

# International Research Collaboration in Turkish Higher Education: The Role of Individual, Professional, and Institutional Factors

Türk Yükseköğretiminde Uluslararası Araştırma İş Birlikleri: Bireysel, Mesleki ve Kurumsal Faktörlerin Rolü

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## Özet

Küreselleşmenin yükseköğretimdeki etkisi, hem üniversiteleri hem de akademisyenleri uluslararası araştırma iş birliklerine daha fazla katılmaya zorlamaktadır. Türkiye’de de benzer şekilde, devletin ve üniversitelerin son dönem stratejileri akademisyenlerin uluslararası iş birliği kurma konusundaki çabalarını güçlü şekilde teşvik etmektedir. Bu çalışma, Türk yükseköğretiminde uluslararası araştırma iş birliğini etkileyen faktörleri, akademisyenlerin tutum ve davranışlarına göre incelemektedir. Çalışmada survey deseni çerçevesinde, uluslararası bir araştırma projesinin ilgili sorularına dayalı olarak, uluslararası araştırma iş birliği kurma ile bireysel, mesleki ve kurumsal faktörler arasındaki ilişkiler araştırılmıştır. Bulgularımız, küresel trendlere rağmen, araştırmaya katılan akademisyenlerin, dikkate değer bir kısmının uluslararası araştırma iş birliği kurmadığını göstermektedir. Ayrıca, doktora derecesini yurtdışından alma, yüksek akademik unvanlara sahip olma, vakıf üniversitelerinde görev yapıyor olma ve multidisipliner ya da uluslararası odağı olan araştırma yöneliminin uluslararası araştırma iş birliği kurmada etkili olduğu görülmüştür. Çalışmanın sonunda bulgular, yükseköğretimde ulusal gelişmeler ve küresel eğilimler çerçevesinde tartışılarak politika oluşturuculara ve yöneticilere önerilerde bulunmuştur.

**Anahtar sözcükler:** Akademisyenlik mesleği, APIKS, Türk yükseköğretimi, uluslararası araştırma iş birlikleri, uluslararasılaşma.

## Abstract

Globalizing forces in higher education put growing pressure on both institutions and academics worldwide to become engaged in international research collaboration (IRC). Similarly, in Türkiye, the recent governmental and institutional strategies have been ambitiously promoting academics’ endeavors toward IRC. This study examines factors influencing IRC in Turkish higher education based on academics’ attitudes and behaviors. We utilized relevant questions of an international research project and investigated the relationships between IRC and individual, professional, and institutional factors through a survey design. Our findings indicate that despite globalizing trends, a considerable proportion of the participant Turkish academics tend not to establish IRC. We also found that obtaining a doctoral degree abroad, holding higher academic titles, being employed in foundation universities, and orientation towards research that is multidisciplinary or international in scope are influential in establishing IRC. Based on national (i.e., Türkiye) developments and global trends in higher education and the academic profession, we discuss our findings and suggest measures and actions for policymakers and administrators.

**Keywords:** Academic profession, APIKS, international research collaboration, internationalization, Turkish higher education.

Higher education (HE) is considered an international field of practice (Kerr, 1994), and the university has always had an international dimension ever since its emergence (Enders, 2004). However, internationalization in HE has recently gained new meanings. Thus, new trends and developments have been putting mounting pressure on HE organizations to internationalize (Knight, 2004). As a result,

internationalization in HE has been adopted as a policy agenda for governments (Mason, Merga, Canché, & Roni, 2021), strategic orientation for universities, research field for scholars, and a career option for administrative staff members at universities (Bulut Şahin, 2017).

Internationalization in HE has been accepted as a norm (Horvath, Weber, & Wicki, 2000). Specifically, the interna-

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tionalization of research has been considered an indicator of a competitive knowledge economy (Kwiek, 2018). Different scholars (e.g., Horvath et al., 2000; Kwiek, 2018) have indicated that small countries rely more on international input for building their intellectual sources. The same argument is equally valid in the transformative era of HE systems. In that sense, international scholars play the same role in constructing the HE system in Türkiye. Güvenç (1998) and Dölen (2013) indicated the role of international scholars in gaining a modern teaching and research institution for Turkish HE organizations. For example, German scientists escaping the Nazi prosecution played a critical role in constructing several disciplines in Turkish universities (Güvenç, 1998).

Kwiek (2016; 2018; 2020) distinguished between international research orientation (IRO) and international research collaboration (IRC), where collaboration refers to behavior, and orientation refers to the precursors of this behavior (Kwiek, 2018). More specifically, IRO is defined as an academic attitude empowering IRC (Kwiek, 2016). However, the existence of IRO does not always guarantee IRC. Several economic, political, social, and cultural barriers may impede the transfer of IRO into actual behavior. The financial cost and structural flexibility are essential to make IRC flourish in a particular context (Kwiek, 2018; 2020). Kwiek (2020, p. 57) also distinguished between “internationalists” and “locals” in academic research and defined the internationalists as “the scientists involved in international research collaboration.” The first group is “mobile, cosmopolitan, career-oriented academics (loyal to outside reference groups)” while the latter is “immobile, and institution-oriented academics (loyal to inside reference groups)” (Kwiek, 2020, p. 61). These orientations are formed based on the norms of the academic profession (Kwiek, 2018). Nevertheless, despite this general classification, scholars warned that these orientations may not always be absolute. In addition to local vs. international orientation, mixed-type researchers in terms of cosmopolitan interest and local commitment can be witnessed (Rhoades, Kiyama, McCormick, & Quiroz, 2008).

Several scholars indicated the pitfalls of monopolistic research and stated the importance of IRC for countries, institutions, and individual academics. From a national and institutional perspective, internationalization in research is a source of legitimacy against power imbalances. These power imbalances are often caused by publications originating from geographical homogeneity (Arnett, 2016). Investments of different countries in their research infrastructures and HE systems lead to improvement in the capacities of their systems and growth in the number of scholars; however, the research outputs are majorly skewed towards Western societies (Jung & Horta,

2013; Tight, 2012). One of the major concerns over monopolies in research results is that this monopolistic view often reflects the needs and expectations of well-established and well-resourced societies in knowledge production; however, it tends to neglect the rest of the world (Jung & Horta, 2003; Collyer, 2008). Through this monopolistic view, the knowledge produced for well-established and well-resourced societies is shared with other countries where the local dynamics would lead to totally different research outcomes. Hence, although HE systems claim to be international by their very nature, in reality, the knowledge produced does not always reflect the international community’s needs. As a result, contrary to the expected claims, HE turns out to be a mechanism reproducing the power imbalance across the center and periphery in the global context (Khoo, 2011; Moseneaga & Agergaard, 2012). Liu, Liu, Jiang, Lin, and Xu (2019) indicated that focusing too much inward and being Western-oriented leads to a repetitive focus on research themes serving the Western context. Mason and others (2021) documented the Western hegemony in the field of HE stating that “‘the west’, and the USA more specifically has become a ‘default’ context for research is illustrated not only by its own dominance in journal communities, but also through the assumption that regional nomenclature (as in ‘the midwest’) is universally known, and the widespread lack of reporting of geographical context” (p. 12).

From an individual academic’s perspective, IRC is a source of reputation for academics and a basis of legitimacy for HE organizations. Kwiek (2020) argued that IRC is a decisive stratifying factor for researchers as it generates more resources and prestige. However, the prestige of international research does serve not only individual academics but also HE organizations. IRC is a source of professional recognition for academics (Kwiek, 2016; Wagner & Leydesdorff, 2005), which helps to secure more research funds (Jeong, Choi, & Kim, 2014). In that sense, IRC is a source of legitimacy for the institutions (Horvath et al., 2000). On the other hand, IRC is seen as a powerful approach to increase the impact of research. Recent trends and developments in HE organizations’ social and economic surroundings put more and more pressure on academics for increased quality and quantity in their research output. The impact of academic research has been a valued indicator of the research quality, and collaboration with international scholars is indicated as an effective way of improving research impact (Kwiek, 2018). As a result, national and international research funding agencies have adopted policies that foster international collaboration in research. One of the responses of the academics to the pressure for research output is international collaboration in research.

As we elaborate later in the upcoming sections, with all the increasing pressures for academics and institutions given above, IRC has become a prominent issue of inquiry in a multi-factor concept gaining importance both in Türkiye and the world. Given this, the purpose of our study is to examine factors related to IRC in Turkish HE according to academics' attitudes. Based on the Türkiye stage of an international survey, we investigate the relationships between IRC and individual, professional, and institutional factors. For this purpose, we seek the answers to the following specific research questions (for Turkish academics):

- Is there a significant association between IRC and selected individual, professional, and institutional factors?
- Which individual, professional, and institutional factors are significantly related to IRC?

## Theoretical Considerations

### Complexity Theory

Factors contributing to IRC are located at different levels (individual, institutional, national, and transnational). The patterns causing IRC on the part of the researchers result from the complex interaction of these factors in a country and institutional context. In other words, factors giving way to IRC are multiple and located at various levels such as academic discipline, the institutions' strategic orientation, and national policies and reward systems in these policies. As a result, we believe the concepts of complexity theory (e.g., self-organizing, non-linearity, emergence, continuous adaptation) inhabit the intricacies embodied in the IRC (Melin, 2000; Wagner, 2018; Wagner & Leydesdorff, 2005).

Complexity theory asserts that chaotic situations can create order, and there is an order in disorder (Patton, 2002). Relying on the observations on what looks like highly disorganized entities such as atoms, a colony of ants, a flock of birds, and the stock market, complexity theory argues that there is an order and harmony in the behaviors of these entities (Coveney & Highfield, 1995). Specific properties of complexity theory such as self-organizing, continuous adaptation, non-linear progression, and the emergence of novelty make complexity theory applicable to explain IRC. Here, we consider the concept of self-organizing particularly instrumental in explaining the dynamics of IRC. Applying self-organizing to IRC suggests that the academy's general rules exist subconsciously, and individual academics follow the general rules in regulating their actions. According to Coleman (1999), a complex system needs a simple rule and a goal to enable the system to operate without external control, direction, and guid-

ance. Random variations push individual members of a system (in our case, academics in universities) to react to variation in their environments, make a decision and find a direction. As a result, the self-organizing principle guides the individual to operate without any systematic external imperative.

Several scholars advanced self-organizing systems to explain IRC as a powerful theoretical tool (Kwiek, 2020; Melin, 2000; Wagner, 2018; Wagner & Leydesdorff, 2005). The concept emphasizes that academics individually determine their professional orientation and the focus of their academic activities; thus, individual motivation drives academics towards reputation and resources (Wagner & Leydesdorff, 2005). As such, academics often create their occasions of collaboration, typically international scientific meetings. Hence, IRC can be considered a self-organizing activity of dynamic networks, where the IRO facilitates the collaboration of researchers (Wagner, 2018).

### Motivation in the Academic Profession and Factors Powering IRC

Motivational factors for scholars to carry out academic work can be grouped under two categories: internal and external (Eimers, 1997). Internal factors include intrinsic motivations like producing meaningful work, helping students and society for the public good, and scientific activities led by intellectual curiosity or performed to expand disciplinary knowledge. On the other hand, external factors are more closely associated with institutional and environmental features such as leadership and material support, recognition and rewarding mechanisms, and tenure and promotion opportunities (Eimers, 1997; Kezar, Maxey, & Holcombe, 2015). As Eimers argues (1997), although internal factors appear more motivating in several circumstances, external motivations are also vital in maintaining academics' scholarly activities in HE.

When it comes to IRC, both internal and external motivations lead academics. Several scholars (Kyvik & Larsen, 1994; Kwiek, 2020; Wagner, 2018) indicated that individual, professional, institutional, national, and transnational factors drive academics to develop IRO and become involved in IRC. Finkelstein, Walker, and Chen (2013) asserted that internationalization is undeniably related to individual academic value systems and priorities. Given the individualized nature of the academic profession and professional autonomy, a top-down imperative may not be consistently effective in redirecting the focus of academics from local to international orientation in research. Furthermore, as IRC means better chances to publishing and more prestige, it may bring a better position in stratification (Hoekman, Frenken, & Tijssen, 2010). However,



the researcher needs a critical mass before becoming visible to other scholars and attracting other scholars' attention to collaborating with (Kyvik & Larsen, 1994).

*Academics' individual and professional backgrounds* play a significant role in developing an IRO and involving in IRC. Research has shown that middle-aged man academics with higher positions often tend to become more involved in IRC (Kwiek, 2018; Rostan, Ceravolo, & Metcalfe, 2014; Vabø, Padilla-Gonzalez, Waagene, & Naess, 2014; Fox, Realff, Rueda, & Morn, 2017). Kwiek (2020) elaborated on the characteristics of international collaborators. He stated that internationalists are, in general, males with longer academic experience and higher academic positions, who spend most of their time on academic and administrative tasks rather than teaching. As a result, the internationalists appear concerned with producing knowledge for the international market and the local one (Kwiek, 2020).

Several scholars indicated the discipline as another factor that contributes to international cooperation. For instance, academics in natural sciences collaborated more than researchers in social science and professions (Finkelstein & Sethi, 2014). Moreover, the discipline often regulates international orientation, international qualification, and international behaviors (cooperation) (Horvath et al., 2000). Furthermore, reward systems operate differently in different disciplines. "The structure of reputational audiences" which varies by the social dynamics of the discipline, is a determinant factor in IRO (Kwiek, 2018, p.139). According to Kyvik and Larsen (1997), each academic discipline constructs its value system and research conduct. More importantly, the stakeholders of academic disciplines determine the demand for knowledge.

*In terms of institutional factors*, organizational culture and the value attributed to IRC in the culture are considered other IRC drivers. The enactment of IRC needs institutional leadership and a culture that embodies international cooperation as a norm. As a result, the institutional culture and leadership are two institutional ingredients that mobilize individual disposition on international orientation (Horvath et al., 2000). Furthermore, the strategic orientation of the institution and reward structure contribute to IRC (Horvath et al., 2000). Research university initiative is indicated as a factor in the international orientation of academics (Kwiek, 2020). Research-based university rankings have recently put mounting pressure on institutions to change their strategic orientation, which also pressures academics for IRC individually. As a result, reputation, resources, culture, and strategic orientation constitute another set of institutional factors driving indi-

viduals toward IRC (Hoekman et al., 2010). Here, it is also essential to indicate the role of resources provided by the institution in the IRC of academics. There is a cost associated with building and maintaining IRC, and the willingness of the institution to cover this cost encourages the academics to build IRC. In other words, individual academics tend to trade off pure local orientation for IRC (Kwiek, 2020).

*National/regional policies* are also seen as drivers of IRC. The country's geopolitical position, history, language, cultural traditions, size, wealth, and geographical distance are some national variables that may play a role in the IRC of academics (Hoekman et al., 2010). Besides, the status of international research in the governmental policies and priorities may play a motivational role for academics to become involved in IRC. Finally, regional policies may also play a role in the international orientation of individual academics. The most prominent example of regional policies is the EU's policies designed to promote IRC in every field of sciences (Kwiek, 2019).

### The Context: IRC in Turkish HE

The Turkish HE appears as a highly centralized national system where governmental policies considerably influence academic work and academics' efforts towards IRC. The system is governed mainly by the Council of Higher Education (CoHE; YÖK in Turkish). The CoHE is a governmental body that has the constitutional authority to determine the route of HE at the national level, develop macro-level strategies, and channel universities to adapt their administration, teaching-learning, and research to these macro-level routes and strategies. The Council also monitors and supervises the actions implemented in universities to ensure the effective use of resources. In doing so, the Council uses its legislative power on several critical issues such as academic staff capacity, personnel operations, academic program openings, and budgeting (Official Gazette, 1981). Hence, CoHE's directive regulations influence university administrators' and academics' daily and long-term academic and professional activities.

Holding all this authoritative power, the CoHE has recently increasingly promoted IRC as a part of the strategy aiming to improve internationalization of the Turkish HE. For instance, in its 2014 report, the CoHE emphasized the importance of expanding academic staff mobility to increase the effectiveness of national research collaboration programs (Çetinsaya, 2014). In 2015, tenure criteria were renewed by endorsing research projects conducted collaboratively with international partners through the European Union programs (Uslu, Calikoglu, Seggie, Gümüş, & Kondakci, 2021). In 2017, the CoHE announced the national 2018–2022 strategy



on the internationalization of Turkish HE, determining the expansion of international collaboration in Turkish universities as one of the main goals in the national internationalization strategy (CoHE, 2017). Part of this strategy includes increasing the numbers of (i) programs established jointly with strategically chosen foreign countries, (ii) research projects and scientific activities through international exchange programs, and (iii) mutual collaboration and exchange agreements with foreign governments and supranational bodies (CoHE, 2017). Similar to the CoHE, The Scientific and Technological Research Council of Türkiye (TÜBİTAK), the main governmental research funding body at the national level, initiates additional programs to expand collaborative research and scientific events carried out at an international level (TÜBİTAK n.d.a, n.d.b). Furthermore, tenure criteria were renewed by promoting research projects conducted collaboratively with international partners through the European Union programs (Interuniversity Council of Türkiye [ÜAK], 2021). In parallel with these developments, many universities included publications or projects through IRC activities into their appointment and promotion criteria as the expected academic productions (Uslu et al., 2021).

With the influence of global trends and national expectations, one can notice a noteworthy increase in the ratio of internationally co-authored research outputs originating from Türkiye rose from 16.67 percent in 2009 to 24.96 percent in 2019 (ScimagoJournalRanking[SJR], 2020a). This noteworthy increase, however, may not be witnessed in all science subjects in the same period. For instance, only a slight increase occurred in the Arts and Humanities (16.17% to 19.29%) and the Computer Sciences (24.7% to 27.41%). Moreover, a decrease in internationally co-authored publications was witnessed in some areas (e.g., 35.62% to 24.42% in Decision Science) (SJR, 2020a). Furthermore, some of the countries with which Türkiye competes in scientific production have achieved to increase their rate of internationally co-authored publication output more than Türkiye did, and they are still ahead (e.g., Iran: 27.9%, Poland: 35.25%, Taiwan: 37.87%) (SJR, 2020b).

Despite the promotion strategies and a noteworthy increase in the ratios, challenges regarding IRC exist in Turkish HE. From a national viewpoint, as the CoHE (2017) states, language appears as a barrier because the number of academic and institutional staff with sufficient foreign language skills is still inadequate. Here, the CoHE's internationalization strategies on IRC are criticized for its quantitative focus, prioritizing the position in rankings, the number of projects, or bilateral cooperation agreements for universities centrally, without sufficiently addressing the specific needs

and expectations of institutions, departments and academics (Vural Yılmaz, 2016a). This centralized type of governing can sometimes lead to the inefficient implementation of policies or bureaucratic burdens at meso and micro-level and discourage academics from maintaining their interest in IRC (Selvitopu & Aydın, 2018). In addition, given that Turkish HE has witnessed a rapid expansion in the past two decades, many universities are still establishing their organizational structure (Özoglu, Gür, & Gümüş, 2016). This continuing establishing process often creates difficulties in creating and maintaining institutional networks for internationalization, thus, for IRC (Vural Yılmaz, 2016b). Perhaps confirming this challenge, the CoHE (2017) emphasizes that expanding institutional capacity is one of the critical goals in the national strategy for internationalization. Furthermore, IRC is considered a concept often influenced by other stakeholders (e.g., governments, funders, supra-national organizations) and agendas (e.g., global economy, international politics, regional/global security (Bammer, 2008). Therefore, beyond all the national challenges given above, the instability and the security problems in the region that Türkiye is located also can play a hindering role in expanding IRC (COHE, 2017).

Overall, while a national strategy has been initiated and a notable increase has been witnessed in some cases, IRC still appears a critical area of inquiry in Turkish HE. Infrastructural problems in HE institutions and the fluctuations in internationally co-authored publication ratios imply that strategy development related to IRC requires going beyond general programs and centralized solutions. Thus, the role of diverse individual, disciplinary, professional, and institutional characteristics should be considered. Also, since IRC often leads to an increased amount of scientific production (Abramo, D'Angelo, & Solazzi, 2011; Gazni, Sugimoto, & Didegah, 2011; Kwiek, 2020), identifying the factors significantly related to IRC appears critical for policymakers and institutional leaders in Turkish HE and similar country cases.

## Method

### Research Design

We employed a survey design to investigate the factors influencing IRC in Turkish HE from the micro-level perspective (i.e., based on academics' individual attitudes and behaviors instead of secondary data; Kwiek, 2015). Survey design allows researchers to understand the opinions and trends related to a specific phenomenon by studying the phenomenon in a sample derived from the population. Hence, through quantitative data, surveys enable generalizations and conclusions about the trends in the population related to the examined phenomenon



(Creswell, 2014). Based on previous literature and pertinent items in the Academic Profession in the Knowledge-Based Society (APIKS) Questionnaire, we identified individual (gender, age group), professional (doctoral degree gained abroad, academic title, discipline, the academic's orientation toward teaching and research, research orientation), and institutional (university's type and date of establishment) factors. Then we examined the relationship between these factors and IRC.

### Population and Sample

The target population for the study was the academics employed in Turkish HE institutions in the 2017–2018 academic year (158,098; CoHE, 2018). We employed a stratified sampling (Ary, Jacobs, Razavieh, & Sorensen, 2010) to represent institutional and individual diversity in the sample. We considered balance in determining the potential participants' institutions, a balance regarding the geographical region, type

(e.g., public, foundation), and dates of the establishment (e.g., before 1992, 1992–2005, after 2005; Özoglu et al., 2016) (See project website for the ethical and application approvals from the selected institutions; APIKSTR, 2020). As a result, the sample for APIKS Türkiye data is composed of 1810 academics from 78 (67 public, 11 foundation) universities and holding different academic titles. For the current study, the data gathered from the participants who were actively participated in research activities in the year of data collection or the previous academic year and responded to the APIKS Questionnaire Item “Do you collaborate with international colleagues?” were used ( $N=1554$ ; Yes=756, 48.6%; No=798, 51.4%). ■ Table 1 demonstrates the participant demographics of the current study, the APIKS sample, and the population.

As seen in ■ Table 1, both the APIKS Türkiye sample and the sample for the current study represent the variety in

■ **Table 1.** The sample and population demographics.

Variable	Group	Participants actively engaged in research and marked IRC question		APIKS sample		Population*	
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Gender	Female	802	51.6	905	50	70,235	44.4
	Male	751	48.3	904	49.9	87,863	55.6
	Missing	1	.1	1	.1	-	-
Academic title	Professor	360	23.2	401	22.2	24,640	15.6
	Assoc. Prof.	368	23.7	402	22.2	14,456	9.1
	Assist. Prof.	428	27.5	512	28.3	37,520	23.7
	Lecturer	269	17.3	321	17.7	35,484	22.4
	Research Assist.	123	7.9	166	9.2	45,998	29.2
	Other	6	.4	8	.4	-	-
Institution type	Public	1,327	85.4	1,540	85.1	134,689	85.2
	Foundation	227	14.6	270	14.9	23,409	14.8
University's date of establishment	Pre-1992	785	50.5	896	49.5	NA	
	1992–2005	437	28.1	516	28.5		
	Post-2005	325	20.9	391	21.6		
	Missing	7	.5	7	.4	-	-
Geographical region of the university	Mediterranean	149	9.6	170	9.4	NA	
	East Anatolia	105	6.8	130	7.2		
	Aegean	252	16.2	288	15.9		
	Southeast Anatolia	53	3.4	67	3.7		
	Central Anatolia	480	30.9	558	30.8		
	Black Sea	136	8.8	167	9.2		
	Marmara	377	24.3	428	23.6		
	Missing	2	.1	2	.1	-	-

Source: CoHE, 2018. NA: data not available.

terms of individual and institutional demographics witnessed in the population. In addition to including participants from the selected stratum, the sample demonstrates a balanced variety in terms of several individual characteristics (e.g., gender, academic title) that strengthened the representativeness, which kept the effect of non-response bias to a minimum (Stoop, 2012). Therefore, the sample was deemed sufficient to represent the academics employed in Turkish HE with a 99% confidence level and  $\pm 3$  confidence interval (Cohen, Manion, & Morrison, 2007).

### Data Collection and Analysis

The data of this study was collected in the APIKS project. APIKS project is the third wave of the 1992 Carnegie and 2007 Changing Academic Profession (CAP) studies. It examines the evolving role and responsibility of academics through an international and comparative lens with more than 20 countries (APIKSTR, 2020). The APIKS Questionnaire includes more than 300 items/sub-items in eight sections (e.g., career and professional situation, general work situation, teaching, research, external activities, governance and management, academics in formative years, and personal background). For the current study, we used whether the participant collaborates with international colleagues in research as the dependent variable and other related items from the career and professional situation, governance and management, and personal background sections as independent variables. Türkiye stage of the APIKS data

was collected online in the 2017–2018 academic year (see APIKSTR, 2020 for more details).

We utilized descriptive (e.g., frequency, percentage), and inferential (Pearson chi-square test of association) analysis techniques for the first research question. We presented analysis results for this question with cross-tabulation to visualize a better comparison of the sub-groups. During the chi-square analyses, the assumption requiring that the minimum cell expected values to be at least five was ensured (Field, 2013). For the second research question, we run a binary logistic regression. “Collaborating with international colleagues in the research activities” (Yes/No) question was considered the categorical dependent variable, while relevant items from other sections were considered independent. We tested the significance at the .05 level (Field, 2013) in both chi-square and logistic regression analyses.

## Results

### Descriptive and Inferential Findings

**Individual factors:** ■ Table 2 demonstrates significant associations between IRC and selected individual factors.

According to ■ Table 2, while establishing IRC is not significantly associated with gender, there is a significant association between age group and IRC. The contingency values show that the highest percentage of internationalists are in the age group of 60 and above. Moreover, for all age groups of 40

■ **Table 2.** Associations between IRC and individual factors (*n* and % within each row).

			IRC		Total
			Yes	No	
Gender*	Male	<i>n</i>	348	403	751
		%	46.3%	53.7%	100.0%
	Female	<i>n</i>	408	394	802
		%	50.9%	49.1%	100.0%
Age group†	<30	<i>n</i>	32	73	105
		%	30.5%	69.5%	100.0%
	30–39	<i>n</i>	261	304	565
		%	46.2%	53.8%	100.0%
	40–49	<i>n</i>	282	265	547
		%	51.6%	48.4%	100.0%
	50–59	<i>n</i>	130	117	247
		%	52.6%	47.4%	100.0%
	60 and above	<i>n</i>	47	37	84
		%	56.0%	44.0%	100.0%

\**N*=1553;  $\chi^2=3.192$ ; *p*=.074; †*N*=1548;  $\chi^2=20.451$ ; *p*=.000.



and above, the majority of the respondents establish research collaboration at an international level. However, most of the participants appear as localists for the age groups of below 30 and 30–39. Therefore, IRC in Turkish HE is witnessed at higher percentages, especially among academics who are 40 years old or above.

**Professional factors:** ■ Table 3 demonstrates significant associations between IRC and selected professional factors.

As shown in ■ Table 3, although there is no significant association between IRC and academic discipline, IRC is significantly associated with professional factors, including doctoral degree, having an academic orientation towards either teaching or research, and academic title. The percentages demonstrate that most of the participants who did not hold a doctoral degree or gained their doctoral degree in Türkiye

were localists; however, the percentage of the internationalists are the majority among the participants who gained their doctoral degree abroad. In terms of academic orientation, most of the participants leaning on teaching appeared as localists, while nearly three quarter the participants favoring research were internationalists. Concerning the academic title, professors were the group who established IRC at the highest percentages among all titles. Similarly, most of the associate professors appeared as internationalists. However, most of the participants appear as localists for the academic titles of assistant professor, research assistant, and lecturer. Overall, these results indicate that IRC is witnessed more among academics who obtained their doctoral degree abroad, favor research instead of teaching, and have higher academic titles.

**Institutional factors:** ■ Table 4 demonstrates significant associations between IRC and selected institutional factors.

■ **Table 3.** Associations between IRC and professional factors (*n* and % within each row).

			IRC		Total
			Yes	No	
Doctoral degree*	No degree	<i>n</i>	81	162	243
		%	33.3%	66.7%	100.0%
	Earned in Türkiye	<i>n</i>	540	579	1119
		%	48.3%	51.7%	100.0%
	Earned abroad	<i>n</i>	124	44	168
		%	73.8%	26.2%	100.0%
Academic orientation <sup>†</sup>	Teaching	<i>n</i>	164	242	406
		%	40.4%	59.6%	100.0%
	Research	<i>n</i>	592	556	1148
		%	51.6%	48.4%	100.0%
Discipline <sup>‡</sup>	Arts & Hum & Soc. Sci.	<i>n</i>	294	326	620
		%	47.4%	52.6%	100.0%
	Med & Health Sci.	<i>n</i>	173	203	376
		%	46.0%	54.0%	100.0%
	STEM	<i>n</i>	289	269	558
		%	51.8%	48.2%	100.0%
Academic title <sup>§</sup>	Lecturer	<i>n</i>	49	74	123
		%	39.8%	60.2%	100.0%
	Res. Assist.	<i>n</i>	90	179	269
		%	33.5%	66.5%	100.0%
	Assist. Prof.	<i>n</i>	191	237	428
		%	44.6%	55.4%	100.0%
	Assoc. Prof.	<i>n</i>	205	163	368
		%	55.7%	44.3%	100.0%
	Prof.	<i>n</i>	217	143	360
		%	60.3%	39.7%	100.0%

\**N*=1530;  $\chi^2=65.453$ ; *p*=.000; <sup>†</sup>*N*=1554;  $\chi^2=14.990$ ; *p*=.000; <sup>‡</sup>*N*=1554;  $\chi^2=3.630$ ; *p*=.163; <sup>§</sup>*N*=1548;  $\chi^2=58.272$ ; *p*=.000.



**Table 4.** Associations between IRC and institutional factors (*n* and % within each row).

			IRC		Total
			Yes	No	
Institution type*	Public	<i>n</i>	627	700	1327
		%	47.2%	52.8%	100.0%
	Foundation	<i>n</i>	129	98	227
		%	56.8%	43.2%	100.0%
University's date of establishment <sup>†</sup>	Pre-1992	<i>n</i>	387	398	785
		%	49.3%	50.7%	100.0%
	1992–2005	<i>n</i>	226	211	437
		%	51.7%	48.3%	100.0%
	Post-2005	<i>n</i>	138	187	325
		%	42.5%	57.5%	100.0%

\**N*=1554;  $\chi^2=7.119$ ; *p*=.008; <sup>†</sup>*N*=1554;  $\chi^2=6.753$ ; *p*=.034

As Table 4 shows, IRC is significantly associated with both institution type and university's date of establishment. The percentages demonstrate that most of the respondents from public universities were localists, while the majority appeared as internationalists in foundation universities. Moreover, the percentages of internationalists and localists were roughly equal in both universities established before 1992 and between 1992–2005. However, the localists outnumbered the internationalists for the universities established after 2005. These results indicate that IRC is more common among academics in foundation universities, while most of the academics in the universities established after 2005 tend not to collaborate at the international level.

### Logistic Regression Results

Although the descriptive and inferential analyses above provided a basic understanding of the associations between IRC and individual, professional, and institutional factors, logistic regression results in this section revealed factors that had a significant relationship with IRC. Here, in order to provide a more comprehensive examination, we took into account the studies and regression models produced from previous sets of the APIKS data (Cummings & Finkelstein, 2012; Finkelstein & Sethi, 2014; Kwiek, 2014, 2015; Rostan et al., 2014) and included additional variables (e.g., *variable*: research orientation, *values*: applied, social-oriented, international in scope and multidisciplinary; *variables*: institutional opportunities related to internationalization, opportunities for faculty members to undertake research abroad, opportunities/funding for visiting international scholars, *values*: Likert-type question 1: Strongly disagree to 5: Strongly agree) that may influence

IRC. Table 5 demonstrates the logistic regression results regarding the relationship between IRC and individual, professional and institutional factors.

As presented in Table 5, there was no significantly influential individual factor. However, several professional and institutional factors had a significant relationship with IRC. In terms of professional factors, the odds ratios indicated that holding a doctoral degree earned in Türkiye instead of from abroad and an academic orientation towards teaching rather than research had a negative relationship with IRC. These results imply that a doctoral degree abroad and the orientation towards research more than teaching hold critical importance in enhancing IRC for Turkish academics. On the other hand, a professorship title and an orientation towards multidisciplinary or international research in scope had a positive influence on IRC. Furthermore, significant institutional factors on IRC included institution type, which revealed that being employed at a public university negatively influenced IRC.

### Discussion and Conclusion

The increasing international orientation towards research in HE has led governments and institutions to place stronger emphasis on the internationalization of research. In addition, the nature of academic work has changed because of a more competitive job market rewarding professional activities at the international level. Thus, academics in many countries have become more involved in IRC through several individual, professional, and institutional factors. This study demonstrates that Turkish academics are no exception to this changing environment, and several individual, professional, and institutional factors are influential regarding their IRC.



**Table 5.** Relationships between IRC and individual, professional and institutional factors.

Independent variable		Value	B	SE	Wald	p	OR
Individual	Gender	Male	-.182	.118	2.395	.122	.834
		Female					
	Age group	<30	.143	.424	.114	.736	1.154
		30–39	.396	.324	1.496	.221	1.486
		40–49	.264	.297	.787	.375	1.302
		50–59	-.016	.294	.003	.956	.984
	60 and above (ref)			4.409	.353		
Professional	Doctoral degree	No degree	-1.192	.292	16.663	.000	.304
		Earned in Türkiye	-.977	.207	22.262	.000	.376
		Earned abroad (ref)			23.826	.000	
	Academic title	Professor	.893	.276	10.441	.001	2.443
		Assoc. Prof.	.467	.248	3.550	.060	1.595
		Assist. Prof.	-.033	.241	.019	.891	.967
		Research Assist.	-.239	.256	.871	.351	.787
		Lecturer (ref)			26.137	.000	
	Discipline	STEM	.091	.152	.360	.548	1.095
		Medical & Health Sci.	-.247	.160	2.370	.124	.781
		Arts & Hum. & Soc. Sci (ref)			4.803	.090	
	Academic orientation	Teaching	-.289	.133	4.729	.030	.749
	Research orientation	Applied/practical	-.010	.054	.032	.858	.990
		Social	.025	.046	.292	.589	1.025
		International in scope	.435	.047	85.349	.000	1.545
Multidisciplinary		.169	.053	10.273	.001	1.184	
Institutional	Institution type	Public	-.430	.184	5.443	.020	.650
		Private					
	University's date of establishment	Before 1992	.276	.159	3.015	.083	1.318
		1992–2005	.266	.165	2.602	.107	1.305
	After 2005 (ref)			3.477	.176		
Opportunities for faculty members to undertake research abroad			.082	.061	1.799	.180	1.085
Opportunities/funding for faculty members to attend international conferences abroad (F65)			.000	.057	.000	.995	1.000
Constant			-1.495	.550	7.390	.007	.224
-2LL			1819.150				
Nagelkerke R <sup>2</sup>			.221				
N*			1511				

\*Missing values included the respondents (I) who were not active in research, (II) who marked their academic title as 'other', and (III) other cases determined by the analysis software due to the null responses in selected variables.

The current research illustrates that age group and academic title are key individual and professional factors associated with IRC in Turkish HE. According to the findings, academics over 40 years of age tend to establish IRC more than their colleagues who are between 20–40 years old. In addition, the age group 60 and above is the most active in terms of establishing IRC. Moreover, academic staff holding professor or associate professor titles tend to collaborate at the international level more than academics owning other titles. Consistent with previous studies, these findings demonstrate that IRC is

more common among older academics and those holding higher titles (Horvath et al., 2000; Kwiek, 2020), indicating the role of age, position, and seniority in establishing IRC. As Kwiek (2020) argues, academics with higher titles often hold administrative positions in their institutions and spend less teaching time while they can devote much more effort to research. These may turn into advantages that can facilitate international collaboration opportunities. Furthermore, creating international networks that help academics establish IRC often takes time, and senior academics with longer experience



may benefit from broadened international networks in their efforts toward IRC (Çalikoğlu, 2017; Kwiek, 2020). On the other hand, these results imply that it is worth further investigation whether junior academics' lower interest in IRC is intentional or suffering from difficulties regarding their position. If the second is the case, it is critical to support junior academics' international networking efforts through financial and bureaucratic mechanisms. Furthermore, more just distribution of teaching loads and other time-consuming administrative duties may be considered in departments so that junior academics make more room for IRC in their schedules.

The results reveal that professional factors significantly related to IRC include the academic title and a doctoral degree obtained abroad and an orientation towards research that is especially multidisciplinary or international in scope. The importance of gaining a graduate degree abroad in academics' involvement in international activities has been discussed by several authors (e.g., Calikoglu, Lee, & Arslan, 2020; Finkelstein & Sethi, 2014). These authors asserted that earning doctoral degree abroad is influential in expanding academics' own international network and institutional international collaboration. Because of their international graduate experiences and already established networks, academics who obtained doctoral degrees abroad are often seen as key persons enhancing their institutions' international horizon. Thus, they tend to continue carrying out scholarly work with an increased global orientation at their institution. Here, our research has also revealed the importance of multidisciplinary research orientation in increasing IRC, which is rarely argued in the related literature to the best of our knowledge. The complex nature of recent social and scientific challenges puts pressure on governments and institutions. Thus, researchers from different disciplines or with specializations are encouraged and incentivized by policymakers and administrators to gather and collaborate (Abramo, D'Angelo, & Di Costa, 2018). Based on our findings, we suggest that governments and HE institutions increase the promotion of multidisciplinary studies and combine it with internationalization efforts by encouraging research teams that consist of scholars from different countries to expand IRC and help overcome global challenges.

Our study illustrates that academics' IRC is also associated with institutional factors, including the university's date of establishment and institution type. The findings show that IRC is less common among academics in younger institutions. Furthermore, we found a negative relationship between IRC and working at a public university, while academics in foundation universities tend to establish IRC more than their peers in public institutions. Due to increasing massification, many

younger HE institutions suffer from insufficient physical and financial infrastructure and lack capable academic and administrative human resources. Newly established universities in Türkiye are no exception to this (Özoglu et al., 2016). Thus, considering especially the importance of the infrastructure and resources in enhancing IRC, the results regarding newly established universities appear as no surprise. This finding, however, triggers the question of whether the CoHE's internationalization strategies prioritizing primarily quantitative outcomes (CoHE, 2017; Selvitopu & Aydın, 2018) can be equally applicable at every university. Thus, we recommend policymakers and administrators develop measures to enhance the infrastructural capacity and resources at universities suffering from capacity deficiencies to stimulate IRC efforts of academics.

Furthermore, it is worth investigating the reason behind the difference between public and foundation universities regarding institution type. Due to increasing competition and students' changing needs in the global HE market, non-public institutions (e.g., foundation universities in Turkish case) seek ways to expand their international networks and expect their academics to act accordingly (Altbach & Knight, 2007). In addition, Vural Yılmaz (2016b) argues that foundation universities in Türkiye tend to have broader internationalization strategies since they are primarily located in metropolitan cities and benefit this location while attracting international students and scholars. For these reasons, academics employed in Turkish foundation universities may be more interested in establishing IRC. On the other hand, considering the finding of a negative relationship, it is crucial to mitigate the challenges regarding IRC in public universities. Like their peers in foundation universities, academics in public HE institutions have to deal with the competitive changes in scholarly work requiring more publishing and collaborating at the international level (Huang, 2014). However, the segregation resulting from the rapid expansion of Turkish HE has widened the debate on the governance model of Turkish universities', especially public ones', in terms of their institutional autonomy and the balance of power relationship between them and CoHE as the top coordinating body (Çelik & Gür, 2014; Kurt, Gür, & Çelik, 2017). Even CoHE itself labels Turkish HE as a highly centralized system and considers this a weakness in its strategic plan (CoHE, 2015). At this point, one can expect the fragmentation in needs, expectations, and priorities of Turkish public universities should also be reflected in these universities' internationalization strategies. However, prior research has indicated that consistent with the CoHE's quantitatively-driven internationalization goals, most public universities develop ambitious strategies focusing on increasing numeric indicators with-



out insufficient consideration of their resources and distinctive characteristics (Çalkoğlu & Bulut Şahin, 2018; Vural Yılmaz, 2016a). Given the importance of academics' self-motivation in establishing IRC (Finkelstein et al., 2013), this isomorphic perspective may discourage academics employed at public universities from establishing IRC. Therefore, we recommend that policymakers make more room for public universities to develop and implement their internationalization strategies more autonomously and constitute sustainable financial and bureaucratic mechanisms to support academics. We also suggest university administrators pay more attention to prioritizing divergent IRC strategies considering their own regional and institutional conditions and their academics' needs and interests.

Our findings have brought significant implications also for IRC in Turkish HE and similar country cases. First, despite the increasing pressure of globalizing trends to internationalize more, roughly half of the participant Turkish academics tend not to establish IRC. This is contrary to Smeby and Gornitzka's (2008) argument that in the era of globalization, all academics are cosmopolitans due to either individual motivations or global and national trends. Here, it is critical to note that successful IRC and networking require several prerequisites, including the researcher's motivation or willpower to collaborate and financial and material resources in the researcher's work environment. In addition, the researcher has to be sufficiently attractive for the scholars in other countries to collaborate, and those resources are critical to increasing the said researcher's attractiveness for her/his international colleagues (Smeby & Gornitzka, 2008). As a limitation of the current study, we have no answer to why localists in the current study do not establish IRC. It might be because of personal and disciplinary reasons or being oriented more towards national collaboration rather than international. These participants may also face difficulties in their attempts to widen their international networks. Nevertheless, one can notice that, like in many developing countries, HE authorities in Türkiye prioritize internationalization as a national policy and constitute ambitious strategies to expand IRC (CoHE, 2017). Our study has shown that, to achieve this aim, it is critical to improve the conditions in the working environment for motivated academics who cannot reach sufficient resources for IRC. This can help internationalist academics broaden their networks and make the entire HE system more attractive to academics and institutions in other countries.

Second, unlike previous studies demonstrating the segregated nature of IRC in terms of gender (Kwiek, 2020; Vabø et al., 2014) and academic fields (Kwiek, 2018; Rostan et al., 2014), we found no significant associations between gender,

discipline, and IRC. However, consistent with previous research (e.g., Kwiek, 2020), IRC segregation exists in Turkish HE based on academic titles, age groups, and university types. Academics with higher titles, aged above 40 and employed in foundation universities tend to establish IRC more than their colleagues. As we elaborated earlier, age and seniority/higher academic titles come together in many HE systems and this might be the case also in Türkiye. Additionally, those with higher academic titles, especially professors, often are more visible, experienced, powerful, and attractive in their institutions which may facilitate them to gain or maintain the resources to keep their international networks alive and widening (Kwiek, 2020). However, due to the rapid increase in the number of newly established programs and institutions in Turkish HE, lower academic titles constitute a vast majority (i.e., more than three quarters) of the total academic staff population (■ Table 1). This situation also appears similar to being employed in public universities, which we found negatively related to IRC and whose numbers are high in newly established institutions (Özoglu et al., 2016). IRC has been approached to legitimize the revenue and reputation-oriented strategies for internationalization in many countries, which may lead to a more segregated and unequal HE globally (Calikoglu et al., 2020; de Wit, 2019). Our study has demonstrated that this risk should also be borne in mind for Turkish HE. Thus, for a more inclusive internationalization, we suggest that HE decision-makers in Türkiye and similar countries consider taking measures to lower the segregation in IRC. Specific governmental scholarships to host international scholars in public universities for collaboration and extended financial support for junior academics' international mobility may help overcome this risk. These measures are also crucial because empowering IRC may serve to overcome the established hierarchies and Western domination in research and lead to a more equal and collaborative HE environment globally (Arnett, 2016).

Our study has corroborated the existence of complex and contradictory relationships observed in IRC. As noted earlier, despite all the globalizing forces, many academics tend not to collaborate at the international level, either because of their preference or difficulties hindering them. However, IRC occurs for more than half of the participants through several individual, professional, and institutional factors. For a broader understanding of the nature of IRC, one of the critical matters here would be how these academics establish, maintain, and expand their collaboration. For this purpose, as argued in Wagner and Leydesdorff (2005), it is essential to further investigate to what extent and how these collaborations are driven by top-down, organized reward mechanisms and bottom-up,



self-organized participatory actions. Investigating this can help government and policymakers channel material and financial support in a more systematic and efficient way, and help researchers depict a more nuanced interpretation of IRC.

This study examined factors influencing IRC in Turkish HE based on academics' attitudes and behaviors. Although our analysis showed significant associations between several factors and IRC, one should bear in mind the limitations of the current research while interpreting the results. First, our study is based on the Turkish context. Although global trends have a critical influence on HE systems worldwide, with its historical characteristics and governmental and legislative regulations, the national context still tends to play a unique determinative role in attitudes, beliefs, and behaviors of academics and the administration of universities (Marginson, 2021). Based on our best effort, we discussed some of the contextual factors that can influence our findings; however, the possibility of additional influential factors related to the Turkish context should be noted. Second, due to the structure of the APIKS questionnaire, we used a yes/no question to gather the responses regarding establishing IRC. Thus, our study is limited in examining more detailed patterns and outputs of IRC (e.g., co-author analysis, target country, region, and journal analysis) in Turkish HE. Researchers can carry out bibliometric studies to examine such patterns further. Third, we chose the factors we examined in this study by considering the intersection of the previous literature and related APIKS questionnaire items. There might be additional factors influencing academics' IRC. Further studies can focus on these additional factors at individual, professional, institutional, and national/international levels. These factors can also be examined through a qualitative design to explore how IRC occurs at the individual, disciplinary and institutional levels in more detail.

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