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University rankings on architecture and built environment: The case of Turkey

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Abstract

Stakeholders of universities like students, faculty, administratives, prospective students and their parents; always looking at rankings of the universities to benchmark the different factors. Faculty, administrative staff and the existing students use rankings to search the quality and the status of the university and the programme, on the other hand prospective students and their parents trying to find out the best university and programme to suit their expects. This paper aim to explain the programme rankings in architecture and also architecture and built environment subjects in the case of Turkey. Istanbul Technical University and Middle East Technical University Architecture Programmes were in the first 100-150 ranks in QS Architecture and Built Environment ranking and also in the first 100 in URAP Architecture ranking in 2017 reports. The paper try to make comparision to the other architecture programmes with these two cases form Turkey on different parameters like age, academic reputation, research, number of students, country, city. The study also aims to consider a projection for the following years in Architecture programme rankings. The prospective schools of architecture which considered as new candidates for the following years also evaluated in this paper. The methodology of the paper is based on the bencharking by using different parameters. The main idea of the paper in conclusion show that these two cases from Turkey had a success story in architecture and built environment programme ranking in these two university ranking systems.

Keywords
University, Ranking, Architecture, Built environment.

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1. Introduction

Although there are many issues to be discussed with respect to university rankings in terms of their positive and negative aspects, they are assessments that are used by various stakeholders for different purposes. Systems that monitor universities according to various parameters and make and sort them according to these parameters, and which enable them to make comparisons according to years or criteria, have been continued for a decade. The institutions that make university rankings are evaluating universities around the world, which are about ten years old. The evaluations of the field subject ranking are made by differentiating the weights of the general criteria according to the fields or adding new criteria. Providing transparency about the quality of our universities is an admirable goal. Increasingly, students in our more commercial and international higher education environment are demanding qualitative and quantitative information that can help them make more informed choices, and most would agree that students should be able to access this kind of information (Thompson-Whiteside, S., 2016).

The quality in higher education is in close relation with accreditation. An institution which provides architectural or engineering education is considered to be accredited when evaluated against certain quality studies. Accreditation had been generated for the first time in Illinois within the context of institutionalization of professional practice. Accreditation is a voluntary, generally non-governmental process of peer review. It requires an educational institution or program to meet certain, defined standards or criteria. Accreditation is sometimes confused with certification. In general, Institutions and programs are accredited, and individuals are certified (Hacihasanoglu and Hacihasanoglu, 2004). On the other hand as Blanco-Ramírez and Berger, (2014) stated like many other phenomena in our increasingly global world, quality practices in higher education have become increasingly internationalized. Accreditation and quality assurances are very effective factors in assessments of universities and especially rankings for the subject field areas.

While world-class universities, global rankings, and transnational accreditation have become hot topics within different fields, the potential of researching these topics is significantly limited by the lack of theorizing about what quality means and how it relates to other essential values. Quality must be at the center of the research agenda in international higher education and the first step in that agenda must include revisiting our notions of quality (Blanco-Ramírez and Berger, 2014). More universities around the World are actively concerned with competing to improve their institutional position on international ranking scales (Zilwa, 2010). University rankings in national level realized for decades. However global university rankings first appeared only in 2003, when a team of researchers at the Shanghai Jiaotong University (China) produced the Academic Ranking of World Universities (ARWU) to 'benchmark' Chinese universities with top universities in the world (Wachter et. Al.: 2015). The Shanghai ranking used a very simple methodology in the beginning. The data for ranking used directly obtained from available public information sources. The ranking called "world-class universities" evaluated by ARWU, focusing primarily on research outputs and awards. This methodology caused new debates worldwide and attracted a number of followers who pledged to produce global rankings that would better measure and represent the 'real quality' of universities (Wachter et. al.: 2015). Among these are Times Higher Education–QS World University Rankings (THE- QS), published in 2004, which was split into Times Higher Education World University Rankings (THE) and QS World University Rankings (QS) in 2010, and U-Multirank, a multi-dimensional university mapping and ranking project funded by the European Union since 2009 (Wachter et. Al.: 2015). The other international university ranking system which is titled as URAP which was organized by Middle East Technical University prepare both general university ranking and subject based rankings of universi-

Table 1. *Ranking Systems - adapted from (Wachter et. Al.: 2015).*

Ranking (Data) Source	THE	QS	URAP
Bibliometric database (Thomson Reuters– Web of Science)	Yes. Volume of publications and citations.	No	Yes
Bibliometric database (Elsevier– SCOPUS)	No	Yes. Volume of publications and citations.	No
Survey	Yes. Annual academic reputation survey on research; Annual academic reputation survey on teaching and learning; conducted by Thomson Reuters.	Yes. Global survey of academic experts; global survey of employers.	No
Publicly available information	No	No	
Self-reporting by HEIs	Yes, when necessary. Data for missing data points	No	
Other data sources		No	

ties. The other ranking system "CWTS (Center for Science and Technology Studies-Leiden University) Leiden Ranking" which also had both general and field based rankings of the universities. This article mainly focused on three rankings which had architecture field ranking to find the best relations in between the schools of architecture in different countries.

2. University rankings

There are many critiques on global university ranking systems. One of the major criticisms of global university rankings is that they primarily focus on research. Ranking systems use different data sources for research findings. ARWU, THE, Center for World University Rankings (CWUR), CWTS Center for Science and Technology Studies/Leiden, U- Multirank and URAP use the research database of Thomson Reuters' Web of Science and Thomson Reuters Incite. THE have further adopted Thomson Reuters Reputation Survey in its ranking methodology (Wachter et. Al.: 2015). QS derived research data from SCOPUS, a product of Elsevier, a Dutch-based research items and publication index. Research indicators often dominate in rankings, simply because precise measurements of teaching and learning quality are quite difficult. Broadly speaking, there are three different ways to measure teaching and learning quality: by gauging the caliber of prospective students, or the amount of value added by the learning received, or the success graduates have obtaining employment and impacting society (Thompson-Whiteside, S.,2016). These three different types of learning and teaching quality evaluation are included university ranking systems with annual academic reputation survey on teaching and learning or global survey of academic experts. Hazelkorn (2015) identifies eight academic indicators often considered by ranking systems: beginning characteristics, learning outputs, faculty, learning environment, final outcomes, resources, research, and reputation. Some of these parameters like faculty, research, reputation had been extremely affective on ranking systems.

This article selected three ranking systems which have subject field rankings of universities on architecture. These systems are THE, QS and URAP. As seen in Table 1. THE and URAP use bibliometric database of Web of Science, on the other hand QS use SCOPUS. THE and QS organize surveys for academic reputation and also QS organize employer' s survey.

Studies of the impacts of rankings on student recruitment and admission are mostly related to national rankings (Wachter et. Al.: 2015). However today general international rankings of universities and subject field rankings getting more importance as stated by different authors (Wachter et. Al.: 2015), (Zilwa, 2010). Media coverage of the rankings heightens public interest in the performance and quality of universities, although critics found that rankings have created more public confusion than reflecting the real quality difference because of the simplistic picture they present and the arbitrary definition of quality. The research question of this study is based on the question of "why universities give references of quality of their education in general and also in different subject areas?" The second question of the articles is "how the Turkish case in the field of architecture exist in 2017?" The article tries to answer these two main questions by using the data drive form databases of tree selected university ranking systems.

3. Methodology of university rankings

Times Higher Education (THE)'s ranking on architecture; QS (Quacquarelli Symonds)'s subject area ranking on architecture and the built environment and URAP's ranking on

architecture cover assessments and rankings both in general and also in the fields defined in international level. The main theme of this article is based on the inclusion of two Turkish universities in the QS architecture and built environment and URAP architecture rankings in 2017 for the first time then ever in the history of Turkish architectural education. The objectives of the article to get the potentials of this ranking results in the near future of Turkish architectural education and profession. Thefore benchmarking is happlied to all assessments of three different ranking systems with all parameters.

Times Higher Education THE started to make universal rankings for universities in different areas, while also ranking them in general. Among the ranking according to subject, the field of architecture is defined under the classification of Arts and Humanities. In the evaluation of THE, 13 different criteria are listed under 5 main headings and different weights are given in different areas. Criteria defined as:

1. Teaching (learning environment) %30
   a. Reputation Survey (%15)
   b. Staff - to - student ratio (%4.5)
   c. Doctorate–to–bachelor's ratio (%2.25)
   d. Doctorate – awarded – to – academic –staff ratio (%6)
   e. Institutional income (%2.25)
2. Research (volume, income, reputation) %30
   a. Reputation survey (%18)
   b. Research income (%6)
   c. Research productivity (%6)
3. Citations (Research influence) %30
4. International outlook (Staff, students, research) %7,5
   a. International – to – domestic – student ratio (%2.5)
   b. International–to domestic–staff ratio (%2.5)
   c. International collaboration (%2.5)
5. Industry income (knowledge transfer) %2.5

QS university rankings use some parameters as similar to other university rankings.

QS like THE also make ranking for universities according to the subject fields. QS prepare ranking of the universities for "Architecture and Built Environment" filed subject, "Art and Design" field subject.

The following parameters are used in general ranking and also in architecture and built environment field by QS ranking system:

- Academic Impact: A survey of 74,651 academics worldwide had been asked to write at least 10 universities from her/his country and at least 30 internationally recognized universities in 2017. The academics who did survey do not permit to suggest their own universities in their answers. The weight of academic effectiveness is taken as 70% for architecture and the built environment field,
- Employer impact survey: This survey is based on the results obtained with a surveillance such as academic impact. In 2017, 40,643 employers were asked to submit the questionnaire according to evaluation of the graduates of 10 national and 30 international universities. The weight of employer impact survey for architecture and built environment is taken as 10%.
- Number of articles / number of citations: The number of articles published in the past five years is indicated in the journals indexed in SCOPUS for each field, because the number of articles and the number of citations received vary according to the fields. This number is 30 articles for the field of architecture and environment. Universities that have surpassed this number are assessed in this area. For architecture and built environment the weight is taken as 10%.
- H-index of citations: H index has been started to be used since 2013. H index has been developed to measure the productivity of scholars and the scientific effect of scholarship. H index covers the number of articles indexed in WoS or SCOPUS is evaluated together with the number of citations received by these articles (for example, H-index equals to 1 if a cited article is cited once, 2 if thereare two articles and each cited article has two cited references). The weight is taken as 10%

for the field of architecture and built environment.

The academic effect and the employer effect are the parameters used in art and design ranking which is also included as a ranking field in QS. Art and Design ranking system based on academic impact (90%) and employer impact (10%). Art and design ranking very strongly in relation with being a member of international collaboration networks, reputation and strong historical backgrounds, having well-known graduates and academic staff that the schools have. There isn't any university from Turkey in the first 200 in art and design field ranking made in 2017. It is more likely that the art and design programs of universities that try to enter international networks and try to be affective in international organizations are likely to enter this ranking in the near future.

URAP is a non-profit institution that makes general and field-specific university rankings by URAP Research Laboratories established by academics and researchers in Middle East Technical University. The number of articles per academic member, the number of citations, the number of citations per academic member, the total number of scientific documents, the total number of scientific documents per academic member, the number of doctoral graduates per academic year, the number of doctoral students, the number of students per faculty member are the criteria used in the URAP ranking. URAP university ranking system also has field specific ranking. Architecture is one the field specific ranking area.

ITU has become world's 97th and Middle East Technical University has become the world's 100th in architecture ranking of URAP. ITU and METU Architecture Schools achieving the best places in all fields when we consider World University rankings, (URAP 2016-2017 Alan Sıralaması Basın Bildirisi-15 Mayıs 2017). METU and ITU also existed in URAP architecture ranking list in 2016 78th and 79th respectively. These two cases of QS and URAP are the main subjects of this article.

3.Case of Turkey: Success of Istanbul Technical University (ITU) and Middle East Technical University (METU)

Architetural education in Turkey had more then hunderd years history and had many important successes in the past with faculty members, graduates, sicientific and technological organizations. International accreditation of architectural schools is among these successes. When we look at Table 2, we can see that two architectural programs from UK, eight programs from USA in the first ten place as a result of evaluations made with the above parameters. Non of the architectural programs of Turkish universities existed in THE architecture field specific ranking. When examining the evaluation criteria of THE, it is a point that some state and foundation universities of Turkey will take place in this ranking in the following years. It is expected that architectural programs likely to be included in the rankings are universities that give importance to research, pay attention to the high level of international student and faculty members, and attach importance to doctoral programs and teaching members. ITU and METU existed in the first 100-150 built environment and architecture areas of QS ranking and in the first 100 in architecture area ranking of URAP for the first time in 2017. Other universities are expected to be ranked in the following years besides these two universities, such as İhsan Doğramacı Bilkent University and Gazi University which already rank in other related areas like engineering and humanities in THE, QS and URAP ranking systems.

University College London (UK) and University of California Berkeley (USA) existed in the all 3 ranking system when we look at Table 2. MIT, University of Cambridge, ETH Zurich ranked in two ranking systems. When all the rankings of the three ranking institutions (THE; 100, QS; 200, URAP; 105) are examined, the number of schools entering the US ranking is much more than the universities from others. It should be seen as a great success that the two universities of Turkey take place among the first 100-150 and the first 100 among the leading education institutions in the field of architec-

ture. This situation is very important both in terms of the future of the architectural departments demanded by a large number of people on the one hand in Turkey and on the future of the Turkish architectural environment.

QS ranking of architecture and built environment had been evaluated with a parameter of number of universities from different countries in Figure1. USA had 41 schools of architecture as the leading country. The following 3 countries are UK with 22 shools, China with 16 schools and Australia with 14 schools. The third group consist of 8 countries those are South Corea (9 schools) Italy, Germany and Japan (8 schools), Canada (7 schools), The Netherlands and Malaysia (6 schools), Sweden (5 schools). The countries like Brasil and Spain (4 schools), New Zeland, Protugal, Taiwan, Denmark (3 schools) are in the following group. South Africa, Swisszerland, Chile, Thailand and Turkey had two schools in architecture and built environment ranking. The last group which had only one school of architecture in this ranking consist of Argentina, Austria, Czech Republic, Egypt, Finland, France, Greece, India, Iran, Ireland, Israel, Lithuania, Mexico, Norway, Saudi Arabia and Singapore.

The second evaluation depends on the cities of architectural schools which have campuses in the same cities. This evaluation was selected since the challenge in between the schools in the same city will cause better quality at the end. When we look at Figure 2. Titled as Cities which have schools of architecture in QS Architecture and Built Environment ranking;

We saw that some cities like New York and Boston in United States of America and some cities like Seoul (8 schools), Shanghai, Hong Kong, Sydney and Melbourne had more than one school of architecture in the ranking. We can add London, Lisbon, Newcastle from Europe to these cities. In case of Turkey two universities are settled in two major and big cities of Turkey; Istanbul and Ankara. These two schools of architecture are listed in the top four places in the age list of Turkish architecture schools just like the others which ranks in these different ranking systems in especially USA and UK.

To make a comparision two architectural schools from Turkey ITU and METU with the other universities

Table 2. *Top ten universities in THE, QS and URAP ranking systems in the field of acrhitecture and the universities that rank from Turkey.*

2017	Times Higher Education (THE) Architecture	QS Architecture and Built Environment	URAP Architecture
1	Stanford University (USA)	MIT (USA)	University of California Berkeley (USA)
2	University College London (UK)	University College London (UK)	Eindhoven University of Technology (The Netherlands)
3	University of Cambridge (UK)	Delft University of Technology (The Netherlands)	Tsinghua University (China)
4	Columbia University (USA)	University of California Berkeley (USA)	KU Leuven (Belgium)
5	Princeton University (USA)	ETH Zurich (Swetzerland)	Technical University of Denmark (Denmark)
6	Yale University (USA)	Manchester School of Architecture (UK)	University College London (UK)
7	MIT (USA)	Harvard University (USA)	University of Sheffield (UK)
8	University of California Berkeley (USA)	University of Cambridge (UK)	Hong Kong Polytechnic University (China)
9	University of Pennsylvania (USA)	National University of Singapore (Singapore)	Purdue University (USA)
10	University of California Los Angeles (USA)	The University of Hong Kong (China)	Swiss Federal Institute of Technology (Switzerland)
		100-150 (109-alphabetic) Istanbul Technical University	97 İstanbul Technical University
		100-150 (115-alphabetic) Middle East Technical University	100 Middle East Technical University

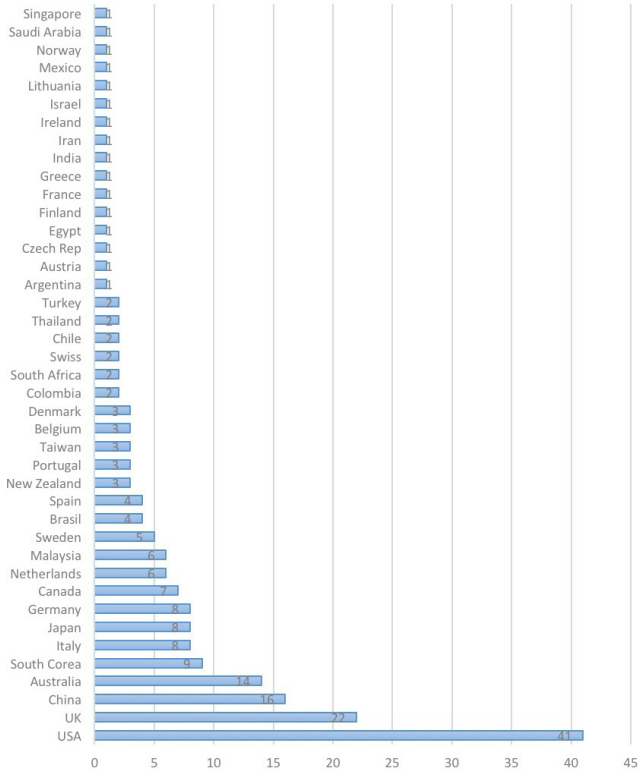

Figure 1. *Countries in QS architecture and built environment ranking 2017.*

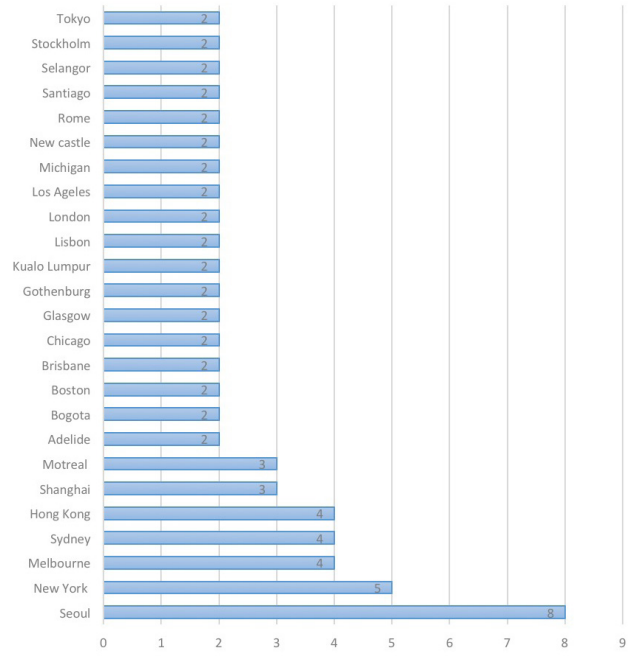

Figure 2. *Cities which have schools of architecture in QS architecture and built environment ranking.*

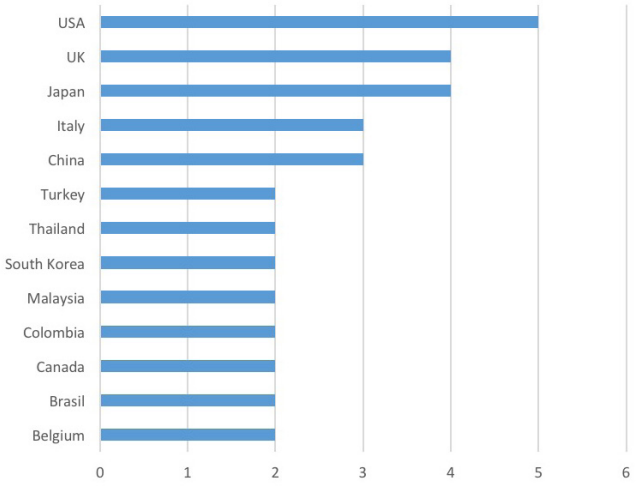

Figure 3. *Countries which ranks in between 101-150 in architecture and built environment.*

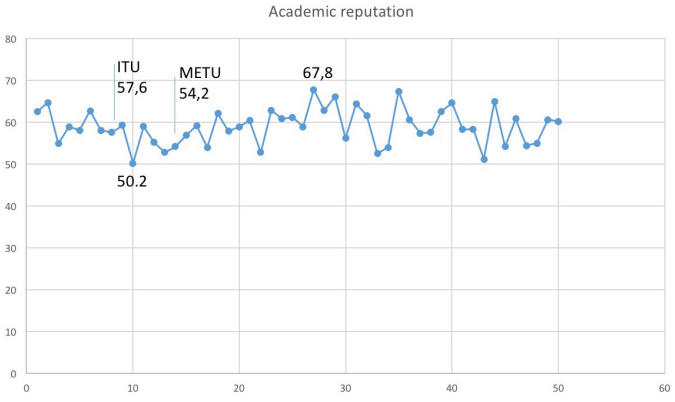

Figure 4. *Academic reputation of the universities rank in between 101-150 in architecture and built environment of QS.*

which share 101-150 ranks in QS ranking evaluated with parameters of following items: Number of universities in different countries; academic impact of universities in the same ranks, employer affect survey, number of artciles/Number of citations, H-Index citations.

In the first evaluation for QS architecture and built environment field ranking is number of universities in the same country. This evaluation shows us that 5 universities from USA, 4 universities from UK and Japan, 3 universities from Italy and China and finaly 2 universities from Turkey, Thailand, South Korea, Malaysia, Colombia, Canada, Brasil, Belgium existed in this ranking level. The second evaluation for academic impact of the same ranking scale universities seen in Figure 4. When we look at academic reputation or impact of the universities in between 101-150 ranks at QS we find the lowest academic impact as 50,2 over 100 and maximum academic impact in this ranks as 67,8 over 100. ITU' s academic reputation existed as 56,7 / 100 and METU' s acedemic reputation existed as 54,2 / 100. These academic reputation may be considered to take place in the mid-low part of 101-150 ranking universities.

The second parameter is employer reputation in QS ranking system to evaluate with benchmarking ITU and METU with the other universities. Figure 5. shows us the results of employer effect survey for the universities in the same ranking scale.

Employer reputation covers the evaluation of the employers about graduates of different universities. Employers permit to select 10 national and 30 international schools according to their satisfaction on these univerities architecture graduates. The lowest score in the ranking between 101-150 of architecture and built environment ranking of QS is 36,1 over 100 and the highest score is 86,9 as shown in the Figure 5. ITU got 60,5 and METU got 59,5 wihch are evaluated as mid scores all together.

Following assesment covers number of articles and number of citations for the same ranking in QS. This assesment can be seen in the following

Figure 6.

The following assessment is related with citations per paper which were published in the journals indexed in SCOPUS. When you look at the below Figure 6. The lowest score is 46,3 and the highest score is 95,9 in this evaluation. METU got 84,9 and ITU got 73,6 in this evaluation which can be place in mid – upper classification for citation per paper.

H-Index assesment of the universities which rank in between 101-150 in QS' s architecture and built environment field is explained in the following Figure 7.

METU' s score is 73,3 and ITU' s score is 66,7 when we considered the H-Index assessment of QS architecture and built environment ranking. The lowest score in this ranking existed as 42,9 and the highest value for H-Index existed as 92,8. ITU' s score is approximately equals to mid value, METU' s score for H-Index little bit higher than ITU.

5. Conclusion

When a general assessment is made, the results of academic reputation studies that have entered university rankings since the second half of the twentieth century affect the order as well as other rationally measured parameters (Davis, 2016). As researchers in architecture schools determine the best architecture schools, they start with the history of the school as it is in other university rankings. Then comes the standard of high-level student admission. In the third place, there is a recognition level of the school, which is identified with the name and has a high cost. The curriculum, the number and quality of academic staff, the physical possibilities and research outputs are determined as important criteria. Networking, finding an internship location and finding job opportunities are the secondary ranking criteria of the learning program. Another criterion group is the integration of new disciplines such as sustainability, automation, and numerical design into the program. The fact that schools are well-known graduates is another important criterion in the preferences of the students and therefore in the order. Student satisfaction is important in terms of student stakeholders among the criteria. When the results of student satisfaction studies conducted in recent years are examined, it is seen that the same universities have been replaced and placed in the top 10. In 2017, Özyeğin University, İYTE, Sabancı University, Koç University and İhsan Doğramacı Bilkent University were ranked (URL TÜMA 2017).

Although Turkish architecture edu-

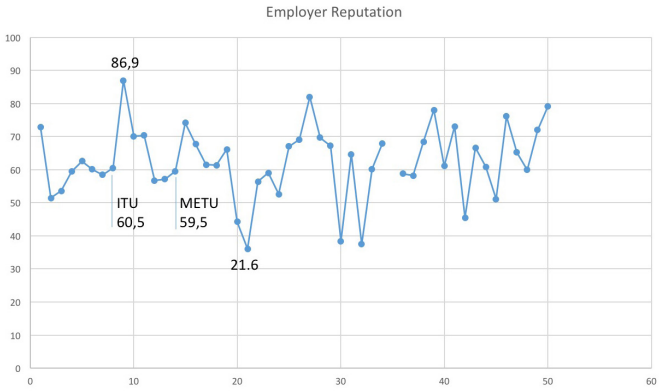

Figure 5. *Employer survey results of the universities rank in between 101-150 in architecture and built environment of QS.*

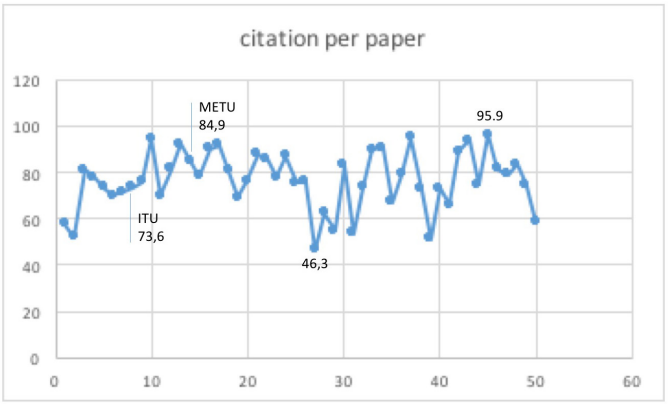

Figure 6. *Results on number of articles and number of citations of the universities rank in between 101-150 in architecture and built environment of QSS.*

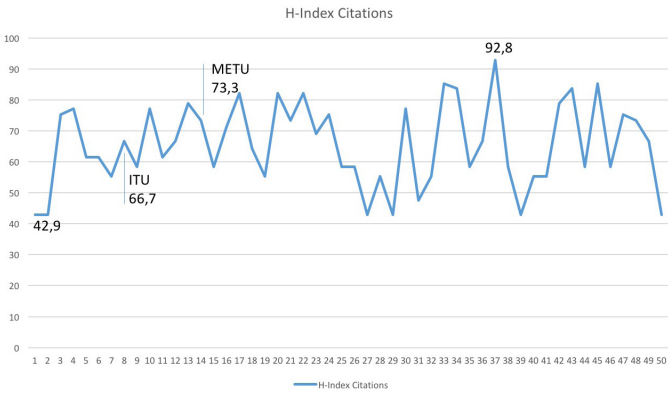

Figure 7. *Results on H-Index assesments of the universities rank in between 101-150 in architecture and built environment of QS.*

cation has received negative criticisms in various environments, the fact that two Turkish universities among these top universities are included in the first 100-150 in the order of architectural and built environment, the number of publications and citations of other universities which want to join this order, by registering their qualifications with accreditation and striving to improve their international reputation, will increase the reputation of Turkish architecture in general terms.

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