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A Bibliometric Analysis of Foreign Academics in Turkish Research Universities

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Abstract

Academic mobility has begun to be discussed more frequently in higher education literature with more internationalized higher education. Since the flow of talent generally occurs from the periphery to the core, it is seen that studies mostly deal with either foreign researchers in developed countries or researchers returning to their developing home countries. However, this study aims to examine the mobility of foreign academics in a reverse direction. Specific to research universities in Türkiye, foreign academics' demographic information, academic qualifications, and contributions to their universities were examined with a bibliometric analysis. The findings were also discussed within the legal framework determined by Turkish authorities regarding the employment of foreign academics. The findings show that (i) the proportion of foreign academics with and without a Ph.D. in research universities is close to each other, (ii) researchers are concentrated in the arts and humanities research, (iii) more than half of the academics have completed their doctoral studies in high-income economies, (iv) less than half of the researchers graduated from universities ranked in the top 500 list of THE World University Rankings, and (v) there is a variation among universities in their contributions to research, citation performance, and graduate counselling. In this respect, the results show that the majority of researchers at research universities are not directly employed with a research orientation, and the legal framework contains caveats that need to be explained for research universities.

Keywords: Academic mobility, Foreign academics, Research university, Human capital, Bibliometric analysis

Introduction

The concept of academic mobility is one of the topics that have been frequently discussed in the literature as higher education became more international. Despite great variation in the definitions, classifications and measurement of academic mobility (Teichler, 2015), the term, in its general form, can be defined as the movement of academics along and across national borders to conduct academic research, teaching, and for professional development (Finkelstein, Walker & Chen, 2013; Kim, 2009; Lee & Kuzhabekova, 2018). Despite the neutral connotation of the concept, academic mobility means two opposites in different contexts. While its positive contributions are mentioned in developed countries as brain gain, denoting deliberate efforts to attract science professionals to a country for academic, research or industrial purposes (Jałowiecki, & Gorzelak, 2004), it is expressed as one of the critical threats, especially for developing countries, that qualified brains go abroad for pull and push factors.

Although much of the existing literature on academic mobility has focused on foreign academics in developed countries (Foote, Li, Monk & Theobald, 2008; Huang, 2018; Kim, Twombly, Wolf-Wendel & Belin, 2020; Lawson, Salter, Hughes & Kitson, 2019; Lin, Pearce & Wang, 2009; Webber & Yang, 2014; Yuret, 2018), only a few studies (Burford, Uerpairojkit, Eppolite, & Vachananda, 2019; Lee & Kuzhabekova, 2018; Seggie & Çalıkoğlu, 2021) investigated the issue of foreign academics in a reverse direction.

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In Türkiye, as a developing country, academic mobility has begun to be addressed in the context of brain drain since the late 1960s (Elveren & Toksöz, 2018), and the subject and research group of the relevant literature has been Turkish scientists who have been educated abroad (Altaş, Sağırlı & Giray, 2006; Güngör & Tansel, 2008; Pazarcık, 2010). However, with a focus on internationalization of higher education in Türkiye, more emphasis is placed upon the international aspect of higher education such as foreign students, foreign researchers and collaboration with international entities. The efforts to make Turkish higher education more international can be found in special government programs to support brain gain and brain circulation.

However, the literature on foreign academics in Türkiye is quite limited with a few studies focusing on the views of foreign academics towards Turkish higher education (Arslan, 2020), foreign staff gaining in Turkish higher education in terms of brain drain (Öz & Laloğlu, 2018), legal issues in the employment of foreign academics (Gök, 2022; Tunçağıl Gümüşlü, 2019), foreign academics' adaptation (İplik & Yalçın, 2017), and contribution to science (Küçükaslan, Yerlikaya & Yiğit, 2018). In addition, recruiting foreign academics as a human capital strategy have been ignored especially in Turkish research universities. Recognizing the paucity of literature in Turkish higher education that addresses the topic, this study aims to examine foreign academics in Turkish research universities which have a priority in internationalization policy implementation of governments by asking the following research questions:

- What are the demographic characteristics of foreign academics in Turkish research universities?
- What are the academic qualifications of foreign academics in Turkish research universities?
- What are the contributions of foreign academics to Turkish research universities?

Research University Framework

Standing at the top of a higher education system, research universities are the gate of international science and scholarship (Altbach, 2009; 2013) by being regarded as a necessity in obtaining a superior position in global competition (Shin, 2009). As the most likely candidates for the top of the university rankings and for earning the world-class title, these institutions represent the capacity and strength of innovation (Kehm, 2014). Being aware of the considerable academic prestige acquired by the number of elite universities of a country, governments have begun goal-oriented initiatives (Agasisti, Yang, Song & Tran, 2021). This trend has also found its way to Türkiye, where there are concerns about the recent quantitative developments in the higher education system turning into the quality and the low position of Turkish universities in global competition. One of the policy reactions in Turkish higher education is the research university project started in 2017.

Salmi (2009) states that world-class universities can be characterized by three complementary factors: (a) a collection of talented faculty and students, (b) abundant resources for rich learning and research environment, and (c) proper governance enabling universities to decide how to manage without hindered by bureaucracy. In this study, we deal with the excellent faculty part of the human capital dimension of excellence in the world-class research university. The literature shows five human capital strategies to transform a university into a world-class, research-oriented university. The strategies include:

(1) establishing alliances with world-class universities in the West, (2) encouraging the return migration of native-born scientists/academics to boost local research output, (3) actively recruiting foreign academics to join local universities, (4) increasing the diversity of their student body by encouraging international students to enroll, and (5) expanding their research capacity by recruiting more research-focused graduate students in the sciences and engineering (Paul & Long, 2016, pp.130-131).

Here, we focus on the third strategy in this research. Studies on the recruitment of foreign academics as a strategy and foreign academics' contribution to the scientific development of the host country can be found in the literature (Chellaraj, Maskus & Mattoo, 2008; Rovito, Kaushik & Aggarwal, 2021; Van Holm, Wu & Welch, 2019; Webber & Yang, 2014). The common point of these studies is that foreign academics made important contributions to the host countries' research, technology, and innovation, and they became indispensable for science in the host countries. However, the topic of foreign academics remains in its infancy in the context of Turkish higher education. For this reason, revealing the identity and contributions of foreign academics in Turkish research universities in terms of human capital

strategies is vital in Türkiye, where the building of research universities is an important topic of discussion.

Legal Arrangements Regarding the Employment of Foreign Academics in Türkiye

In order to better position the current situation on the subject, it is necessary to present the legal framework for the employment of foreign academics in Türkiye. Three legal documents on the employment of foreign academics draw the boundaries of the legal framework. The first of these legal texts, the Higher Education Law, stipulated the work permit of the relevant ministry for the employment of foreign academics and stated that it could not exceed 2% of the academic staff at the university. In another legal document, the Higher Education Personnel Law, the authority to determine the remuneration for foreign academicians is given to the Turkish Council of Higher Education (hereafter 'CoHE'). The detailed legal text that determines foreign academics' employment procedures and principles is the regulation issued in 2020 by CoHE.

If we summarize this arrangement;

- Salary offers to be made for foreign academics with whom a contract will be signed for the first time shall not exceed 1.5 times the gross amount of the monthly and all other payments paid to the equivalent Turkish academics with doctorate degree holders working in the same institutions, and their equivalents for non-doctoral academic staff.
- In renewed contracts, the offered fee may be increased proportionally only if the service of the said academic is needed and if he/she has a feature that is not found in Turkish counterpart.
- In the special conditions required for employment in different academic titles, some requirements are stipulated in different fields such as graduation, work experience and certificate ownership, publication and project (Given in Appendix).

Methodology

Design

This study is designed as bibliometric research to provide a descriptive analysis of foreign academics in research universities of Türkiye. As a technique in bibliometric analysis, performance analysis was conducted to analyse the academic performance of foreign academics in Turkish research universities and their contribution to their universities in 2020. As the hallmark of bibliometric studies and descriptive in nature (Donthu, Kumar, Mukherjee, Pandey, & Lim, 2021), performance analysis "aims to evaluate different groups of scientific actors, such as countries, universities and authors, by measuring the productivity and impact of their scientific activity" (Gaviria-Marin, Merigo, & Popa, 2018, p.1658).

The Unit of Analysis

The unit of analysis in this research is foreign academics in research universities of Türkiye in 2020. In 2020, there were 11 universities, designated as research universities in 2017 by CoHE. In December 2021, CoHE designated 12 more universities as research universities. However, we only included research universities in 2020 to the analysis to investigate the performance of foreign academics who work in research universities in 2020. Table 1 details the unit of analysis in terms of total number of academics, total number of foreign academics, and the ratio of foreign academics in research universities.

Table 1. Number of academics in research universities

University	# of academics	# of foreign academics	Ratio of foreign academics
Ankara University	3685	54	1.5
Boğaziçi University	994	78	7.8
Erciyes University	2248	39	1.7
Gazi University	3267	3	0.1
Gebze Technical University	709	8	1.1
Hacettepe University	4042	44	1.1
Istanbul Technical University	2353	47	2.0
İstanbul University	3586	110	3.1
İstanbul University-Cerrahpaşa	2171	6	0.3
İzmir Institute of Technology	592	11	1.9
Middle East Technical University	2223	63	2.8

Variables and Data Collection

Within the scope of the research, two types of data were collected: (i) researcher data and (ii) university data. Final date of the data collection process was 10 November 2021. The processing steps for researcher data are as follows:

- 1) Identification: Data on the number of foreign lecturers working in research universities and in which units of the universities they work was obtained from the CoHE statistical database. Personal profiles of academics were obtained from CoHE academic database. From these two databases, academics' gender, title and Ph.D. degree information was obtained. However, in order to complete the deficiencies in the information about their education and to confirm the information obtained, the data about each academic were checked through academic information systems of universities, personal web pages of the academics, internet search engines, web pages of previous workplaces or temporary visits, Ph.D. thesis of academics, Ph.D. data-bases such as Proquest, National Thesis Center of the CoHE and other sites such as internet news and seminar announcements. The subject categories and research areas of the academics were determined by matching the study areas at the university they work in with the subject category and research areas in WoS.
- 2) Data gathering: Researcher data includes the researcher's publication and citation performance in journals indexed in WoS, without year limitation. The following three criteria were used in the search in WoS:
 - a) Document type = article/review article,
 - b) Affiliation = university of the specific researcher,
 - c) WoS Index = SCI-EXPANDED, SSCI, A&HCI

To find the profiles of the researchers, a search was made on the WoS author tab, both by name and, if available, by the researcher ID and ORCID number. If no researcher record was found with the searched name, no WoS publication was entered in the data file. If the profile record obtained as a result of the search was claimed by the researcher, the researcher's publication and citation data were created by using the criteria a and c. In addition, if the profile record resulting from the search was algorithmically generated by WoS, first criterion b was used, then publication and citation data were generated using the other two criteria. However, if the name of the university, where the researcher is currently working, in the affiliation section is not available, the publication information on the researcher's institutional university page, google scholar profile, if any, personal web pages of the researchers were used to profile the researcher, and the profile and the created data file were verified. The data on the number of graduate supervisions by foreign academics in Türkiye was gathered from National Thesis Center of the CoHE. The reason why article/review article types and citations to them are chosen as publishing activity is that these documents are used as performance data in international university rankings and academic performance evaluation systems, and that these activities appear as common academic activities that allow comparison in many research areas.

The processing steps for university data are as follows:

1) As university data, articles published in journal indexed WoS in 2020 and citations to these articles until the last data collection date (November, 2021) were collected. In WoS, a search was made with the names of the relevant universities using the affiliation tab, and the a and c criteria used in the researcher search were used in university data search.

Results

Demographic Characteristics of Foreign Academics

Demographic characteristics of foreign academics working in research universities are presented in Table 2. Of the total number of foreign academics, 57% were male while 43% were female. Fifty-nine per cent of the foreign academics were lecturers which means that there is no Ph.D. criterion to apply the position of a lecturer in Türkiye. As an expected result, 46.4 % of the foreign academics were not holding a Ph.D. degree.

Table 2. Demographic characteristics of foreign academics

Variable	,	1	2	3	4	5
Gender		Male	Female			
	n	264	199			
	%	57.0	43.0			
Academic Title		Lecturer	Asst. Prof.	Professor	Assoc. Prof.	Res. Asst.
	n	273	84	56	43	7
	%	59.0	18.1	12.1	9.3	1.5
PhD Status		Holding	Not Holding Ph.D. Degree			
		Ph.D. Degree				
	n	248	215			
	%	53.6	46.4			

Academic Qualifications of Foreign Academics

Table 3. shows the ratio of foreign academics by the research area in which they work. There is great variability of the ratio of foreign academics across research areas. Arts & humanities is more open to foreign academics than life sciences & biomedicine, physical sciences, social sciences and technology. The academic field labelled as other is the second field more open to foreign academics. The foreign academics that are under this category are from English preparatory division of the universities. Within research areas, we also found great variability in the ratio of foreign academics. Literature in arts & humanities, biochemistry & molecular biology and pharmacology & pharmacy in life sciences & biomedicine, mathematics in physical sciences, linguistics in social sciences, and engineering in technology had more foreign academics than other subject categories within research areas.

Table 3. Ratio of foreign academics by research areas

Subject categories & research areas	n	%
Literature	87	18.8
Music	39	8.4
Religion	22	4.8
Art	12	2.6
Architecture	11	2.4
Dance	11	2.4
Philosophy	8	1.7
History	7	1.5
All Arts & Humanities	197	42.5
Biochemistry & Molecular Biology	4	.9
Pharmacology & Pharmacy	4	.9
Environmental Sciences & Ecology	3	.6
Genetics & Heredity	3	.6
Pediatrics	3	.6
Veterinary Sciences	3	.6
Anesthesiology	2	.4
Obstetrics & Gynecology	2	.4
Agriculture	1	.2
Anthropology	1	.2
Biotechnology&Applied Microbiology	1	.2
Cardiovascular System & Cardiology	1	.2
Cell Biology	1	.2
Dentistry, Oral Surgery & Medicine	1	.2
Emergency Medicine	1	.2
Genetics & Heredity	1	.2
Life Sciences Biomedicine Other Topics	1	.2
Marine & Freshwater Biology	1	.2
Neurosciences & Neurology	1	.2
Orthopedics	1	.2
Pathology	1	.2
Radiology, Nuclear Medicine & Medical Imaging	1	.2
Rehabilitation	1	.2
Surgery	1	.2
Urology & Nephrology	1	.2
All Life Sciences & Biomedicine	41	8.9
Mathematics	10	2.2
Physics	8	1.7
Geology	3	.6

Chemistry	2	.4
Oceanography	2	.4
Astronomy & Astrophysics	1	.2
All Physical Sciences	26	5.6
Linguistics	10	2.2
Business & Economics	8	1.7
Education & Educational Research	8	1.7
Sociology	8	1.7
Archaeology	2	.4
International Relations	2	.4
Area Studies	1	.2
Communication	1	.2
Government & Law	1	.2
Mathematical Methods In Social Sciences	1	.2
Philosophy	1	.2
Psychology	1	.2
Public Administration	1	.2
All Social Sciences	45	9.7
Engineering	34	7.3
Information Technologies & Library Sciences	2	.4
Metallurgy & Metallurgical Engineering	2	.4
Science & Technology Other Topics	2	.4
Energy & Fuels	1	.2
Nuclear Science & Technology	1	.2
All Technology	42	9.1
All Other	112.0	24.2

We analysed the countries and income levels of the countries where the Ph.D. degree come from in Table 4. The first five countries where the foreign academics got Ph.D. degree are as follows: Türkiye (25%), United States (19%), United Kingdom (8.5%), Germany (5.6%), and Russia (5.6%). With respect to income levels, 52% of the foreign academics holding Ph.D. degree got it from high-income economies.

Table 4. Countries and income levels of the countries where the Ph.D. degree come from

	n	%
Country		·
Türkiye	62	25.0
United States	47	19.0
United Kingdom	21	8.5
Germany	14	5.6
Russia	14	5.6
Not Available	12	4.8
Azerbaijan	9	3.6
Italy	7	2.8
Belgium	6	2.4
France	6	2.4
Iran	5	2.0
Spain	5	2.0
Ukraine	4	1.6
Austria	3	1.2
South Korea	3	1.2
Netherlands	3	1.2
Switzerland	3	1.2
Georgia	2	0.8
India	2	0.8
Iraq	2	0.8
Japan	2	0.8
Kyrgyzstan	2	0.8
Cyprus	2	0.8
Denmark	1	0.4
Scotland	1	0.4
Canada	1	0.4
Kazakhistan	1	0.4
Latvia	1	0.4
Malaysia	1	0.4

Eygpt	1	0.4
Norway	1	0.4
Poland	1	0.4
Tatarstan (Russia)	1	0.4
Turkmenistan	1	0.4
Greece	1	0.4
Income Level		
High-income economies	129	52.0
Upper-middle-income economies	93	37.5
Lower-middle-income economies	14	5.6
Low-income economies	0	0.0
Not applicable	12	4.8

In Table 5, the ratio of foreign academics by research area and the ranking of the university from where Ph.D. degree is taken are presented. The rate of foreign academics holding Ph.D. degree from a university in the top 500 list in the fields of arts & humanities, life sciences & biomedicine, physical sciences, technology, and other is lower than the rate of foreign academics holding Ph.D. degree from a university in 500+ in the ranking. The opposite is true for the social sciences.

Table 5. Ratio of foreign academics by research area and the ranking of the university from where Ph.D. degree is taken

-						aegree								
THE World University Rankings Rank	Arts &			Sciences & Biomedicine	Physical	Sciences	Social	Sciences	,	Technology		Other		Lotal
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Top 10	3	3.5	1	3.2	0	0.0	6	16.2	0	0.0	0	0.0	10	4.3
11-50	6	7.0	3	9.7	3	11.5	4	10.8	5	12.8	2	14.3	23	9.9
51-100	3	3.5	3	9.7	3	11.5	4	10.8	3	7.7	2	14.3	18	7.7
101-150	5	5.8	2	6.5	2	7.7	3	8.1	3	7.7	0	0.0	15	6.4
151-200	3	3.5	1	3.2	0	0.0	3	8.1	2	5.1	0	0.0	9	3.9
251-300	3	3.5	2	6.5	1	3.8	5	13.5	0	0.0	0	0.0	11	4.7
301-350	5	5.8	0	0.0	1	3.8	0	0.0	2	5.1	0	0.0	8	3.4
351-400	2	2.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	0.9
401-500	3	3.5	1	3.2	1	3.8	0	0.0	2	5.1	1	7.1	8	3.4
501-600	1	1.2	0	0.0	0	0.0	0	0.0	2	5.1	1	7.1	4	1.7
601-800	12	14.0	3	9.7	3	11.5	4	10.8	11	28.2	2	14.3	35	15.0
801-1000	1	1.2	3	9.7	2	7.7	3	8.1	1	2.6	1	7.1	11	4.7
1001-1200	11	12.8	6	19.4	0	0.0	0	0.0	1	2.6	2	14.3	20	8.6
1201+	12	14.0	5	16.1	3	11.5	4	10.8	3	7.7	2	14.3	29	12.4
Reporter	4	4.7	0	0.0	0	0.0	0	0.0	0	0.0	1	7.1	5	2.1
Not Listed	12	14.0	1	3.2	7	26.9	1	2.7	4	10.3	0	0.0	25	10.7
Total	86	100	31	100	26	100	37	100	39	100	14	100	233	100

Table 6 gives academic performances of foreign academics in terms of the total article number, total citation count of their articles and h-index scores. The mean score of Web of Science articles was 8.6 (SD= 38.4; Min.= 0; Max.= 491). The mean score of total citation count of WoS articles was 216.9 (SD= 1454.4; Min.= 0; Max.= 21080) while WoS h-index scores mean was 2.5 (SD= 6.9; Min.= 0; Max.= 72).

Table 6. Foreign academics' WoS articles, citations, and h-index

Variable	Mean	SD	Min.	Max.	
Total article number	8.6	38.4	0.0	491.0	
Total citation count	216.9	1454.4	0.0	21080.0	
h-index	2.5	6.9	0.0	72.0	

The distribution of foreign academics' articles indexed by WoS is presented in Table 7. We found that 66.1% of the foreign academics did not have any articles covered by WoS. Of the 306 academics who did not have any articles covered by WoS, 97 academics had Ph.D. degree. More than half of the 4004 articles by foreign academics were produced by only 21 academics.

Table 7. Distribution of the articles by foreign academics indexed by WoS

Article Number	n	%
0	306	66.1
1	24	5.2
2	12	2.6
3	9	1.9
4	5	1.1
5	8	1.7
6-10	23	5.0
11-15	20	4.3
16-20	10	2.2
21-25	8	1.7
26-30	8	1.7
31-35	9	1.9
36+	21	4.5
Total article number		4004

The distribution of foreign academics' total citation counts covered by WoS is presented in Table 8. We found that 69.1% of the foreign academics had no citations in WoS. Moreover, more than three quarters of foreign academics had ten citation or fewer. Additionally, the findings on citations showed that of the 100,411 total citation counts, over half of the citations belonged to only four foreign academics.

Table 8. Citation count of foreign academics' articles indexed by WoS

Citation count	n	%
0	320	69.1
1-2	6	1.3
3-5	15	3.2
6-10	7	1.5
11-25	15	3.2
26-50	16	3.5
51-100	13	2.8
101-200	19	4.1
201-300	12	2.6
301-400	7	1.5
401-500	1	0.2
501-1000	17	3.7
1001-2000	5	1.1
2001-3000	2	0.4
3000+	8	1.7
Total citation number		100411

In Table 9, we lay out the trend for the distribution of foreign academics' WoS h-index. As can be seen in the table, 92.2 % of the foreign academics' h-index is ten or fewer.

Table 9. Distribution of foreign academics' WoS h-index

h-index	n	%
0	320	69.1
1	28	6.0
2	17	3.7
3	11	2.4
4	9	1.9
5	10	2.2
6-10	32	6.9
11-15	18	3.9
16-20	8	1.7
21-25	4	0.9
26-30	1	0.2
31-35	2	0.4
36+	3	0.6

We outlined the number of graduate supervisions in Türkiye by foreign academics of research universities in Table 10. Of 248 foreign academics holding Ph.D. degree, only 33.9 % had finalized

masters' thesis (Σ =496) under his/her supervision, while only 19.8 % had finalized Ph.D. dissertation (Σ =153) under his/her supervision.

Table 10. The number of graduate supervisions in Türkiye by foreign academics of research universities of Türkiye

The number of students	Master's de	gree supervision	Ph.D. Degre	e supervision	
graduated	n	%	n	%	
0	164	66.1	199	80.2	,
1	25	10.1	20	8.1	
2	11	4.4	8	3.2	
3	11	4.4	7	2.8	
4	10	4.0	5	2.0	
5	5	2.0	1	0.4	
6-10	10	4.0	6	2.4	
11-15	3	1.2	1	0.4	
16-20	3	1.2	1	0.4	
21-25	2	0.8	0	0.0	
26-30	2	0.8	0	0.0	
31-40	1	0.4	0	0.0	
41-50	1	0.4	0	0.0	

Contribution of Foreign Academics to the Research Universities

We evaluate the contribution of foreign academics to research universities in 2020 in Table 11. First, we group foreign academics in terms of the research universities they worked for in 2020. Then, for each research university, we gave details on article number, citation count, number of graduate supervisions. When the research universities are compared, the findings on the contribution of foreign academics to research universities in 2020 can be summarized as follows:

- Proportionally, the highest contribution to the university in the number of articles and citations was made by foreign academics at Gebze Technical University.
- Foreign academics at Boğaziçi University made the highest contribution to their university in terms of the number of graduate supervisions.

Discussion

The role of universities in growth and development has gained more importance with the knowledge-based economy. With the globalizing structure of higher education, universities have begun to be evaluated not only in their context but also globally. This situation has also globalized the competition for talents in higher education, spreading the competition to many areas. In Türkiye, where concerns about quality have increased with quantitative developments, research universities' situation has begun to be examined from different perspectives. Thus, to contribute to our knowledge of one of the human capital strategies in transforming a university into a world-class, research-oriented university, this study examined foreign academics in Turkish research universities, their academic qualifications, and their contribution to the university.

The trend in female employment in higher education in Türkiye can also be seen in the employment of foreign academics. In Türkiye (CoHE, 2022), where the rate of female academics is 46%, the rate of female foreign academics employed in research universities has approached this rate with 43%. At this point, Türkiye has maintained its philosophy that prioritizes women in all areas of life and aims to increase the representation power of women (Karadağ, 2021). As expected, our findings showed that the number of foreign academics was concentrated in the title of lecturer in terms of academic title. Three factors can explain the high rate of lecturers. First, the employment of academics in this title is relatively easier than in other titles in terms of the conditions sought. Secondly, academics employed in this position are given fewer resources as wages, so the financial burden of universities is reduced. Finally, lecturers who will teach in foreign language preparatory classes are employed under this academic title. What is surprising is the fact that non-doctoral academics have a rate of 46.4%. This result suggests that the employment of foreign lecturers in research universities is not research-oriented.

Table 11. Contribution of foreign academics to research universities in 2020

	Article number of the university	Citation count of the university	Masters' thesis submitted to the university	Ph.D. dissertation submitted to the university	Article number of foreign scholars	Citation count of foreign scholar	Masters' degree supervision of foreign academics	Ph.D. degree supervision of foreign academics	Ratio of articles by foreign scholars	Ratio of citations by foreign scholars	Ratio of masters' degree supervision by foreign academics	Ratio of Ph.D. degree supervision by foreign scholars
	Article num	Citation co	Masters' th	Ph.D. disse	Artic	Citation cou	Masters' d	Ph.D. d	Ratio	Ratio ol	Rati supervision b	Ratio of Ph.D
University Ankara University	1634	5885	779	532	8	14	0	1	0.5	0.2	0.0	0.2
Boğaziçi University	697	3141	226	68	34	91	10	4	4.9	2.9	4.4	5.9
Erciyes University	962	3639	355	232	27	374	1	0	2.8	10.3	0.3	0.0
Gazi University	1309	4437	614	530	16	174	0	0	1.2	3.9	0.0	0.0
Gebze Technical University	448	1931	160	49	32	616	1	0	7.1	31.9	0.6	0.0
Hacettepe University	2096	9716	530	531	8	35	2	0	0.4	0.4	0.4	0.0
Istanbul Technical University	1394	4828	556	159	50	223	8	1	3.6	4.6	1.4	0.6
İstanbul University	1480	4720	577	408	8	11	3	1	0.5	0.2	0.5	0.2
İstanbul University- Cerrahpaşa	1101	3502	194	231	18	62	0	0	1.6	1.8	0.0	0.0
İzmir İnstitute of Technology	349	1188	128	29	3	17	0	1	0.9	1.4	0.0	3.4
Middle East Technical University	1157	4139	446	203	46	94	8	4	4.0	2.3	1.8	2.0

Another finding of the study is that the three fields with the highest rate in the distribution of foreign academicians by field are arts & humanities, other (foreign language preparatory units) and social sciences fields. This finding is in contradiction with previous results of different contexts reported in the literature (Huang, 2017; Lin, Pearce & Wang, 2009; Yuret, 2017). We can state that this finding is surprising for a study conducted in research universities. Since research universities adopt a policy focused chiefly on stem areas on global level, it is noteworthy that the rate of foreign academics employed in research universities in Türkiye is low in stem areas.

When examining the countries where foreign academics with a doctorate completed their doctorate education, we see that the first country with the highest rate is Türkiye, with a rate of 25%. This situation is parallel with the increase in the number of international students in Türkiye due to Türkiye's internationalization policies in higher education. In addition, it is thought that the difficulties in finding an academic position in European countries and the USA, which have higher income levels and therefore more developed higher education systems, as a researcher who got his/her graduate education in Türkiye, can be another reason for this high rate. However, when the overall rate is examined, 52% of these academics completed their doctorate in countries with high-income economies. Since the flow of talent generally occurs in a direction from the periphery to the core (Lee & Kuzhabekova, 2018), there is still a need in the Turkish context to investigate the pull and push factors for foreign academics whose Ph.D. graduation is from high-income countries even if Seggie & Çalıkoğlu's (2021) research on the experiences of Western-origin faculty members shed light on the issue to some extent.

We also see that there is an interesting contrast in the concentration of foreign academics' Ph.D. graduation institutions in different academic fields by the ranking of universities. The rate of foreign academics who graduated from universities in the top 500 list of THE World University Ranking exceeds 50% only in social sciences, and the lowest in the other category. When the total ratio is examined, we can state that 44.6% of the foreign academicians in research universities graduated from the universities in the top 500 in the ranking. The reason why we consider the ranking of the university to be so important is our assumption that higher rankings mean being more research-oriented for a university. For this reason, considering that the graduate education is a professional socialization process (Ongiti, 2012), and "through the socialization process the individual acquires the knowledge and skills, the values and attitudes, and the habits and modes of thought of the society to which he belongs" (Bragg, 1976, p.1), recruiting foreign academics who graduated from universities in the top of the rankings may have the potential to make profound contributions to the development of Turkish research universities.

To determine the academic qualifications of foreign academics, it is more beneficial to consider the number of articles, the number of citations and the h-index variables together since they bring out more meaningful results. According to the findings, it is remarkable that 66% of the academics do not have any articles indexed in WoS, and 97 of these academics are researchers who got their Ph.D.. Another significant result is that 63.7% of the 4004 articles examined were published by only 21 academicians. In the number of citations, 8.9% of the foreign academics did not get a citation for their articles indexed in WoS, while only four researchers received 52.1% of the total 100,411 citations. When we examined the h-index of the researchers who published articles indexed in Wos, we found that 77.1% of the researchers had an h-index of ten or less. These results revealed that only a small portion of foreign academics are prominent researchers in their field. As a developing country, this situation is expected for Türkiye. Furthermore, it may be unrealistic to expect that these researchers would probably be "the 'cream of the crop' and have very high research and/or technical skills" (Webber, 2013, p.69), as in other developed countries like the USA.

Supervision in graduate education is a critical element in the quality and efficiency of higher degree research (Bastalich, 2017). In this respect, it can be stated that the area where academic culture transfer can take place is the graduate education supervision process. Besides teaching and research, one of the expected roles of foreign academics at research universities in Türkiye is to supervise graduate students. However, our findings show that 66.1% of foreign faculty members with a doctorate do not conduct supervision at the masters' degree level, and 80.2% at the doctoral level.

As for the contributions of foreign academics to their universities, foreign academics from 6 universities in terms of the number of articles and from 5 universities in terms of the number of citations contributed more to the relevant indicators than their presence rates within the university. However, this does not show the same trend in terms of graduate supervision rates. While foreign academics contributed less to masters' degree advisory rates than their presence rates within the university in all universities, this situation was reversed in only one university in doctoral education supervision rates.

Conclusion and Policy Implications

Research universities play a vital role in building knowledge-based economies as one of the key nexus of international knowledge flows. One of the important factors effective in fulfilling this function is seen as human capital. One strategy for transforming universities into research-oriented world-class universities is the employment of foreign academics. In Türkiye, where the notion of a research university is not an old phenomenon, there is no study specific to foreign researchers in research universities. At this point, this study aimed to present a picture of foreign academics in the context of Türkiye, which is seen as an important indicator of internationalization in the human capital of research universities. Here, we can say that six main findings need to be interpreted:

- 1) Although researchers with doctorates constitute the majority, the rate of the difference between Ph.D holders and not holders is low (7.2 %),
- 2) Researchers do not even constitute a quarter of the total in areas prioritized globally in researchoriented universities, such as life sciences & biomedicine, physical sciences, and technology.

- 3) Less than half of the researchers received their doctorate from the top 500 universities in THE World University Ranking.
- 4) The performance of only a few researchers is high in research and citation indicators.
- 5) The contribution of academics in terms of graduate education supervision is low.
- 6) When the contributions of foreign academicians to universities are analysed in terms of the ratio of the total academic staff, we see variations in different indicators and universities.

This study has gone some way towards enhancing our understanding of recruiting foreign academics in building research universities. The researchers' demographic information, academic qualifications, and contributions were examined. We presented some suggestions for the qualifications of foreign academics to be employed and policy implications for decision-makers in research universities based on the legal text presented in the appendix.

For recruitment conditions;

- Foreign academics to be employed should have completed Ph.D. education or worked at a university that is in the top 500 in one of the ranking systems accepted in the literature,
- Universities' assessment boards should utilize the metrics such as h-index, g-index, i10-index, and read-10 index, which can be expressed as academic career scorecards, as criteria by determining the lower limit,
- Articles published in journals indexed in Q1 and Q2 quartiles in WoS, or Scopus, not less than a certain number, should be sought as a criterion.
- Academics who meet these criteria should be obliged to publish articles annually or until the contract renewal date and provide graduate student supervision.

For management practices;

- Teaching loads for foreign academics should only be at the graduate level and should be limited to the extent not restricting their research activities.
- Salary offers should be made to researchers by considering the international wages instead of the country equivalent wages.
- In parallel with the examples and trends in the world, a certain staff quota should be determined for each research field.
- Decision-makers should prefer to employ fewer highly qualified researchers rather than more researchers with fewer qualifications.

In conclusion, the evidence from this study suggests that the majority of foreign academics in Turkish research universities are not directly employed with a research focus, and there are some caveats in the legal texts for foreign academics' recruitment. This study also shows the need for a legal text or regulation that defines and protects research universities' status while drawing the responsibility boundaries of these universities.

The findings of this study have to be seen in the light of some limitations. The bibliometric data of the study come from the articles of 2020, and the citation counts in the years 2020 and 2021 of these articles indexed by Clarivate Analytics' Web of Science (WoS). Furthermore, we also included only the Turkish research universities in 2020 and foreign academics working at that time. Even if CoHE declared new research universities after the data collection phase of the study was finalized, we did not include them because they did not have the title of the research university in 2020. We also did not separate foreign academics as research oriented or teaching oriented. This may affect the conclusion in terms of academic performance. However, there are several important reasons why we do not make this distinction. Firstly, the absence of such a distinction between research vs teaching orientation in Türkiye, secondly the current situation, where academics from all titles can publish and use their publication to get promotion and lastly the context of the study is research universities, so it is desired to show a broader picture of the subject in terms of academic performance of all titles.

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Appendix

Special Conditions for Employment of Foreign Academic Staff

Employment in Foreign Language Preparatory Classes

- 1. For those whose native language is English, who will be employed for foreign language teaching in English preparatory classes; must have at least a bachelor's degree in one of the fields such as linguistics, language and literature, comparative literature, teaching or educational sciences (pedagogy); or to have at least one of the following conditions, provided that they have at least a bachelor's degree:
 - a) To have at least two years of work experience in teaching the relevant language in an internationally recognized accredited language teaching center,
 - b) To have a DELTA or CELTA certificate.
- 2. For those whose native language is not English, who will be employed for foreign language teaching in English preparatory classes; must have at least a bachelor's degree in one of the fields such as English Language, English Literature, English Language Teaching and must have met at least one of the following conditions:
 - a) To have at least two years of work experience in teaching the relevant language in an internationally recognized accredited language teaching center,
 - b) To have a DELTA or CELTA certificate.
- 3. Foreign academics to be employed for teaching foreign languages other than English must have at least one of the following conditions, provided that they have at least a bachelor's degree in the relevant language:
 - a) Having at least two years of work experience in teaching the language in which they will be employed,
 - b) To have at least one year of academic work experience.

Employment in Associate Degree Programs

Foreign academics to be employed in associate degree programs of higher education institutions must meet at least one of the following conditions, provided that they are at least a bachelor's degree graduate:

- a) Having academic work experience in a higher education institution recognized by the CoHE for at least two years,
- b) To have a master's degree in the relevant field of the desired program.

Employment in Undergraduate and Graduate Programs

- 1. Foreign academics to be employed to teach at undergraduate and graduate level in higher education institutions, provided that they have a doctorate degree and have proven their proficiency in the language of instruction of the program they will teach, must have met at least one of the following conditions:
 - a. Certify that he/she has worked at least one year in one of the higher education institutions recognized by the CoHE,
 - b. To have at least one book published in the field or to have at least five articles published in peer-reviewed journals in the last five years.
- 2. In specialized units at the undergraduate level, where Turkish citizen lecturers holding a master's degree can be employed, foreign lecturers must also have at least a master's degree.

Employment for Research Purposes at the same time with Teaching Purpose

In order to employ foreign academics to give lectures in higher education institutions, as well as to take part in projects and to benefit in research activities, the candidates must have met at least one of the following conditions:

- a) To have a master's or doctorate degree from one of the top 1000 universities in any of the World University Rankings [Times Higher Education (THE); QS World University Rankings or Academic Ranking of World Universities (ARWU)] or to have worked at these universities for at least one year as an academic and researcher,
- b) To have published at least ten articles in indexed journals accepted as credible by the authorized boards of the university to be employed,
- c) To have worked as a coordinator, executive or researcher in at least one scientific research project that is ongoing or has been successfully completed and that contributes to science and industry.

Note: If it is documented that they are internationally successful and capable of contributing to the international visibility of the university, higher wages may be offered for foreign academics who will work in projects and

research activities as well as giving lectures in higher education institutions compared to the academics who will only lecture.

Employment in Fine Arts

Those who will be employed as foreign lecturers in the Conservatory, Fine Arts, Art and Design Faculties must have at least a bachelor's degree in the relevant field and have met at least one of the following conditions:

- a) To have at least two years of academic or institutional work experience in the relevant field of art,
- b) To have carried out at least three original art activities, events, projects, designs, etc. in the last three years.

---o---o--- Article Notes ---o---o---

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