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Abstract

Education holds a significant position at the core of social, economic, technological, and cultural development. Universities play a crucial role within the education system by contributing to the global pool of knowledge. With the Renaissance and reform processes, the concept of universities underwent revision, emphasizing the autonomy of universities, preservation of the prestige of scientists, and prioritizing research over teaching. Research universities emerged as new institutions within the scientific community. Research universities serve as institutions that facilitate societal development, progress, and change. This study provides an analysis of the emergence of research universities, the development process in leading countries, and an overview of research universities in Türkiye. A literature review and document analysis were conducted, examining scientific publications in databases such as Web of Science, ERIC, Google Scholar, Dergipark, and the YÖKTEZ. A critical evaluation was conducted regarding the values and practices reflected in the establishment policies of research universities. In general, it is emphasized that determining the core mission of research universities is of great importance, as well as increasing funding and resource diversity, reducing non-research workloads for university staff, and enhancing postgraduate education and inter-institutional cooperation.

Keywords: Policy analysis, Research universities, Postgraduate education, Fund diversification, Inter-institutional cooperation

Introduction

Nations shape various fields such as governance, religion, law, healthcare, trade, art, and artisanship according to their cultures, traditions, worldviews, and lifestyles, forming them under different names and institutions to meet their needs throughout different periods. Although there are differences in content, method and quality between these institutions, they generally form valid and functional higher education institutions by learning from or being influenced by each other. When these educational institutions lose their validity and functionality in the world of society and culture, they usually transform into a different higher education institution and thus continue their existence by training people equipped especially in the fields of administration, law, health and religion (Kenan, 2015). The responsibility entrusted to higher education institutions by society shapes expectations and necessitates a constant renewal mindset.

The importance given to education lies at the foundation of social, economic, technological, and cultural developments. Universities are among the most important institutions serving society's education. Universities contribute to humanity by addressing scientific and technical issues, guiding the country's potential towards development based on contemporary scientific foundations. Additionally, universities established with the aim of producing highly knowledgeable individuals competent in technology usage serve as guiding institutions for humanity (T.C. Başbakanlık, 1992). In today's technologically advancing and globalized world, universities provide positive contributions to the common scientific

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pool, both for the countries they are located in and the world at large. Universities occupy positions where they both influence and are influenced during this contribution process. Global needs directly impact the outputs of universities.

The dynamics of the knowledge society and economy worldwide have triggered a transformation process in higher education. With knowledge becoming the most important element in the production process, the role and expectations of higher education have significantly increased. Higher education institutions are expected to produce human resources with the qualities and diversity required by the knowledge society. Furthermore, higher education institutions are expected to produce graduates, generate technology, engage in knowledge-intensive activities, meet lifelong learning needs, and provide services to society (Çetinsaya, 2014). As the importance of higher education increases for societies, economies, and individuals, demands and expectations from higher education institutions have increased and diversified (Schleicher, 2006). Research and development (R&D), innovation, and entrepreneurship are the driving forces of economic growth in the knowledge society and economy. Therefore, universities are expected to fulfill their new functions through collaboration with industry and develop new forms of relationships with all stakeholders. As competition intensifies, universities face pressure to "commercialize knowledge" while competing for more patents, projects, and R&D budgets (Çetinsaya, 2014).

The dominance of neoliberal policies is felt in universities as well, bringing about radical changes. The task assigned to universities in the process of producing the required human resources plays a significant role in sustaining the dominant paradigm. Universities that prioritize project-based operations gain advantages and support their budgets by finding funding. Universities with increased budgets continue their new project cycles by increasing R&D investments and incentivizing their academics. This chain reaction created has a guiding effect on other universities.

It can be observed globally that universities have reached a level of theoretical homogeneity. In other words, almost all universities nowadays are established towards similar objectives and share the same goals. The source of this homogeneity among universities is not a compromise but rather a surrender. The current state of Western universities has brought up the need for a revision in education globally, and as a result, universities established with inspiration from the West have rapidly become widespread (Antalyalı, 2007). Research universities are educational institutions established following this trend. These universities are of Western origin and are important institutions with their qualified human resources, knowledge accumulation, knowledge transfers, and contributions to societal well-being. Research universities can be at the forefront of societal development, change, and renewal through their outputs (TAÜG, 2016). Analyzing the establishment policies of research universities can enable us to examine the emergence and historical transformation of the concept of university, as well as make projections about future developments.

Method

This study aims to analyze the establishment policies of research universities using literature review and document analysis methods. Also referred to as a review study, this method is important for providing detailed information on a specific topic and tracking developments in the field (Herdman, 2006). Document analysis is a method based on accessing and examining materials containing information related to the researched topic (Karasar, 2011). In this regard, scientific publications containing studies on research universities were accessed through databases such as Web of Science, ERIC, Google Scholar, Dergipark, and the YÖKTEZ. In these databases, the concept of "research university" was used as a keyword and all studies were analyzed in the context of the establishment processes of research universities. Web of Science includes three different indexes: Social Science Citation Index (SSCI), Extended Science Citation Index (ESCI) and Arts and Humanities Citation Index (AHCI) (Norris & Oppenheim, 2007) and is a highly reliable international database. ERIC is accepted among the educational sciences field indexes for academics in Türkiye (Altınsoy & Boyraz, 2011). YÖKTEZ is a thesis database for Türkiye. Master's and doctoral theses can be fully accessed through this database. The Dergipark database is a resource that offers free access to the publications of many national and international journals. This database was used to access articles on the establishment of research

universities in Türkiye. Additionally, reports that could serve as references for relevant policies were obtained from the official websites of countries. As a result of the literature search, detailed information on Germany and the United States, countries that have had significant impacts on the establishment and development of research universities, was presented, and their connection to the establishment process of research universities in Türkiye was discussed.

Theoretical Background

In this section, the emergence and historical transformation of the concept of university, the establishment of research universities, the policies of research universities in Germany, the policies of research universities in the United States, global statistics on research universities, and the policies of research universities in Türkiye are presented within the context of the reviewed literature.

The Concept of University and Its Historical Transformation

Before the emergence of the concept of university, schools that could be classified as higher education institutions were responsible for the task of educating qualified individuals. The Academy established by Plato in the 4th century BC can be considered the first institution in this regard. The Lyceum, founded by Aristotle, one of Plato's students, became one of the important schools in Athens. After Aristotle, Athens lost its priority in science, and Alexandria and Rhodes emerged as prominent centers. Particularly, the Library of Alexandria was a great repository of knowledge with its vast collection of books. The city of Alexandria became the most important center of higher education during that period with the migration of scholars from Athens (Saklı & Akbulut, 2017). Over the years, other cities that pioneered in science were added to these centers, and Antioch, Baghdad, Istanbul, and Harran became significant centers of knowledge.

The origins of the modern concept of university can be traced back to the Middle Ages. The term "university" originally meant a community coming together for common interests, synonymous with the term "guild" (Antalyalı, 2007). The interaction between medieval Europe and Islamic civilization led to a rapid urbanization process. The idea of conducting research and establishing a hierarchy among religious institutions formed the basis for the concept of universities (Versan, 1989). The University of Bologna, established in 1088, the University of Paris, founded in 1150, and the University of Oxford, established in 1167, can be considered as the first examples.

In the earliest universities, the main fields of study were medicine, law, theology, and philosophy. These universities focused on specialization (Donelly, 2002). Some educators received charters from the church to provide education open to everyone and, with the recognition they gained, admitted students from all over the European continent. Their main aim was to educate theologians, jurists, and medical doctors (Wissema, 2009). These universities, referred to as the first generation, laid the foundation for the modern university. The beginning of the modern university can be seen as the process initiated by Jeremy Bentham in England, aiming to ensure access to education for people from all levels of society. The differences between the first-generation universities and modern universities are listed in Table 1.

Table 1. Comparison of first generation and modern universities

	First Generation University	Modern University
Target	Education	Education-Research
Role	Defending the truth	Exploring Nature
Method	Scholastic method	Modern Science
Organization	Faculties and School	Faculties
Administration	Chancellor	Academics

Note: Reproduced from the book Towards the third generation university (source: Wissema, 2009)

As seen in Table 1, while the goal of the first generation universities was education, the goal of the modern university has become education and research. The role of defending the truth has turned into investigating nature, and it has started to do this not with scholastic methods but with modern science. Centralized management was replaced by academic staff.

Wilhelm von Humboldt's approach has facilitated a remarkable leap for modern universities (Reed, 2004). This approach is also referred to as the second generation of modern universities.

Establishment of Research Universities

The periods of Renaissance, Reformation, and Enlightenment in Europe marked significant turning points for universities. Existing universities resisted the acceptance of new scientific disciplines and methods and were resistant to change. In response, new universities were established to apply new scientific approaches. These universities, with limited influence from the Church, operated primarily under state control (Çiftçi, 2010). In Germany, under the leadership of Wilhelm von Humboldt, the Humboldt Universities were established to create a research infrastructure by establishing chairs led by professors. In this model, the university was shaped as an institution with the ability to self-govern in scientific and organizational terms, while being subject to financial control (Timur, 2000).

Humboldtian Model

The establishment of modern research universities is based on the Humboldt University, which emphasized research over education and received support from public resources. Founded in 1811, this university is an institution where the prestige of scientists is high and job security is ensured. Academic staff work as public servants in this institution and have academic freedom in intellectual terms (Altbach, 2011). This structure, built on German idealism, regards the production of knowledge and adherence to research requirements as the main responsibilities of universities. According to Humboldt, universities have a fundamental responsibility to not only preserve and transmit knowledge but also to produce knowledge (Hartwig, 2004).

Research universities are institutions where governance is based on the principle of meritocracy, academic personnel are accepted based on merit, promotion criteria are of high quality, and attention is paid to the citation values of academics. Student admission processes are also conducted with similar sensitivity. Research universities require autonomy, academic staff with a low teaching load, qualified graduate students, academic freedom, well-equipped research facilities, and financial support from the public and private sectors (Öztürk, 2019). With these characteristics, research universities have implications for university systems all over the world. The effects they create differ between countries. For example, while it had a strong impact on the USA, the rising and modernizing country of the period, it had a limited impact on countries such as the UK and France, as they were countries with their own models (Amos et al., 2008).

Research University Policy in Germany

The Humboldt University, established under the leadership of Wilhelm von Humboldt, has had a significant impact on the transformation of universities in Germany. Initially founded as the University of Berlin, King Wilhelm of Prussia supported this university. Consequently, in the following years, it was renamed the Friedrich Wilhelm University, and after World War II, it became known as Humboldt University. The university has been home to prominent scientists such as Hegel, Schopenhauer, Einstein, Planck, Marx, and Engels.

The Enlightenment concepts of utility and industry shaped the restructuring of German universities in the 18th century. The traditional understanding of universities faced criticism in terms of its legal and social composition (Amos et al., 2008). German universities with a Humboldtian approach, which focus on producing useful and practical knowledge, embrace four ideals: academic freedom, the unity of teaching and research, comprehensive research, and the priority of basic science for achieving universal knowledge (Ash, 2006).

With the liberation from church pressure, the research university approach freed science and academic work from encyclopedic traditions and aligned them with research. The new type of professor defined by Humboldt was an expert, a researcher, and a scientist. The formula of the "unity of teaching and research" began to represent an ideal directed towards the concept of autonomous citizenship rather than the needs of the state. Therefore, the new type of professor had to exist in a competitive environment. This transformation has brought about not only the transformation of academic staff but also the

transformation of students. Students have been freed from traditional standardized exams and instructional requirements (Amos et al., 2008).

After World War II, the restructuring of education became a significant topic of debate in Germany, and through analysis, it was determined that universities maintained a healthy structure at their core. It was agreed to reestablish the pre-1933 structures and make constitutional regulations (Teichler, 1990). The Science Council (Wissenschaftsrat), a scientific and higher education advisory body, identified reform needs in the context of creating a qualified workforce and social justice approaches. Recommendations were made to develop physical infrastructure and increase competition (WR, 2007, cited in Amos et al., 2008). Following these recommendations, German universities implemented reforms, and new universities were established accordingly.

Although the 20th century brought about certain changes, the Humboldtian ideal continues to persist. Chair professorships are shaped around the concept of genius, and individuals at the peak of their careers contribute to organizations in the form of maximum impact (Zippel, 2017). In this situation known as the Harnack principle, the chair professor has full authority over personnel recruitment, allocation of research budgets, and the course of scientific activities within the institute. This autonomy and excellence contribute to the prestige of universities (Peacock, 2016). The German example provides significant insights into the founding principles of research universities.

Research University Policy in America

When looking at the university structures in the United States, the influence of English universities can be seen as early as the 17th century, and the influence of German universities in the 19th century. However, American universities developed their own unique characteristics in the second half of the 19th century, and by the 20th century, they began exporting knowledge and contributing directly to the economy (Jones, 1992). American research universities have become important centers for research and knowledge transfer in all disciplines (Atkinson & Blanpield, 2008).

The American research university model considers serving society as its fundamental function. It implements a more liberal-based departmental approach and a hierarchical seating system in its organizational structure. Governance methods are applied, and administrative issues are conducted through participatory decision-making. During the Cold War, significant efforts were made, particularly by research universities, leading to additional research budgets provided by the U.S. Department of Defense. This resulted in the creation of a differentiated academic system in many states. American research universities have become the international "gold standard" with these characteristics (Altbach & Salmi, 2011).

American universities play a significant role in the global proliferation and development of research universities (Atkinson & Blanpield, 2008). The first research university in the United States is John Hopkins University, founded in 1876. During World War II, the collaborations between research universities and the government led to significant achievements, and this cooperation continued to develop after the war. By the 2000s, the number of American research universities exceeded 100 (National Research Council, 2012). The American research university model differs from the European model in certain aspects. The emphasis on community service, the implementation of discipline-based democratic practices instead of chairs, and the participatory governance approach can be considered as these differences (Altbach, 2011).

The American research university model has developed with respect to the country's conditions, resulting in diversity among states. Its pluralistic structure, various sources such as donations, federal funds, state funds, and tuition fees, and the high competitiveness in undergraduate and graduate research have created a highly productive system. This productive structure has ensured that researchers remain competitive. As a result, American research universities have been more frequently used as a reference by other countries compared to European research universities (Erdoğmuş, 2018).

World Statistics of Research Universities

Research universities have become widespread throughout the world, particularly in Europe and the United States. These universities, where successful academics work, focus more on graduate education rather than undergraduate education, and they have been emphasizing the importance of gaining global recognition in recent years. Due to different practices between countries, it is not possible to provide the exact number of research universities. However, the United States, which has 4,800 higher education institutions, has approximately 150 research universities. In India, out of around 18,000 higher education institutions, 1,800 can be considered research universities, while in China, out of approximately 5,000 institutions, 100 can be classified as research universities (Erdoğmuş, 2018).

There are different platforms that rank universities around the world according to specific criteria. Examples of these rankings include Shanghai Ranking, Times Higher Education and Topuniversities. The data provided by these platforms are frequently used in research as reliable sources. In this study, in which research universities are analyzed, data from the QS World University Rankings report were used since it is important to reach the ratios of university students.

Table 2. World University Rankings (Top 50 Universities)

Rank	University	Assessment Score
1	Massachusetts Institute of Technology (MIT)	100
2	University of Cambridge	98.8
3	Stanford University	98.5
4	University of Oxford	98.4
5	Harvard University	97.6
6	California Institute of Technology (Caltech)	97
7	Imperial College London	97
8	UCL	95
9	ETH Zurich	93.6
10	University of Chicago	93.2
11	National University of Singapore (NUS)	92.7
12	Peking University	91.3
13	University of Pennsylvania	90.6
14	Tsinghua University	90.1
15	The University of Edinburgh	89.5
16	EPFL	89.2
17	Princeton University	89.2
18	Yale University	89
19	Nanyang Technological University, Singapore	88.4
20	Cornell University	87.2
21	The University of Hong Kong	87
22	Columbia University	86.7
23	The University of Tokyo	85.3
24	Johns Hopkins University	85.1
25	University of Michigan-Ann Arbor	84.4
26	Université PSL	83.8
27	University of California, Berkeley (UCB)	82.7
28	The University of Manchester	82.3
29	Seoul National University	82.2
30	Australian National University (ANU)	82.1
31	McGill University	81.9
32	Northwestern University	81.8
33	The University of Melbourne	81.6
34	Fudan University	81.5
35	University of Toronto	81.5
36	Kyoto University	81.4

37	King's College London	81.2
38	The Chinese University of Hong Kong (CUHK)	80.6
39	New York University (NYU)	80.3
40	The Hong Kong University of Science and Technology	79.8
41	The University of Sydney	79.6
42	KAIST - Korea Advanced Institute of Science & Technology	79.3
43	Zhejiang University	79.3
44	University of California, Los Angeles (UCLA)	78.7
45	The University of New South Wales (UNSW Sydney)	78
46	Shanghai Jiao Tong University	77.4
47	University of British Columbia	77
48	Institut Polytechnique de Paris	76.8
49	Technical University of Munich	76.4
50	Duke University	74.8

Note: QS World University Rankings 2023: Top global universities (source: https://www.topuniversities.com/university-rankings/world-university-rankings/2023)

The ranking is predominantly composed of universities from the United States, with universities from the United Kingdom, Switzerland, Canada, South Korea, China, Japan, Germany, and France also included. All universities in the top 10 of the lists are institutions classified as research universities. The proportion of graduate students, the number of international students, and the proportion of international students in graduate education are important data for research universities. In this context, the relevant data from the global university ranking is presented in Table 3.

Table 3. Student Ratios of the Top 10 Universities

Rank	University	Total Number of Students	Ratio of Graduate Students	Number of International Students	Ratio of International Graduate Students
1	Massachusetts Institute of Technology (MIT)	11035	61,00%	3627	83,00%
2	University of Cambridge	20871	37,00%	7865	60,00%
3	Stanford University	14518	59,00%	3318	80,00%
4	University of Oxford	27972	44,00%	9024	70,00%
5	Harvard University	21877	74,00%	5379	88,00%
6	California Institute of Technology (Caltech)	2240	60,00%	683	90,00%
7	Imperial College London	20191	45,00%	12332	51,00%
8	UCL	41194	48,00%	25076	50,00%
9	ETH Zurich	20892	53,00%	8420	74,00%
10	University of Chicago	16325	57,00%	4442	76,00%

Note: QS World University Rankings 2023: Top global universities (source: https://www.topuniversities.com/university-rankings/world-university-rankings/2023)

When the student ratios of the top 10 universities are examined, it is seen that MIT, which ranks first, has a graduate student ratio of 61% and an international graduate student ratio of 83%. For all top-ranked universities, international graduate students correspond to high proportions. This can be characterized as a factor that directly affects the quality of research universities.

Overall, it can be observed that the proportion of graduate students is quite high, especially with a significant presence of international students pursuing graduate education in the relevant universities. The number of patents can be considered an important indicator of success for research universities. According to the WIPO (2022) statistics on patent applications in 2021, China, the United States, and Japan are ranked at the top. Singapore, Finland, and Türkiye are listed among the countries that have shown significant momentum by increasing their patent applications by more than 10% in 2021. Universities actively engage in productive activities in patent production.

Table 4. Ranking of Patent Producing Universities

Rank	University
1	University of California
2	Massachusetts Institute of Technology
3	The University of Texas
4	King Abdulaziz University
5	Stanford University
6	Purdue Research Foundation / Purdue University
7	Harvard College, President, and Fellows
8	Arizona State University
9	California Institute of Technology
10	Tsinghua University
11	Johns Hopkins University
12	Wisconsin Alumni Research Foundation / University of Wisconsin
13	University of Florida Research Foundation, Incorporated
14	University of Michigan
15	University of Pennsylvania
16	University of Minnesota
17	Cornell University
18	University of Pittsburgh
19	Korea Advanced Institute of Science and Technology (KAIST)
20	University of Maryland

Note: National academy of inventors (source: https://academyofinventors.org/publication-type/top-100/?issue=current NAI, 2018)

When examining the list, it is evident that once again, American universities are prominent in the top rankings. Research universities contribute positively to their respective countries through their output-oriented work. It is a natural consequence for countries to provide supportive measures in their higher education policies to develop research universities.

Türkiye's Research University Policy

Countries try to determine the missions of research universities in a way that distinguishes them from other types of universities by emphasizing applied research and research development (Leporia & Kyvik, 2010). In this context, the establishment of research universities in Türkiye began in 2017. The "Mission Differentiation and Specialization Project," initiated by the Council of Higher Education (YÖK), aimed to enable efficient use of infrastructure and human resources in higher education and increase international impact (YÖK, 2017). In the process of identifying research universities, models of research universities worldwide were adopted, and universities were evaluated based on indicators used in those models. Following the evaluation reports and interview processes, ten principal and five candidate universities were identified as research universities (YÖK, 2017).

The criteria for determining research universities were established as follows (YÖK, 2020):

1. Number of publications indexed in SCI (Science Citation Index)
2. SCI-indexed publications with international collaboration
3. Scientific publication scores
4. Citation counts
5. Number of projects
6. Project budgets
7. Project budgets with international collaboration
8. Number of doctoral graduates
9. Number of patents
10. Number of faculty members receiving awards from TÜBA (The Science Academy of Türkiye)
11. Presence of a Technology Transfer Office (TTO)
12. Participation in the YÖK 100/2000 doctoral scholarship program.

Along with the mentioned criteria, the mission, vision, goals, research budget, human resources, and research infrastructure of the university were also used as criteria in the establishment of research universities. There are certain aspects that research universities should prioritize in order to achieve the objectives involved in the establishment of research universities (YÖK, 2020).

- Universities should motivate their academic and administrative staff to conduct research and provide the same level of motivation to their students.
- Necessary support should be provided to researchers by the university.
- Research should be conducted within the framework of the Research Excellent Framework (REF), which has criteria for excellence in order to carry out high-quality research.
- The organizational structure of academic departments should be strengthened.
- Access to funds from national, international, and industrial organizations should be ensured.
- Graduate student admissions should be made based on high criteria.
- Priority should be given to publishing articles in Q1 journals.

In 2017, 10 principal and 5 candidate universities acquired the status of research universities, and by 2023, the total number of research universities reached 23, including 20 state and 3 foundation universities. The latest research university performance ranking and the current status of universities that have obtained the status of research universities in Türkiye can be seen.

YÜKSEKÖĞRETİM KURULU

PERFORMANCE RANKING OF RESEARCH UNIVERSITIES IN 2021

	University	Rank	Total (100)	Capacity (40)	Quality (40)	Co-op (20)
A1	ORTA DOĞU TEKNİK ÜNİVERSİTESİ	1	**85,87**	32,57	36,54	16,76
	KOÇ ÜNİVERSİTESİ	2	**70,05**	19,97	34,63	15,45
	SABANCI ÜNİVERSİTESİ	3	**69,03**	15,59	37,15	16,29
	İSTANBUL TEKNİK ÜNİVERSİTESİ	4	**68,63**	27,75	27,18	13,70
	İHSAN DOĞRAMACI BİLKENT ÜNİVERSİTESİ	5	**66,33**	23,93	27,61	14,79
	BOĞAZİÇİ ÜNİVERSİTESİ	6	**63,25**	21,29	28,82	13,14
A2	İZMİR YÜKSEK TEKNOLOJİ ENSTİTÜSÜ	7	**57,94**	25,61	19,14	13,19
	İSTANBUL ÜNİVERSİTESİ	8	**54,72**	21,54	23,70	9,48
	YILDIZ TEKNİK ÜNİVERSİTESİ	9	**50,87**	23,45	18,06	9,36
	HACETTEPE ÜNİVERSİTESİ	10	**50,26**	21,04	22,59	6,63
	GEBZE TEKNİK ÜNİVERSİTESİ	11	**50,14**	20,35	19,69	10,10
	ANKARA ÜNİVERSİTESİ	12	**45,17**	17,60	18,10	9,47
	EGE ÜNİVERSİTESİ	13	**45,06**	20,76	14,42	9,88
	ERCİYES ÜNİVERSİTESİ	14	**44,85**	15,45	21,36	8,04
	İSTANBUL ÜNİVERSİTESİ-CERRAHPAŞA	15	**43,47**	20,88	13,53	9,06
	GAZİ ÜNİVERSİTESİ	16	**41,06**	19,88	15,06	6,12
A3	FIRAT ÜNİVERSİTESİ	17	**36,73**	10,08	20,37	6,28
	MARMARA ÜNİVERSİTESİ	18	**33,03**	11,42	13,35	8,26
	DOKUZ EYLÜL ÜNİVERSİTESİ	19	**32,09**	11,98	14,11	6,00
	ATATÜRK ÜNİVERSİTESİ	20	**30,55**	12,55	13,68	4,32
	ÇUKUROVA ÜNİVERSİTESİ	21	**28,79**	13,91	9,47	5,41
	KARADENİZ TEKNİK ÜNİVERSİTESİ	22	**28,55**	11,62	12,11	4,82
	BURSA ULUDAĞ ÜNİVERSİTESİ	23	**26,20**	7,66	10,01	8,53

Figure 1. Research Universities Performance Ranking for the Year 2021 (source: YÖK, 2022a; Fırat University, 2022)

In the performance ranking of research universities published by the Council of Higher Education in 2021, Middle East Technical University (ODTÜ) achieved the highest score in terms of expectation criteria. Of the six universities in the group with the highest score, which is characterized as A1, three are public universities and three are foundation universities. The fact that all three foundation universities, which are defined as research universities by the Council of Higher Education (YÖK), are in the top rankings can be considered as an important finding.

The University Monitoring and Evaluation General Report for 2022 provides significant results regarding citation counts obtained in Q1 journals, which is considered an important criterion for research universities (YÖK, 2022b).

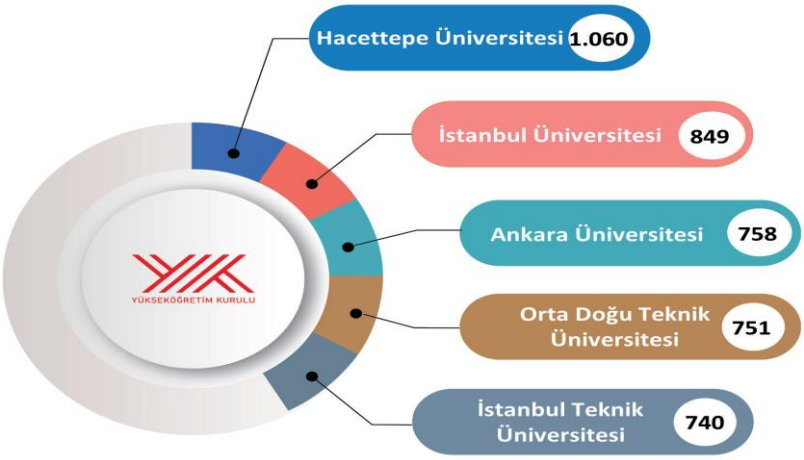

Figure 2. Universities with the Highest Number of Citations in Q1 Journals (source: YÖK, 2022b).

The universities shown in Figure 2 are among the first universities to be granted research university status in 2017. Publishing in Q1 journals is an important evaluation criterion for the academic world. In this respect, the fact that the universities that publish most frequently in Q1 journals among Turkish universities are classified as research universities shows that these institutions have high research qualifications.

Research universities in Turkey are institutions that have been in existence for many years. This leads to deviations from the qualities that research universities should have. Looking at examples from around the world, research universities usually have a student population of around 20,000. In Turkey, these numbers are much higher. In addition, while research universities should have a high proportion of graduate students, this criterion is not met. These universities even offer associate degree programs, providing a significant student diversity (Erdoğmuş, 2018).

A Critical Analysis on Research University Establishment Policies

Research universities, brought about by the emergence of the modern university concept, grant students the freedom in terms of curriculum. Despite the granted freedom, certain courses are still mandatory, and the hidden meaning behind these compulsory courses can be interpreted as producing individuals for the benefit of the state (Reed, 2004). This critique could differ for European research universities compared to American universities. This is because American universities, due to their more recent establishment, the absence of a guild tradition among faculty members, and less stringent professional standards compared to Europe (Öztunalı, 2009), carry the promise of being able to conduct more independent science. Particularly, Johns Hopkins University has served as an important example to demonstrate that American universities can break away from conventional judgments (Antalyalı, 2007). When examining the establishment policies of American universities, the understanding of serving the state can be inferred between the lines. Universities that consider contributing to society as their fundamental purpose are built on the understanding of training competent individuals for the modern industry, which has shaped the United States into its current state, and facilitating society's adaptation to this modernity. Especially after World War II, the focus on serving the industry and indirectly the state has significantly increased (Kenan, 2015).

The underlying basis of the Humboldtian understanding is the utilitarian and industrial approach (Amos, 2008), which can indicate the consistent formation of establishment policies for both European research universities, especially Germany's university transformation, and American research universities. However, this could be presented as a contradiction for the other meaning assigned to research universities, which is to promote free science and ensure the universal advancement of knowledge. The dominance of state objectives in a concealed manner could raise doubts about the impartiality of conducted research and obtained results.

Starting from the 20th century, universities have rapidly globalized and transformed into centers of the knowledge industry, encountering new opportunities and threats (Kenan, 2015). While globalization can be seen as a positive development for universities to become more compatible with establishment policies, the transfer of talented academics can be characterized as brain drain. At the same time, globalization has led to a decrease in the proportion of resources allocated to universities by the state, and the emergence of different actors as financiers. This implies that universities can become influenced by market actors (Tekeli, 2003).

In Türkiye, the lack of clear definition for the roles of research universities is expressed as a significant problem (Balyer & Özvural, 2021; Gülbak, 2020). Diversification of financial resources, global recruitments, and the acquisition of new roles by academic staff are necessary for research universities (Mohrman et al., 2008). Despite the rapid restructuring by the Council of Higher Education (YÖK) to establish the concept of research universities, the adaptation has not occurred at the same pace (Gülbak, 2020), which can be considered a criticism of the policy-making process.

The research conducted by Balyer & Özvural (2021) provides important insights into the challenges of research universities in Türkiye. It reveals that the mission of research universities is not well-defined, the process was initiated without the preparation of legal infrastructure, the selected universities face a significant workload due to their existing student burden, resulting in insufficient time for collaborations and research. Additionally, research universities require funding beyond state funding, and the funds received from the state restrict the academic freedom of publications, limiting the scope of research for academics, which contradicts the nature of research universities.

Conclusion and Evaluation

Research universities have a history of two centuries in terms of global examples. They gained significant importance for countries, particularly with the support they provided during World War II. The valuable knowledge and products they generated in terms of industrialization and accelerated development (Atkinson & Blanpield, 2008) have fulfilled the fundamental expectations in the establishment policies of research universities. However, Humboldt's concept of imparting the understanding of autonomous citizenship to research universities (Amos et al., 2008) can be considered to have taken a back seat due to the increased emphasis on utilitarian missions.

In the United States, research universities have been assigned a role to contribute to society. The provision of various funds and the establishment of a competitive mindset for research universities (Erdoğmuş, 2018) have increased the productivity of academics and universities. The number of research universities has rapidly increased, and scientific studies have been globalized. By becoming a pioneer in global science, important scientists have been recruited to American research universities. Again, the number of international graduate students, which is one of the important indicators of research universities, has reached a very high number for US universities.

The diversification of funding sources and the economic independence of universities are considered important for the impartiality of research. However, the large corporations created by the global economic order can cast doubt on this impartiality by becoming powerful financiers of major universities. The free market conditions and the current financial structure tend to influence universities to adopt an approach suitable for the market (Balyer & Gündüz, 2011). While higher education institutions have the task of meeting the needs of the market by producing a qualified workforce and individuals with high knowledge, the role of research and development should be equally maintained (Higher Education Law, 1981). Although research universities continue to engage in production that directly benefits society and the economy, ensuring the continued increase in global scientific knowledge production is the most important task. The impact it creates globally and the fact that many countries have taken action to establish research universities can be considered as indicators of the success of research universities.

In Türkiye, regulations were made in 2017 for the establishment of research universities. When evaluated in terms of examples worldwide, it can be described as a policy that was implemented quite late. Additionally, research universities were determined as a result of the evaluation of existing universities based on specific criteria, rather than being newly established universities (YÖK, 2017). The fact that existing universities already accommodate a large number of students in associate and undergraduate education does not align with the concept of research universities. Research universities should be designed as institutions that prioritize graduate education, where academics have less teaching load and focus on research. Only in this way can their contribution to scientific knowledge and societal production be maximized.

Having an autonomous structure is important for research universities to produce scientific knowledge. In Türkiye, higher education, in general, operates under the control of the Higher Education Council (YÖK), which allows for political authority (Şenatalar, 1993, as cited in Balyer & Gündüz, 2011). The council has many powers, including the power to dismiss individuals from their professions. The supervisory role of higher education has been assigned to the state (YÖK Law, 1981). In this sense, it can be said that the legal infrastructure for the scientific autonomy of research universities in Türkiye is not at the desired level.

One of the factors that enhances the quality of research universities is the high number of academics publishing in Q1 ranked journals and achieving high citation scores. In order to increase the frequency of scientific publications in Turkish universities, measures such as support programs, widespread availability of electronic libraries, academic incentives, and updating evaluation criteria have been implemented. However, Türkiye has a relatively low ranking in international scientific publication rankings (Acar & Bektaş, 2021). Additionally, the number of journals indexed in databases such as SSCI, SCI, and AHCI is also quite low in Türkiye. Structuring research universities according to the fundamental criteria they should possess will enable them to have a greater say in international science. Another challenge expressed for research universities in Türkiye is the need to ensure financial freedom and diversification of funding sources (Balyer & Özvural, 2021). Although the regulations implemented by YÖK (Higher Education Council) have increased state contributions (YÖK, 2020), this improvement has been one-sided. Strengthening collaborations between the private sector, capital owners, industry, and research universities, and enhancing joint production mechanisms can contribute to meeting funding needs and gaining social acceptance for the concept of research universities.

In conclusion, when the establishment policies of research universities in Türkiye are examined, it can be observed that university evaluation criteria are determined based on global examples, but a structuring has been carried out based on existing universities. Insufficient regulations have been made in terms of student load, research faculty, funding needs, legal infrastructure, and clarifying the mission of these universities. These missing regulations hinder the clear definition of the term "research university". It is recommended for higher education administrators and policymakers to conduct re-estimation processes regarding the expected outcomes of the research university policy and to implement structural improvements.

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