilizce ve yerel düzeyi temsil etmek için Türkçe'de yapılan üniversite etki çalışmaları içerikleri ve yapıldıkları tarih baz alınarak sınıflandırılmıştır. Yapılan değerlendirme sonucu üniversitenin yıllar içinde fonksiyonel dönüşüm geçirdiği belirlenmiştir. Bunun yanında İngilizce ve Türkçe'de yapılan çalışmalar arasında benzerlik ve farklılıklara ulaşılmıştır. Üniversitenin harcama etkilerini ortaya koyan Tip 1 çalışmaları İngilizce'de 1960'larda, Türkçe'de ise 1990'lı yıllarla beraber yapılmaya başlanmıştır. Üniversitenin bilgi etkilerini konu alan Tip 2 çalışmalarda ise tarihsel bir paralellik olduğu saptanmıştır.

Anahtar Sözcükler: Üniversiteler, Literatür değerlendirmesi, Harcama etkileri, Bilgi etkileri, Fonksiyonel dönüşüm

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INTRODUCTION

The function of the university institution, whose origin can be traced back to Medieval Europe, has undergone a transformation parallel with the developments in the world. According to Wallerstein (1999), medieval universities completed their evolution in the 1500s and then disappeared in the next three hundred years. The universities we have today were almost recreated in Western Europe and North America in the 19th century and spread slowly for one century and then rapidly to world's other regions after 1945. Wallerstein's differentiation is generally related to universities' structural transformation. Brockliss (2000) assessed universities' relationship with their environment, taking 1800 as base year. Gibbons et al. (1994) viewed this relationship in terms of knowledge production structure and conceptualized it as transformation from *mode 1* to *mode 2*. Accordingly, *mode 1* represents a knowledge production structure which is conceptual, static, isolated from society, homogeneous and hierarchical and where academic discipline boundaries are strong, while *mode 2* represents an applied, interdisciplinary, public related, heterogeneous, nonhierarchical and dynamic knowledge production structure.

Being an institution with a historical background of approximately a millennium, universities' mission has been argued in parallel with social, economic and political developments in the world. Agendas such as enlightenment, modernization, progress, industrialization, and capitalism have created changes in the knowledge production infrastructure. As Peter Burke (2010: 51) stated, Gottfried Leibniz (1646-1716), one of the leading philosophers of the 17th century, put forward his argument that "knowledge can be improved and corrected". Ontological and epistemological discussions and new approaches arising in this period led to a change in universities' function. So, universities with their educational purpose aspect being dominant until 1800s took research as a mission from this date onward. The idea of research university emerged with the influence of German school and spread over many countries.

The demand for higher education increased after World War II and universities started to spread all over the world with enormous momentum. The number of students in higher education doubled between 1950 and 1970 (Schofer & Meyer, 2005: 899). According to Habermas and Blazek (1987: 6), enrollment in universities dramatically increased between 1950 and 1980 and university registration rates rose from 4% to 30%. These developments in higher education and the inequalities encountered with urban and regional problems in the post-war period led to a transformation in public policies. In Turkey, establishment of new universities and location choice have become a subject of debate and in line with the demand for higher education new universities began to spread around the peripheral provinces in accordance with the economic paradigms of the period (Toprak, 2012). Theoretical and political debates about the regional role of universities have begun to emerge in the 1960s. The oil crisis emerging in the developed countries in the late 1970s and early 1980s led to an economic recession and universities started to be perceived as an important tool for the regional economy (Florax, 1992: 5). There has

been an increasing interest in understanding and modeling the impact of higher education institutions on regional and national economic development over the last twenty years (Drucker & Goldstein, 2007: 20). Whereas in Turkey, the relationship between universities and local development became a subject of debate in the 1970s, but academic studies began to take place in the 1990s. As new universities were established in different provinces of Turkey, the number of studies related to the impacts of the universities increased.

The history of the university, influenced by social, economic, and political developments, is misperceived as if there was a linear and universal university history when approached from a global perspective. However, being a Western-based institution, universities have become a part of a different story in all countries where it is "imported". In each country, universities, like other educational institutions, reflect the economic and social structure, political and cultural aspirations, successes and contradictions of the society they exist in (Meray, 1970: 14). This affected what expected from universities in the way in which universities were addressed, and the way in which universities were addressed in academic studies on universities. Indeed, we may mention three main approaches to universities' impacts according to Felsenstein's (1996) framework. These are;

- a. studies on the relationship between technological concentration and the existence of universities,
- b. studies on human capital, local labor market and the establishment of new companies,
- c. studies on place-based field studies and universities' impacts on local economic development.

The literature on universities' impacts is assessed based on the language criteria in this study. While English represents the global trend as *lingua franca*, Turkish will be used to determine the content of studies on universities' impacts in Turkey. How have studies on universities' impacts differentiated over the years? What kind of similarities or differences are there between the literatures in Turkish and English? Such questions form the main questions of the study.

However, this study does not aim to create a bibliography through exact number of studies for universities' impacts. The main aim of this study is "to read" the functional transformation of universities based on accessible sources. Having said that, references of the study may provide researchers, who will be interested in this issue in the future, with a comprehensive literature.

METHOD

There have always been some issues with classification studies. Especially, there are criticisms against the classifications made in the field of social sciences that they are "subjective". The classification made in this study is likewise of a subjective nature and is open to discussion.

There are studies in the literature that classify the research on the various impacts of the university institution. According to

Felsenstein (1996), these studies may be gathered under three headings.

- studies on the relationship between the universities and the concentration of advanced technologies;
- universities' impacts on the labor market in the region, the establishment of companies and the developments in the local service sector, and
- studies on the universities' impact on local economy.

On the other hand, Florax (1992: 80) gathered universities' impacts under two headings: *Expenditure* and *knowledge impacts*. In Florax's classification, the expenditure impacts define the economic contribution created by universities and their staff, students and the expenditures made by visitors, while the knowledge impacts define the impacts created by the university through knowledge production. However, Florax's classification will be used in this study.

Studies on the social and economic impacts of the universities may provide leads about the way the universities are addressed and the mission attributed to them. These clues may vary from period to period. It is because the way in which the discussion and address of any object/subject in social sciences changes over time. For this reason, the studies related to the universities' impacts have been archived by screening method and classified according to their content and approaches to the function of universities. As a result of classification, it is understood that the studies that address the impacts of the universities can be grouped into two categories, *Type 1* and *Type 2*. *Type 1* studies include universities, students, staff and expenditures made by visitors and the universities' impacts on employment, while *Type 2* studies include the universities' impacts on knowledge and human capital they produce and the knowledge infrastructure of the region they are located in. Both the English and the Turkish literature determined in two categories have been reviewed based on periods¹. With this method, it is aimed to determine the similarities and differences in English and Turkish literature based on categories.

Literature in English

The history of the studies on the origin, development and structuring of the modern positivist universities dates back

to 18th and 19th centuries (e.g., Wood, 1786; Raumer, 1859; Arnold, 1882; Laurie, 1887; Brodrick, 1887; Rashdall, 1895). At the beginning of the 20th century, studies were conducted related to university-city relations. Charles Dabney (1908) emphasized that the University of Wisconsin is supporting the region for agriculture, industry and political aspects. However, these studies are related to the general social and economic functions of the universities.

Type 1 Studies (Expenditures and Employment Impacts)

Systematic studies on the universities' Type 1 impacts in the English literature began in the 1960s (Figure 1) (e.g. Harvey, 1958; Kraushaar, 1964; Mischaikow & Spratlen, 1967; Bonner, 1968). In the 1970s, this subject became to be studied more intensely (e.g. Cook, 1970; Caffrey & Isaacs, 1971; Laub, 1972; Brownrigg, 1973; Wilson & Raymond, 1973; Philips, 1974; Wilson, 1975; Booth & Jarret, 1976; Jeacock, 1977; Linthicum, 1978; Breslin, 1979). Studies on universities' impacts began to become a subject of debate and this refers to a development that can be seen as a result of restructuring policies after World War II. It became a priority in post-war conditions to identify and improve the performance of the agents that would lead to development or growth in social and economic restructuring. In this period, the discipline of regional science became institutionalized, and the theories of development and growth began to advance. The theoretical background related to the universities' impacts is based on academic and political developments in this period. Universities, an important public investment in this period when welfare state policies were on the agenda, became a subject of debate for researchers.

Although universities have become an institution affecting immigration, housing, transportation, demographic structure etc., studies conducted over the last half century focused on the "measurable" impacts of the universities, such as expenditures and employment. This stems from both the structure of the disciplines dealing with the subject and the dominant paradigm. The period when universities' impacts became a research subject coincides with the time in which the positivist paradigm was dominant. As scientists working on the subject are usually from the areas of regional science, economics, business, and public administration, studies are more limited to the universities' "calculable/measurable" impacts. However,

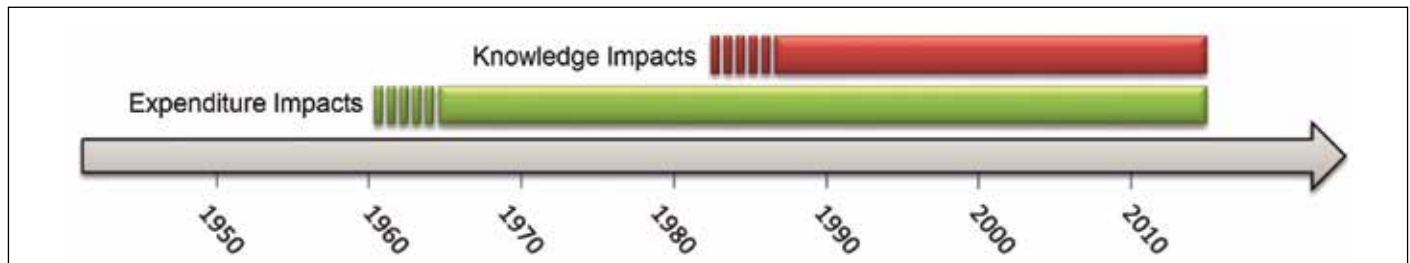


Figure 1: Chronological Table of Studies Related to Universities' Impacts on expenditures /Employment (Type 1) and Knowledge Economy (Type 2) in the English Literature.

¹Studies conducted by Turkish researchers but published in English have been included in the Turkish group since they are related to Turkey.

impacts on housing, migration and transportation have been studied even if there are few of them (e.g. Ogur, 1973; Ryan, 1977; Macintyre, 2003; Glasson, 2003; Cortes, 2004; Steinacker, 2005; Bartik & Erickcek, 2008; Vandegrift et al., 2009; Lockshiss, 2009; Munro & Livingstone, 2012).

Type 2 Studies (Knowledge Impacts)

Two main actors (state and industry) were dominant in the production in industrial development. Being the source of information and human capital, universities became central in production system with the transformation of knowledge into the most important input for production (Etzkowitz, 2008: 1). This new and dominant role of the universities in knowledge-based development placed universities in a different framework. Concepts such as university-industry cooperation, human capital, patents, innovations, techno-parks etc. are the main themes of the knowledge economy.

Universities, especially in the United States and Western European countries, were considered to be the most important component of technological projects in the post-World War II era. It was understood that universities were important actors in production with the knowledge and human capital they produced in the process of restructuring and there was a pressure to establish relations with the industry. During this period, conferences and seminars on university-industry cooperation were organized under the leadership of the United Nations, the National Science Foundation and various science and technology centers. The theme of university-industry cooperation began to become widespread in academic studies in the 1970s (e.g. Baer, 1976; Rahn et. al., 1976; Baer, 1978; Brodsky, 1979; David, 1979; Drucker, 1979; Baer, 1980).

When it comes to the 1980s, academic interest has evolved into transferring knowledge produced by higher education institutions to industry, particularly small and medium-sized private companies, which later would increase the innovation and competition power of the economy (Florax, 1992: xiii). This period is an important milestone for the world's economic system. Meanwhile, this process of change has also created changes in the approaches to universities. Within this context, the 'Bayh-Dole Act' enacted by the United States Congress in 1980 created significant consequences. This legislation allowed the transfer of the intellectual property rights of inventions/innovations developed by universities in research projects conducted with federal funds.

Academic studies dealing with the universities' impacts on knowledge (Type 2) in parallel with the agenda at the time began to increase after the 1980s (e.g. Malecki, 1981; Fowler, 1984; Cerych & Frost-Smith, 1985). However, there was a dramatic increase in the studies on this subject concurrently with the theories on internal growth which rose in the 1990s (e.g. Goldstein & Luger, 1990; Mansfield, 1991; Malecki, 1991; Luger & Goldstein, 1991; Florax & Folmer, 1992; Beeson & Montgomery, 1993; Parker & Zilberman, 1993; Bania, Eberts, & Fogarty, 1993; Feldman, 1994; Anselin et. al., 1997; Sanchez & Tejedor, 1995; Etzkowitz, 1997; Mansfield, 1998; Goddard & Chatterton, 1999). Starting in the 1980s and intensifying in the

1990s, studies on the human capital, knowledge economy and innovations have continued to increase in the last 20 years.

The number of Type 2 studies has augmented considerably over the last 20 years in the English literature, beginning with the Type 1 impacts of the universities. As a matter of fact, Type 1 studies are "outdated". However, Type 1 studies dominate the academic agenda of developing countries as the Type 2 impacts of the universities do not arise in these countries.

Literature in Turkish

There is no common opinion about the concept and content of university in Turkish literature. According to Seha Meray (1970: 14), it is necessary to appreciate the different understandings of the concept of university in different countries. This is because universities, just as other educational institutions, reflect the economic and social structure, political and cultural aspirations, successes and contradictions of the society they coexist with. In addition, different university concepts adopted in various countries and the duties and applications expected from the universities have been questioned, especially in the last few years. Accordingly, new concepts, definitions and aims are sought in each country's own conditions. Besides, universities and society are requested to comply with these new efforts. In terms of Turkey, university is a Western-based institution. The university concept was "imported" by the Ottoman Empire in the Period of Defeat and Dissolution. The aim of the Ottoman' Darulfunun, the first university of Turkey, was described by the then Minister of Education Safvet Pasha as "*to keep up with the pace of progress of European states*" (for the Ottoman' independence) (Berkes, 2012: 237). Darulfunun, which underwent a reform process in the early periods of the Republic, was renamed as Istanbul University (1933). There were some emphases on the mission of the university. Some of them were to "*make research on the fields of knowledge, to try to expand and spread national culture and high knowledge, to help adult and mature people train for the state and the country service*" in the 1934, Establishment Regulation of Istanbul University (Official Gazette No. 2837, Establishment Regulation of Istanbul University). It can be understood from the above citation that what the university concept in Turkey meant in the first years of the Republic or how it was applied to the university.

The problem of development which emerged after the World War II also became a subject of debate in the peripheral countries such as Turkey. According to public investment policies where balanced and unbalanced development models were dominant in this period, the question of where universities would be established and what their mission would be reflected on academic writings (e.g. Keleş, 1971; Tekeli, 1972; Varış, 1976) and columns). In March 1971, İstanbul branch of the TMMOB's (Union of Chambers of Turkish Engineers and Architects) held a seminar on "The Problem of Universities in Nonmetropolitan Cities". The content of the university-related agenda can also be understood by reviewing public policies of the period. In the 1970s, many new universities were established in Turkey, especially in regional centers. In every peri-

od when the idea of establishing a mass university is on the agenda, there have been studies done on the location choice and the mission of the universities. 1992 and 2006 are two important dates for Turkey's universitization process. 23 new universities were established in 1992 while 56 new ones were established in 2006 and later. The number of studies related to where these universities, being public investments, would be established and their impacts on the region increased along with the number of universities.

Type 1 Studies (Expenditures and Employment Impacts)

The social and economic impacts of the universities began to be studied academically in Turkey since the 1990s, whereas it started in the English literature in the 1960s (Figure 2). Saliha Aydemir's study, *"Impact of Universities on Local/Regional Economy and Social Life"*, presented at the 27th European Regional Science Association (1987) is the first study including a declaration (Aydemir, 1987). It is stated that "Keynesian Multiplier" was used in this study which is designated from the references of Florax (1992). Hence, this proves that the study focused on expenditures and employment. However, a similar study was published in Turkey in 1994. Yüksel Kavak studied on the universities' general environmental impacts in 1990 and Mehmet Şahin studied on designating the contribution of the students in Eskişehir Anadolu University to province's economy in 1991. Studies on the universities' social and economic impacts on the environment have begun to increase since the second half of the 1990s. (e.g. Durman, 1998; Bilginoğlu et al., 1999; Albeni, 2000; Erkekoğlu, 2000; Çınar & Emsen, 2001; Karataş, 2002; Tuğcu, 2003). 41 new public universities were established with the laws enacted in 2006, 2007 and 2008, whereas 15 new ones were established under the laws enacted in 2010, 2011 and 2015. The number of universities established in the last decade is more than the number of universities established in 83 years. The universities' impacts have become more of a subject of debate and the number of studies carried out in this area began to increase rapidly after 56 new universities were established (e.g. Sargın, 2007; Işık, 2008; Çalışkan & Sarış, 2008; Görkemli, 2009; Akçakanat, Çarıkçı & Dulupçu, 2010; Öztürk, Torun & Özkök, 2011; Şen, 2011; Selçuk, 2012;

Gözener & Sayılı, 2012; Demireli & Taşkın, 2013; Sağır & İnci, 2013; Ergun, 2014; Kaya, 2014; Çayın, 2015; Savaş-Yavuzçehre, 2016). The number of such studies increased because the number of universities escalated and the newly established

universities are located in the most socially and economically underdeveloped provinces. However, the majority of studies focused on the "measurable" impacts of the universities such as expenditures and employment as they were conducted by researchers from disciplines of economics and business. There are also studies done by researchers from other disciplines (geography, sociology, communication, planning, etc.) even if there are few. This diversity has broken the uniformity of the studies related to the universities and resulted in discovery of more different impacts. In particular, studies done by geographers (Aydın, 2002; Sargın, 2007; Işık, 2008; Çalışkan & Sarış, 2008; Akengin & Kaygı, 2013; Toprak, 2017) and sociologists (Yılmaz, 2011; Sağır & Dikici, 2011; Ergun, 2014; Kaya, 2014) focus on expenses and employment as well as the impacts on migration, population exchange and housing market.

Type 2 Studies (Knowledge Impacts)

The universities' impacts on knowledge will be evaluated based on such themes as innovation, patent, human capital, university-industry cooperation.

Studies in this field are usually restricted in the theoretical framework since the Turkey's production infrastructure is not technology-intensive. While the studies in the English literature are based on field studies and findings, the Turkish literature generally developed through problems and petitions. All five-year development plans, which have been designed every five years since 1963, mentioned university-industry cooperation and listed what is required to be done. However, studies on the basic concepts of the knowledge economy such as university-industry cooperation, patent, innovation have been limited over the last years. In a more accurate sense, the Turkish literature is full of theoretical considerations about the concepts while the number of empirical studies based on data and providing specific findings is rather low.

Studies in Turkish on the universities' impacts on knowledge began concurrently with the global trend at the beginning of the 1980s (Figure 2) (e.g. Akcasu, 1987; Güleç, 1987; Külahçı, 1988; Akdoğan, 1989; Küçükçirkin, 1990). The number of such studies has increased over the years. Studies conducted in Turkish literature are generally at the theoretical level and most of them are model development studies. This proves that university-industry cooperation in Turkey, with few exceptions, is at the bottom of the ladder.

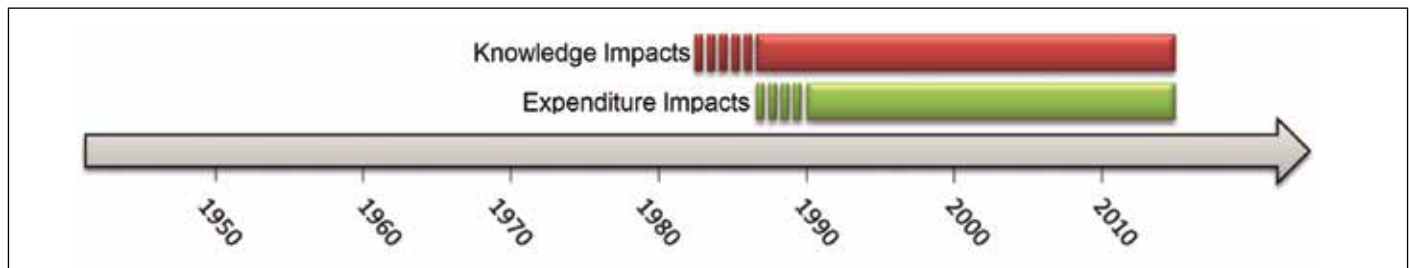


Figure 2: Chronological Table of Studies Related to Universities' Impacts on Expenditure/Employment (Type 1) and Knowledge Economy (Type 2) in the Turkish Literature.

CONCLUSION

The way in which the discussion, and address of any object/subject in social sciences changes over time. The content and academic research method of the university, which is a social production, has undergone a transformation parallel with the developments in the world. This transformation can be addressed in many ways. The aim of this study is to “read” the functional transformation of the universities through literature with the accessible sources. Some results were obtained on differentiation in the global and local agenda through classification/evaluation of academic studies in English and Turkish related to the universities’ impacts. It is encountered that there are similarities as well as differences between the English and Turkish literature thanks to the evaluation of the studies on the universities’ impacts.

Studies in English that address the universities’ impacts began in the 1960s. The first studies were usually Type 1 studies. Neo-liberal policies were introduced in the 1980s along with the changes in the world and expectations from universities changed. Within this framework, studies on the universities’ impacts evolved into Type 2 studies. Therefore, the number of Type 2 studies began to increase. Turkish literature has developed in a different direction from the English literature. In the 1960s and 1970s, the focus was more on the subject of location choice in the Turkish literature related to the universities. Its reason is that many universities were established in this period. Since the 1980s, Type 2 studies have begun to be done in the Turkish literature in parallel with English literature. Whereas, Type 1 studies have become a subject of debate since the 1990s. The reason for this is the fact that 23 universities, established by a law in 1992, were established in peripheral cities. The relationship between the universities and the development became a subject of debate and studies on this subject began in this period. At least one university exists in every province as of new universitization process in 2006 and afterwards. The vast majority of the provinces where the universities were established in the last 15 years rank in the last places according to the socio-economic development index. This situation made the universities more connected with local development than ever. The universities are almost identified with the expenditures and employment it will provide rather than their education and research mission. As a matter of fact, politicians mention universities as important institutions when listing their actions.

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