

## ESTABLISHMENT AND CHALLENGES OF RESEARCH UNIVERSITIES IN TURKEY<sup>2</sup>

**Abstract:** This qualitative research aims to examine the establishment and challenges of research universities in Turkey. To this end, specifying their missions, funding, leadership, autonomy, physical and academic infrastructures of research universities were researched. The data were collected through interviews and analyzed with content analysis technique. Research results revealed that as all research universities in Turkey were chosen among existing universities without making their missions clear, preparing their academic and physical infrastructures ready in advance, they face severe challenges regarding specifying their missions, leadership, funding, and autonomy, physical and academic infrastructure. Only a benefit of having considerably %25 more academic staff employment chance was noted in the study. It can be concluded that the idea of the establishment of research universities has no clear understanding, and due to insufficient planning, unclear policies, and legal base, they are bound to fail in the long term.

**Keywords:** Higher education, universities, research universities, university management

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## INTRODUCTION

As pioneer institutions, universities play crucial roles in the development of a country both economically and socially. Bloom, Curran and Brint (2020) noted that these universities are crucial for the high-impact product, which can help to deal with leading social and economic problems of a country. Altbach (2013) defined research universities as academic units “committed to the creation and dissemination of knowledge, in a wide range of disciplines with suitable laboratories, libraries, and other infrastructures which will allow them to teach and research at the highest level”. Because of the roles they carry out, the establishment process, organizational structures and working routines of universities become highly important.

As Scott (2006) and Laredo (2007) underlined, from the establishment of the first university to the latest one, the central mission of universities has long been defined to train students and prepare them for the professional activities they will later undertake. They are also expected to conduct research and publicize the results of their studies, provide other academic and public services to the society in which they operate. However, Kurul Tural (2007) noted that social conditions and social relations significantly influenced universities throughout the 20th century. In this frame, the modern university elevated the mission of public service and differentiated their teaching mission to research mission. This mission differentiation required to establish new types of universities. As a result of this understanding, many countries are hoping to establish research universities.

Research universities are central institutions that provide access to global science, produce basic and applied research, and educate young scholars and researchers of the academy and the society. Although the roots of research universities can be attributed to the foundation Humboldt University in 1809, their establishment started after World War II to fulfil fundamental research such as CNRS in France, Max Planck in Germany, CNR in Italy, CSIC in Spain or Riken in Japan (Mugabi, 2014).

Establishing research universities is a worldwide phenomenon (Mohrman, Ma & Baker, 2008). Countries consider having at least a research university to participate in the global knowledge economy and benefit from science and scholars (Deem, Mok & Lucas, 2007). According to Altbach (2011) modern societies cannot do without research universities. This compels to the establishment trend of research universities, and as a result, the community of research universities is rapidly expanding in emerging economies worldwide (Liu, Wang & Cheng, 2011).

Kearney and Lincoln (2013) underlined that research universities are considered important to many countries in their higher education systems. Countries hope to develop their research and advanced education capacity in order to train human resources for their economy such as high-level specialists, scholars, scientists and researchers. These universities also generate new knowledge to support national innovation system of countries (The World Bank, 2002). It is emphasized that these universities support programs, research centers, research production, faculty collaboration, teaching and research facilities (Bland, Bruce, Deborah, Risbey & Staples, 2005; Mohrman, Ma & Baker, 2008). Similarly, Altbach (2004) and Salmi (2009) noted that a research university is characterized as excellence in research, academic freedom and an intellectually stimulating environment. Moreover, Ben-David (1977) and Shils (1997) reported that a research university is not only an institution, it is an idea and; therefore, it is essential to specify their missions well, provide adequate funding to be able to conduct researches, employ good leaders, provide autonomy and provide physical and academic infrastructures. In this regard, this research aims to analyze the establishment and challenges of research universities in Tukey. To this end, this qualitative research purposes to examine specifying their missions, funding, leadership needs, and autonomy, physical and academic infrastructures of research universities.

## LITERATURE REVIEW

There are some essential missions of universities. These are teaching, conducting research, producing researches, and sharing the results of these results with wider society (Engwall, 2020). Universities have been functioning with these missions for a long time. However, in the past decades, the missions of universities have been questioned and they are forced to change their forms of service delivery and production process. As a result, new missions are defined for these institutions. In this regard, they are required to be more research oriented. As a result of this new mission, new universities appeared all over the world. These new universities are research universities.

When research universities are concerned all over the world, some characteristics come to the forefront. Bienenstock (2008) puts these characteristics as high quality faculty committed to research and teaching, high quality graduate students who want to learn to perform research or function with advanced expertise, an intellectual climate that encourages scholarship, facilities in which teaching and research can be performed effectively and funding for operations and instruction. In this study, these characteristics fall into five categories as specifying their missions, funding, leadership, and autonomy, physical and academic infrastructures.

#### *SPECIFYING MISSIONS OF RESEARCH UNITIES*

The missions of research universities comprise of a number of critical elements ranging from the type of management to determining their academic priorities (Masataka, Watanabe & Hata, 2014). All countries attempt to specify the missions of these universities to be different from other university types with emphasis on applied research, practice-oriented research and research development (Leporia & Kyvik, 2010). In this context, their prime mission is to foster a research culture (LERU, 2013).

The research culture is the structure that gives significance of research behavior. This culture requires open, collaborative relationships among faculty members and a supportive culture is valued there (Cheetham, 2007; Huenneke, Stearns, Martinez & Laurila, 2017). Pratt, Margaritis and Coy (1999) emphasize that there are certain characteristics of a good research environment like clarity in the goals, research focus, positive group climate, decentralized and participative management, good command of communication, qualified human resources and competency in leadership. In addition, reward structures for research contributions, sustained inquiry, and various stages of productivity is supposed to be developed in such an environment. Another mission of these universities is to educate graduate students, scholars and young researchers. Through this mission, they are expected to prepare human resources that will contribute to future research. By training future researchers, universities contribute to the society as well.

A further mission of research universities is to transfer produced knowledge in Ph.D. students and graduates to economy and other public services. Here, number and type of contracts, collaboration with partners are the essential elements (Schoen, Laredo, Bellon & Sanchez, 2007). Also, research universities were established with a civic mission to prepare students for active participation in a diverse democracy and develop knowledge for the improvement of communities (Checkoway, 2001). The belief here is that research universities might affect the entire educational system and societal system in total. The final mission of these institutions is to produce scientific publications, continuous training, consultancy and internships (LERU, 2013). Within this mission, universities are expected to provide solutions to social and economic problems the society encounter.

#### *FUNDING RESEARCH UNIVERSITIES*

A necessity for research universities is to provide adequate funding which will allow these institutions to conduct research without facing financial constraints. To Altbach (2009), maintaining research universities requires sustained funding to keep them functioning effectively. Altbach (2011), Salmi (2009) and Hladchenko, de Boer and Westerheijden (2016) state that establishing research institutions is quite costly and requires a huge amount of financial support.

In most countries, these universities are funded by public sources. In the United States, they receive only 15% of their basic funding from the state governments for operational expenses and research activities. Hereunder, Athans (2001) underlined that excellent research centers receive more research funding than mediocre ones. Research requires extra funds, and therefore, their budgets should be larger than other types of universities. Since this amount cannot be provided by the government, these universities are expected to raise their own funds from different sources by signing contracts with public and private organizations, generating endowments and gifts, and tuition fees (Altbach, 2009; Salmi, 2009). If they cannot increase their funds, it can be a serious problem for research universities in the long term.

#### *LEADERSHIP AT RESEARCH UNIVERSITIES*

Leadership is a key aspect for research universities. Previous research showed that leadership characteristics can influence research productivity (Lertputtarak, 2008; Bland et al., 2005). Kok and McDonald (2017) found that successful leaders in highly productive universities have some specific characteristics namely practical, visionary, directed goals clearly, trustworthy, and tended to give empowerment and autonomy to their staff.

According to Bland et al. (2005), leadership characteristics consists of four aspects: scholarship, research orientation, capability to fulfil all critical leadership roles, and active leadership participation. Moreover, research university leaders should have a participative leadership style by organizing frequent meetings, setting expectations for all members to contribute to decision-making and making information available to the group (Miller & Marchant, 2009). Salmi (2009) stressed that these universities require strong and competent leaders to translate the research vision into the mission. At these universities, leaders should develop a challenging vision for the university, set clear research goals and communicate them effectively. Also, leaders at research universities need to understand the research agenda and implement it accordingly.

#### *AUTONOMY AT RESEARCH UNIVERSITIES*

Universities are complex and autonomous organizations (OECD, 2007). According to The Lima Declaration on Academic Freedom and Autonomy of Institutions of Higher Education (1988), university autonomy means the independence of universities from the state and all other forces in terms of their decisions in order to establish educational policies, finance and administration. Babalola, Jaiyeoba and Okediran (2007) university autonomy means freedom of universities from external control regarding academic, administrative and financial matters. In this manner, university autonomy has four dimensions. The first dimension is academic autonomy, which is required to decide on degree supply, scope, aims and methods of research curriculum and methods of teaching. The other dimension is financial autonomy that has a right to acquire and allocate funding, decide on tuition fees and accumulate surplus. The third dimension is organizational autonomy, which consists of establishing university structures, signing contracts and electing decision-making bodies. The final dimension is staff autonomy, which is the responsibility for recruitment, salaries and promotions.

When research universities are concerned, the spirit of a research university includes a commitment to academic freedom. According to Altbach (2011), Salmi (2009) and Erdoğan (2018) a considerable degree of autonomy must be provided to meet specific institutional missions. Therefore, research universities need strengthened autonomy and academic freedom to develop and maintain their strengths there.

#### *PHYSICAL AND ACADEMIC INFRASTRUCTURE AT RESEARCH UNIVERSITIES*

Research competency and academic infrastructures are defined as competent human resources and physical infrastructure endowments. At research universities, basic research infrastructures are laboratories and research centers (Videka, Blackburn & Moran, 2019). Altbach (2013) and Mohrman et al. (2008) put that for realizing the missions of research universities, these universities must have libraries with access to international databases, research centers and well-equipped laboratories. Regarding intellectual environment, these universities also need intellectual property, technicians, administrative and scientific support teams. It is important to establish interdisciplinary collaboration among the staff, provide continued training and financial supports to organize them all as well.

Furthermore, for research universities, student research assistantships should also be supported and enforced accordingly to develop research culture and increase total research production (Hanover Research, 2014; Hladchenko et al., 2016; Youn, & Price, 2009). Moreover, research universities should allocate funds directly to research, adopt a generous sabbatical policy to enable frequent and/or extended research time (Furco, 2001; Hanover Research, 2014).

#### *THE ESTABLISHMENT PROCESS OF RESEARCH UNIVERSITIES IN TURKEY*

In Turkey, establishment journey of research universities started in 2017. These universities were chosen among the existing public universities. In this regard, The Council of Higher Education (CoHE) invited all existing universities to apply to be a research university. In response to this invitation, 58 universities applied to become a research university. Out of them, 10 universities were chosen as major research universities, and five were chosen as candidate ones (YÖK, 2020; 2017).

As far as the Turkish higher education system is concerned, research universities are supposed to play vital roles. For this reason, specifying their mission, current leadership practices, funding, autonomy and physical and academic infrastructure become highly important requirements for these universities. In order for them to be successful, they should have good technological infrastructure which will provide data available for students and researchers, equipped science laboratories and free intellectual atmosphere, funds to support research and academics scientific participations (YÖK, 2020). However, although the government explained its support repeatedly, their legal base has not been established yet. They are treated the same as all other universities except for providing a bit higher academic staff source. Their budgets,

physical and academic infrastructures are the same, and their leaders are chosen with the same way other rectors are chosen. It is considered that this leads to some challenges for the Turkish research universities in practice.

#### PURPOSE OF THE RESEARCH

For this purpose, this research aims to analyze the establishment and challenges of research universities in Turkey. In order to reach this aim, the answers of the following were researched:

- How are the missions of research universities specified?
- How are research universities funded?
- What kind of leadership is the current leader doing?
- To what extent are research universities autonomous?
- How are physical and academic infrastructures of research universities?

The research universities were established with a quick decision without preparing a legal base and function with the current law, which does not specify research universities separately. As their necessities are not specified adequately, it is considered that these institutions face many challenges. Moreover, this research may provide an awareness about research universities in Turkey. In this regard, the research results may provide insights into research university process and may help solve problems these institutions encounter. In the long term, the research results may contribute to the higher education field as well.

#### METHOD

This research was carried out with a phenomenological research design. This research design is also known as qualitative research. According to Creswell (2007), through these kinds of research, it is aimed to discover how a concept or a phenomenon is experienced and understood by participants. These kinds of research are usually employed in order to obtain in-depth knowledge in a research (Denzin & Lincoln, 2005; Marshall & Rossman, 2006). This research aimed to determine how academicians experience establishment and challenges of research universities in Turkey. In addition, this research design proposes that participants should be accepted as individuals who create their own meanings in their social environments they live or work in. They also constitute the relations they have created, and they are re-creators of their social worlds with their own subjectivity (Balçı, 2015; Kümbetoğlu, 2005; Punch, 2005).

#### STUDY GROUP

The research participants consisted of 20 academicians chosen from 10 research and five candidate research universities. The participants were determined with maximum variation sampling technique. This technique is more of a research purpose than methodological requirement, and allows the researcher to select suitable participants for the aim of the study (Creswell, 2007; Marvasti, 2004). This technique is frequently used by qualitative researchers as they do not purpose to work in large groups. It also facilitates them to prefer rich situations for gathering knowledge on broad research and critical concerns (Creswell, 2007; Patton, 2002). For maximizing variability, a research group of 5 to 25 participants for phenomenological research is enough in order to handle a research (Polkinghorne, 1989; Maxwell, 1996). To this end, it was purposed to choose participants from different genders, age groups, position, and experience in balance. The participants' demographics were presented in Table 1.

In Table 1, the participants' demographics were presented. As can be seen, while 10 participants were male, 10 were female. When their age is considered, 4 participants were between 31-35 years old, 4 were between 36-40 years old, 4 were between 41-45 years old, 4 were between 46-50 years old and 4 participants was 51 years old and over. While 8 participants were professors, 7 were associate professor and 6 were assistant professor. Regarding their experience, 2 participants had between 6-10 years' experience, 5 had between 11-15 years, 4 had between 16-20 years, 4 had between 21-25 years and 5 had 26 years and over experience.

Table 1. The participants' demographics

Gender	f	Age	f	Academic	f	Experience	f
Male	10	25-30	-	Professor	7	1-5 years	-
Female	10	31-35	4			6-10 years	2
		36-40	4	Associate Professor	7	11-15 years	5
		41-45	4	Assistant Professor	6	16-20 years	4
		46-50	4			21-25 years	4
		51 and over	4			26 years and above	5
Total			20		20		20

DATA COLLECTION

The data were collected with a semi-structured interview technique. In this regard, the responses to the following questions were explored. How are the missions of research universities specified? How are research universities funded? What kind of leadership is the current leader doing? To what extent are research universities autonomous? How are physical and academic infrastructures of research universities? During the interviews, some other questions were directed in order to get in-depth answers to some questions. The interviews were conducted face-to face in agreed upon places. These places were chosen in order for the participants not to be influenced by some power relations. By using this method, participants can illustrate their thoughts freely on a specific issue. In this research, in order to obtain the data, the participants were informed about the study purpose with an e-mail sent prior. They were asked whether they could take part in the research voluntarily or not. Finally, 20 academicians accepted to take part in the research voluntarily.

In the following step, the volunteer academicians were comforted about the confidentiality of the data to be gathered from them. At this stage, the researcher promised to keep their identities in secret. The researchers also warranted that they would never share their identities with anyone else or in any part of the research. After that, the interviews were organized on agreed-upon days, and conducted accordingly. Each interview was recorded with the participants' permission, and took approximately 30-40 minutes.

DATA ANALYSIS

The data were analyzed with content analysis technique which usually targets to analyze related data, and comment about it (Mayring, 2000). In this process, to start with, the data were organized. Here, the researcher revisited each interview record, and listened to each audiotape. The researcher also analyzed the transcripts to raise the accuracy of the data. Then, each academician's interview transcript was also reviewed in line with the data analysis procedures indicated by Bogdan and Biklen (2007). These procedures are described as development of coding categories, sorting the data mechanically, and analyzing the data below each coding category. In this regard, each academician's interview was coded separately as stated around the topic. Through this research, emerging and repeated themes were assembled below coding categories in three steps as category definition, exemplification, and codification regulation. In the same manner, first, the replies to each question were separated into meaningful categories, and then they are named, and coded. Second, the conceptualized comments were collected. Third, it was targeted to abstain from repetition. At the final phase, the described conclusions were conveyed and related to each other. It was also planned to base a cause-effect relationship among the existing parts. The participant academicians were coded as A1, A2, A3, and A4...

While organizing and analyzing the data, constant comparative approach was employed. This approach results in the saturation of categories and the emergence of theory. In this phase, theory may rise through continual analysis and doubling back for more data gathering and coding (Bogdan & Biklen, 2007; Glaser, 1992). By using this method, each set of data were re-analyzed regarding key topics, recurrent events, or activities. Here, each participant's data were reviewed several times to assure and contradicting statements until the data were organized into desired categories and sub-codes in compatible with the research question.

TRUSTWORTHINESS AND RIGOR

In order to provide trustworthiness and rigor of this study, some precautions were taken. In the first place, during the interviews, the interviewer’s role was the facilitator and listener. The interviewer just asked the questions and recorded the replies without leading the participants. In the second place, for ensuring the content validity, the interview questions were reviewed by six experts who were expert in qualitative researches. With these experts’ feedback, the research questions were finalized. In the third place, the academicians were warranted that the confidentiality of the research would be provided. This made the participants share their opinions freely without having any hesitations. The interview places were chosen outside the participants’ own institutions to avoid being influenced by some power relations. Also, as for enhancing the internal validity, while preparing the interview form, the related literature was analyzed deeply in order to establish a rich contextual frame. In this process, member checking was also done. Moreover, the research process was instructed step by step to increase external validity. In this regard, the design, participants, data collection, and data analysis processes were explained in detail. For providing internal reliability, the data were transcribed without making any interpretation. Two researchers coded the data. Regarding consistency of the data, the coded data were compared and the similarity of that data was calculated as 88% (Miles & Huberman, 1994). The raw data and coded data were saved for the other researchers’ further research demands.

LIMITATIONS

There are some limitations of this research. First, the participants were chosen voluntarily. For this reason, they cannot exemplify other academicians in all research universities in Turkey. Therefore, the results obtained through this research are limited to this sample of academicians and universities. While inferring some results out of this research, it is essential to be more careful. Second, the researcher was the main instrument of the data collection and analysis process. The analyses and conclusions inferred here are a product of the researcher’s interpretations. This may mean that a different researcher can infer different deductions with the same data sets (Bogdan & Biklen, 2007; Creswell, 2002).

RESULTS

This study purposed to determine the establishment and challenges of research universities in Turkey. In this regard, specifying missions, funding, leadership needs, autonomy, physical and academic infrastructures of research universities were researched. The results are presented below each main theme, and then commented around it.

SPECIFYING MISSIONS OF RESERACH UNIVERSITIES

In this part, the participants’ views on specifying the missions of research universities are presented in Table 2.

Table 2. Specifying Missions of Research Universities

Main Theme	Sub Themes	f
Missions of research universities	Producing top-quality research, especially in the sciences	16
	Producing scientific knowledge and patents	15
	Establishing corporate research centers and university–community partnerships	15
	Providing formal training for the future researchers and scholars	14
	Developing technology	11
	Providing interdisciplinary collaboration insights	6

\*A participant indicated in more than one view.

Most academicians stated that basic missions of research universities are to produce top-quality researches, scientific knowledge, and patents, establish corporate research centers and university–community partnerships provide formal training for researchers and scholar and develop technology. Few participants underlined providing interdisciplinary collaboration insights mission. In this regard, a male associate professor indicated, “*Research quality should provide deep insights as pioneer institutions regarding development. However, in our university interdisciplinary projects are not welcomed. They do not have such a mission currently (A3).*” Most participants of this sample express that research universities should produce knowledge and develop patents in many fields. In this context, a female assistant professor stated,

*“By producing patents, these universities may contribute to economic development, but currently it seems that their sole function is educate and train human resources (A13).”*

In addition, some participants remarked that establishing corporate research centers and cooperating with the industry is an important mission of research universities. Here, a male professor mentioned, *“These universities should have research centers, well-equipped laboratories and techno parks to cooperate with business partners. Nevertheless, our university does not have highly equipped science labs. Therefore, I do not think they carry on their real missions effectively (A9).”* Educating future researchers and scholars is also underlined as another mission by many participants, but they claimed that they cannot find enough time to carry out this role. In this context, a female professor stressed, *“My workload is heavy. I supervise 20 masters’ and 5 PhD students. Therefore, I cannot allocate enough time for all of them (A1).”* A male associate professor uttered, *“Developing technology sounds well. However, it is not our priority now as we are expected to train students and produce publications to get promoted (A18).”*

When evaluated in general, most participants are aware of the missions of research universities, but they underline some challenges. In this regard, it is understood that there is an uncertainty about the missions of these universities. The participants emphasized that they are conducting their formal duties by struggling with high number of students and heavy workload. Because of this heavy workload, academicians claim that they cannot find enough time to conduct research, train young scholars and establish school-industry collaborations, which is put as a challenge for these universities. Also, they underlined that interdisciplinary projects are not encouraged.

#### FUNDING RESEARCH UNIVERSITIES

In this part, the participants’ views on funding research universities are presented below:

Table 3. Funding at Research Universities

Main Theme	Sub Themes	f
Funding	Public funds	16
	Revolving funds	5
	Research grants	8
	Income from intellectual property	4
	Donations from individuals and foundations	0

\*A participant indicated in more than one view.

Most participants underlined that research universities are publicly funded except for limited revolving funds, research grants and intellectual property incomes. Research universities have no donations from other sources. Here, a female assistant professor affirmed, *“After becoming a research university, nothing has changed at our university. We do not have extra funding. (A17)”* A male associate professor expressed, *“As a result of the economic crisis happening now, the government limited our budget. Therefore, our university stopped supporting research facilities (A5).”* Similarly, a female assistant professor said, *“They started to build a lab five years ago, but they have not finished it yet because of financial cuts (A11).”* A female professor emphasized, *“Currently, because of the financial constraints, research universities cannot operate effectively (A6).”* A male associate professor emphasized, *“Nothing changed after becoming a research university. We have the same budget, infrastructures, and staff. In addition, our rector has no clear understanding of what a research university is (A7).”* A female associate professor said, *“Financially we get worse and worse every day. I proposed a project to our university, but they rejected it (A2).”*

Currently, in the Turkish higher education administration system, all research universities are funded by the government except for some revolving funds, research grants and incomes coming from intellectual property. Therefore, they have difficulty to meet expectations of academic staff, which is a challenge for these institutions. In fact, Altbach (2009) and Geiger (2004) underline that research universities are inevitably expensive investments to operate and they require more funds than other academic institutions due to their differentiated missions. It is necessary to separate them from other universities, provide strong funding, and legitimize the idea that these institutions are indeed special and serve a crucial role in a society. In the United States, it is clear that on an individual institutional basis, high rates of dependency on federal funds is evident (McCoy, Krakower & Makowski, 1982).

#### LEADERSHIP AT RESEARCH UNIVERSITIES

In this part, the participants’ views on leadership at research universities are presented in Table 4.

Table 4. Leadership at Research Universities

Main Theme	Sub Themes	f
What kind of leadership is the current leader doing	Research oriented	4
	Visionary leaders	4
	Participative leader	4
	Bureaucrats	15

\*A participant indicated in more than one view.

Capable leaders are basic elements of research universities. Only, competent leaders can set clear research goals and communicate them to all staff effectively. Most participants of this sample consider that although leaders at research universities are supposed to be research oriented, visionary and participative, current leaders mostly behave as bureaucrats who are busy with meetings, paperwork and some protocol visits. Here, a female professor claimed, *“Our rector spends most of his time on managerial activities. Indeed, they need to focus on research here. I think the CoHE should choose research oriented and visionary rectors for research universities (A4).”* A male assistant professor emphasized, *“Research university leaders should prioritize research first, but our rector does not have such a vision (A19).”* Furthermore, leaders at these universities are supposed to be participative ones. Hence, a male assistant professor noted, *“They do not let academic staff participate in decisions. They have a small group who decide everything here (A20).”*

When evaluated in general, the participants have the opinion that most leaders at research universities do not have adequate leadership qualities suitable for research university idea. They are expected to be research oriented, visionary and participative, but they are claimed to behave as bureaucrats who are busy with paperwork, routine meetings and protocol visits. Indeed, initiating a successful research culture requires effective leadership, so research university leaders should have strong leadership skills (Hanover Research, 2014). These universities also require good management practices to promote the evolving research agenda.

AUTONOMY AT RESEARCH UNIVERSITIES

In this part, the participants’ views on autonomy of research universities are presented in Table 5.

Table 5. Autonomy at Research Universities

Main Theme	Sub Themes	f
Autonomy	Academically free	4
	Financially free	1
	Administratively free	2
	Centrally-controlled	15

\*A participant indicated in more than one view.

Autonomy involves the ability to make their own decisions about essential academic matters, and shape their own destiny, which requires a flexibility in managerial activities. The participants of this sample have the opinion that universities are centrally controlled and they are not free. Regarding academic freedom, a male professor stressed, *“Academic freedom is an important source of strength at a research university, but it is still problematic in practice. For example, an academician was fired from his post since he shared his research results which the government did not want (A8).”* A female professor considered, *“Universities are not academically, financially and administratively free (A1). They ask everything from the government. How can research develop here?”* Research universities also have problems with managing their own academic community. They cannot employ their own academic and administrative staff. A female associate professor said, *“Nowadays, the central government limited the number of staff because of economic crisis, and universities are helpless. They cannot even produce their basic services effectively (A2).”*

In general, the participants have the opinion that universities are not free and centrally controlled. It can also be understood that especially there are some problems with the use of autonomy at research universities in Turkey, which is considered as a further challenge for research universities. Especially, there are problems with academic freedom. As some academicians faced negative results after some publications, other academicians cannot feel free to write and share their ideas with the public. In fact, research universities require steady funding commitments and need autonomy to develop and maintain their strengths (OECD, 2007).

PHYSICAL AND ACADEMIC INFRASTRUCTURES OF RESEARCH UNIVERSITIES

In this part, the participants’ views on physical and academic infrastructures of research universities are presented in Table 6.

Table 6. Physical and Academic Infrastructure

Main Theme	Sub Themes	f
Physical and academic Infrastructure	Surviving with existing physical and academic infrastructure	16
	Common practices of inbreeding and nepotism	15
	Having scientific support teams	4
	Having well-established research centers and laboratories	2

\*A participant participated in more than one view.

For a research university, having a strong physical infrastructure and academic staff is highly important. When the participants’ views are evaluated, these universities continue their new journey with existing physical infrastructure and academic staff. In this regard, a female professor highlighted, *“Our university became a research university, but we still have just one research laboratory. We are hoping to have better one (A1).”* An assistant professor expressed, *“Our university has too many good researchers, but they are not supported”*. In fact, it is important to invest and develop human capital at these universities. In this manner, a female assistant professor emphasized, *“We have a team which consists of 4 staff. They work hard, but they cannot meet all the demands with limited members (A12).”* An associate professor stressed, *“Our university did not have enough physical infrastructure and academic staff to be a research university. It was a political decision rather than scientific one”*. A male professor explained, *“There is a problem of inbreeding and nepotism at universities as well at research universities. Good researchers cannot find a place here (A16).”*

As the Turkish research universities were chosen among the existing ones, they function with their current physical infrastructure and academic staff. It is considered that they do not have well-established research centers and laboratories, which is highly important for these institutions. This leads to some challenges in practice. In fact, the missions of existing universities were different from research universities. Existing universities were established to train human resources, and they became a research university with their current structures. Therefore, it is considered that they need more time, better physical infrastructures, talented researchers and investment to become real research universities. Hence, as Huenneke, Stearns, Martinez and Laurila (2017) underlined in established research institutions, expansion of research is often attempted by adding faculty members to existing units and research centers to maximize individual success. The participants also underlined problems of inbreeding and nepotism practices happening commonly at universities. They claim that under the current political influence and pressures, universities cannot be free to employ talented researchers and students. As a result, although research universities are established, quality researches cannot be conducted there.

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

This qualitative study aimed to analyze the establishment and challenges of research universities in Turkey. In this regard, 20 academicians were interviewed. The results obtained here can be limited to the views of this academician group. To that end, number of results were obtained. According to a result, there is an uncertainty about the missions of research universities. These universities were chosen among the existing ones without preparing their legal base, and they function with their existing structures, high number of students and heavy workload. Because of this heavy workload, academicians claimed that they cannot find time to conduct research, train future researchers and establish school-industry collaborations, which is a challenge for these universities. When missions of research universities are listed all over the world, interdisciplinary studies are given priority. However, in the Turkish research universities interdisciplinary research are not encouraged. When such research are proposed, they are generally claimed to be rejected. It is considered that in the long term, their missions should be redefined in order to focus solely on research as Tatık (2017) proposed.

Another result shows that all the Turkish research universities are mainly funded by the government except for limited revolving funds, research grants and intellectual property incomes. It is considered that it brings

some drawbacks to these institutions. Firstly, when they are funded by the government, they cannot have administrative, academic and financial autonomy, which is essential for these institutions. Moreover, they can be affected by economical fluctuations at crises times. For example, nowadays, as there are some financial constraints in Turkey, these universities face financial challenges ranging from cutting financial support for participation to scientific activities to office supplies, which influences their functions negatively. In addition, academicians at these universities cannot feel free to publicize research results, which are not approved by the government. When they publicize the results of their studies, academicians may face some pressures ranging from getting fired from their posts to getting sustained their promotions. Altbach (2009) and Chirikov (2013) found that as research universities generally constitute part of a differentiated academic system with varied roles in society, they should have different funding and academic patterns. Tatık (2017), Mohrman, Ma and Baker (2008), and Altbach (2011) suggested these institutions should be financially and academically free. They should have extra financial supports.

A further result revealed that research university leaders behave as bureaucrats rather than visionary leaders, which is not considered suitable for the mission of a research university. It was claimed that as rectors are always busy with paperwork, routine meetings and protocol visits and therefore they cannot focus on research facilities at university. This may stem from their roles, choice and appointment procedure in Turkey. With the current law, any person who has a professorship title can be appointed as a rector to a university as well as a research university and they deal with every detail at university. Rectors are very powerful in the current higher education management system and want to control everything there. In addition, being a successful professor in their own field cannot guarantee to administer a university successfully. Indeed, their administrative qualities, qualifications and experience should be asked especially at research universities. Judith (1993) discovered that an effective leader at a research university should be research oriented, cultural representative, communicator, manager and planner/analyst to support the values of the disciplines. Also, Goodall (2006) suggests that the best-performing institutions have leaders who combine good managerial skills and a successful research career. For a research university, a research oriented leadership quality is crucial in order to set a clear research vision and communicate it effectively. According to another result, the Turkish research universities are not academically, financially and administratively free at all. They are claimed to be centrally managed institutions, which leads to some challenges. For example, as universities do not have administrative freedom, they cannot employ qualified researchers easily. Also, the norms of academic freedom are not fully entrenched, and there are still problems when academicians share their research results with the public. They have a fear of getting fired from their posts, so it is not easy to produce new ideas freely. In fact, university autonomy is an inevitable value for research universities to take good decisions and conduct research freely. Hence, research reveals a strong correlation between the degree of autonomy and performance and the best publications are produced at academically free research universities, published at respectable h-journals and cited heavily (Aghion, Dewatripont, Hoxby, Mas-Colell & Sapir, 2010; Slippers, Vogel, & Fioramonti, 2015).

A final result showed that since research universities were chosen among existing universities, they function with their existing physical infrastructures and academic staff. In this regard, most research universities are considered as lacking physical infrastructures and academic staff suitable for a research university. Also, they do not have well-established research centers and laboratories, which are highly important for these institutions. This leads to some challenges in practice as well. In fact, the missions of research universities different. Only one advantage research universities in Turkey is to have 25% more academic staff allocation. It is put that the Turkish research universities were established with a quick decision without preparing a legal base and they found themselves in a struggle (Türk Araştırma Üniversiteleri Güçbirliği, 2016). Hence, they need technologically equipped laboratories, libraries with books, periodicals and strong databases. They also require technologically well-equipped research centers and talented scholars. Yong (2006) found that successful Chinese research universities have 90% of labs, engineering and technology centers. Altbach (2009) stresses that what makes a research university qualified is human resources, because they educate the new generation of the personnel needed for technological and intellectual leadership, develop new knowledge so necessary for modern science and scholarship in an academically appropriate environment. According to Altbach (2011), these universities should employ the most successful researchers. The Turkish research universities became a research university with their existing structures and academic staff. Therefore, it is considered that they need more time, investment to become real research

universities. As Huenneke, Stearns, Martinez and Laurila (2017) underlined in established research institutions, expansion of research is often attempted by adding faculty members to existing units and research centers to maximize individual success. It also requires good management practices to promote the evolving research agenda. However, the participants underlined the problems of inbreeding and nepotism practices happening commonly at universities. They claim that under the current political influence and pressures, universities cannot be free to employ talented researchers and students.

There are many debates going on in the research universities today and many proposals for educational change. However, it can be concluded from this research that research universities have some challenges regarding specifying their missions, employing talented leaders, providing autonomy, funding and providing strong physical infrastructures and quality academic staff. Even though most countries want to have research universities, it is essential to establish them after preparing their legal base and providing all requirements they need. As a result of this study, it is recommended that research universities should be established after preparing their legal base. It is also suggested that the mission of research universities should be specified more clearly and the workload of academic staff should be reduced to leave them time for research activities. In addition, extra funding should be provided, and funding types should be diversified. These institutions should have administrative, financial and academic freedom, and research university leaders should be chosen among candidates who have administrative competency and experience. Moreover, some recommendations can be made for other researchers. As this research was conducted with a qualitative method, a similar study can be carried out with a survey method to reach a larger population. In addition, a similar research can be done with a mixed method to compare the results.

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