

Academic Profession and Gender among Academics in Formative Stages: International trends and successful public university strategies

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Abstract. This article addresses issues related to academics' perception on how well their institutions support and accompany them during their academic career. The main questions addressed in the article are: How accessible is mentoring for academics? Do academics perceive they are well supported in their academic careers? What strategies do higher education institutions use to address gender inequality in the academic profession? The article discusses conceptual elements from the literature on faculty development, mentoring, and gender, and analyses initial findings from the international Academic Profession in Knowledge Society (APIKS) survey related to institutional support for academics in their formative career stages. Particular attention is given to actions undertaken by the one of the most prestigious public universities in Chile, the case of University of Chile, to tackle gender gaps in academic career development. University of Chile offers an interesting case study in relation to the development of policies that support women and promote gender equality

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at the level of the academic and student body. In this sense, it has carried out important initiatives of a transversal nature to all academic units and that have great support and legitimacy within the university community.

Keywords: faculty development, gender, perception of academics regarding career development support, academic profession, Chile, APIKS international survey

1. Introduction

In recent decades, the continuous entry of women into higher education has become a global phenomenon, showing a steady increase over time, and the predominant enrollment of women in undergraduate studies. The case of academics is different, however, with a steady decline in female participation. Research shows that women are present more often in lower academic ranks and at higher rates than men. The further one advances in the academic hierarchy, the gap tends to widen to the detriment of women, with the presence of female academics decreasing significantly within the highest categories, including the full professorship hierarchy. Research on higher education and international academic careers has shown how inequality operates throughout professional development, affecting career advancement, especially among minority groups, including women (Le Feuvre, Bataille., Kradolfer, del Rio Carral, & Sautier, 2018). Certainly, the local context is important in shaping the inequalities that affect women in the academic milieu, however, this phenomenon is global in scope. And because this is a wide-ranging problem, there are several ways in which to bridge the gender gap in academic career development.

Indeed, to address gender gap issues and promote the development of women's academic careers, higher education institutions have devised various strategies to provide support and accompaniment. Among them, mentoring programs stand out. Mentoring aims to integrate academics who are at the first stages of their career into the organization and academic culture. Mentoring is a tool that can contribute to various problems, including the underrepresentation of women in the academic staff, especially in the highest hierarchies and in managerial or leadership positions (Carpenter, O'Neal & Bakken, 2012; Chandler, 1996; Chitsamatanga, Rembe & Shumba, 2018; de Vries, Webb & Eveline, 2006).

This article analyzes two elements regarding academic career development as well as existing perceptions among early-stage academics regarding support or accompaniment afforded by their universities. Data from the APIKS survey provides results from academics in their early stages of academic career development, segregated by sex. In this article we analyze both the perception of the level of support or accompaniment during academic career development as reported by young academics participating in the APIKS study, as well as perceptions on the availability of support via

institutional mechanisms, such as mentoring.

A second aspect of our analysis refers to the successful experience of a state university in Chile, the University of Chile, regarding institutional strategies and policies to support academic careers, especially for women. This experience may be interesting to observe insofar as it is framed within the demands for greater gender equality and participation of women in the higher spheres of societal development—including higher education institutions and leadership spheres—brought about by the 2018 women's social movement. The experience of the University of Chile is relevant insofar as it is the oldest university in the country, with an ethos of democratic values and ethical principles, steered by a public service culture that focuses on national development, but with a male-dominated academic body. Support for gender initiatives and policies within the university is strongly backed by authorities and by the university community at large. This facilitates the creation of institutional strategies and policies that address gender gaps, especially within academic career development.

Considering the above, this article addresses two dimensions. We look at results based on the findings of the International Survey on the Academic Profession in the Knowledge Society (APIKS) on *early career researchers*, including whether young academics feel institutionally supported during their career development, while exploring possible differences in sex composition and geographical location. Additionally, we discuss local strategies used to address gender gaps in faculty development more specifically looking at the case of the University of Chile. The guiding questions to discuss are: do academics perceive they are well supported in their faculty? How accessible is mentoring for academics? Given the international APIKS data on academics in formative career stages, what common elements can be observed comparatively between the complex public university scenario in Chile and the international context?

Chile's local experience

In the last few years, and particularly due to the social protest led by women university students in May of 2018, the feminist movement in Chile has gained considerable public visibility. Due to this, and on account of the scale of the feminist student movement's demands, there is currently a positive view towards the feminist student agenda within universities in Chile and a stronger institutional willingness to develop policies in areas related to inequality and gender discrimination.

Considering the current Chilean social context, it's relevant to shed light into how the feminist movement in Chile has been a driving force of change inside State Universities. This has been specially so in the case of the University of Chile, which has become a protagonist of this process. This leading role coincides with the history and standing the University of Chile has within Chilean society, being the eldest higher education institution in the country (founded in 1842) with the explicit institutional goal of contributing to the country's development. The University of Chile is in fact one of the leading higher education institutions in the country by virtue of the ample spectrum of research

and teaching it houses and because of the high standard of qualifications of its academic and student body.

Broadly speaking, the Chilean higher education system comprises 4 types of institutions sanctioned by the Organic Constitutional Education Law¹: Universities, Technical Training Centers (analogous to Trade Schools), Professional Institutes (a middle ground between the previous two), as well as military and police academies. The Higher Education Law (N°21.091) also acknowledges the existence of two further sub-systems; the technical-professional subsystem, and the universities subsystem. This paper focuses on the latter since it includes the University of Chile.

The university subsystem comprises four types of institutions: (1) State Universities, which are state-owned institutions, public-mission oriented as well as they must be created and certified by law; (2) Traditional Private Universities, which were created prior to the 1980 Chilean higher education reform, are state-subsidized institutions, and are part of the Council of University Chancellors or CRUCH by its Spanish acronym; (3) Private Universities created after the 1980 reform, which are part of the “Unified University administration system (SUA by the Spanish acronyms) and receive state subsidy as part of a higher education policy that is tuition free; and finally, (4) a fourth type of university in the form of recently created non-profit private universities, much less demanding in terms of student admission, that are not eligible for state subsidy because they do not meet certain standards of quality. This paper focuses on the University of Chile since it is not only the oldest and most prestigious state university in the country, but also the largest.

Of the 1,194,581 individuals enrolled as students within the Chilean Higher Education system during 2021, the universities belonging to the state universities and traditional privates have enrolled a total of 382,028, which represents 32% percent of the total university undergraduate enrollment. For State Universities, the number of enrolled students is 206,928, which is 17.32% of the total. The enrollment rate at the University of Chile is 17.22% of State Universities, which equals to 35,629 students (National Education Council, 2021).

Additionally, the University of Chile is characterized for having a diverse student body. In 2021, over 50% of the registered students were women and 775 were “special” enrollments, of which 313 were incorporated within a Priority Enrollment System of Educational Equity, a system created by the university (Universidad de Chile, n.d.).

According to data from the Higher Education Information Service (SIES in the Spanish acronym) for academics in 2019, there is a total of 86,332 academics within the Chilean academic system, with 56% being male and 44% being female academics. Within the University of Chile, the total number of academics corresponds to 4,718 (SIES, 2021). Gender distribution of academics at the University of Chile shows less female participation compared to gender distribution within the higher education system, with only 37% female academics and 63% male academics.

¹ A group of laws within Chilean legislation that deal with specific key subjects, such as education, at a constitutional level, although they are not part of the Constitution itself.

Recent measures adopted within the University regarding academic staff include, in 2020, the creation of the Faculty Development Office. This Faculty Development office has had to tend to the issue of gender gaps within academic career development, among other actions. To address these gaps the DDA has promoted policies that update gender regulations within the University of Chile and has, during 2021, been actively involved in the implementation of gender protocols for academic career development.

Below, we discuss conceptual elements from the research and literature on academic development, mentoring, and gender. We go on to briefly describe the methodology and type of analysis applied to international results from the APIKS survey. We also present initial findings related to institutional support for academic career advancement and development. Finally, we discuss the academic career literature, and suggest what issues may lead to new research questions.

2. The international academic profession survey: From Carnegie to the knowledge society, a brief overview

Section II provides a literature review and case study discussion regarding academic career development and policies implemented by institutions to accompany and support the academic body, as well as regarding the gender gaps that exist in higher education institutions. In this context, APIKS survey results provide an international overview of how academics in formative stages perceive the support of their institutions for successful academic career development, and whether this support includes the availability of accessible mentoring strategies. Grouping the data by sex makes it possible to incorporate a gender gaps perspective, gaps that have been highlighted in various research studies that address these issues. It also provides the context for academic systems and highlights the relevance of modeling contextual factors in the academic profession or how national higher education systems are configured.

Also included is a literature review on academic development, mentoring with a gender perspective and a case discussion on successful Chilean public university experience, which describes and discusses institutional strategies to address gender gaps in academic career development.

The study initiated by Ernst Boyer in the early 1990s, when he applied the Carnegie Survey of the Academic Profession (Boyer, Altbach & Whitelaw, 1994), represents a fundamental contribution to international research on the academic profession. This survey was conducted in multiple languages and implemented in 14 countries. Several leading scholars from the academic profession were involved in its creation. The topics covered included different aspects of academic work life, the preferred activities of academics (teaching vs. research or both), time invested in these tasks, levels of satisfaction, opportunities for internationalization, participation in university governance, and the perceptions of academics in the early stages of their careers, among others.

A second version of this survey was applied in 2007. More countries were added this time,

bringing the number of participants up to 19. The title of the survey was replaced by *the changing academic profession* (CAP), owing to the context posed by globalization and the corresponding increase in regulations for quality assurance in academic work (Höhle & Teichler, 2012; Teichler et al., 2013). These changes, added to challenges brought about by rapidly growing access to higher education—now more diverse, placing greater demands on academics for teaching and research—make the academic profession a field characterized by change and adaptation.

A third version of the International Academic Profession Survey (2017-2019) is currently being implemented under the name of *APIKS* or *Academic Profession in the Knowledge-Based Society*.

Indeed, between 2017 and 2019, the APIKS survey has been applied in 20 countries. Though the APIKS survey retains many questions from the original survey, each version has adjusted questions and included new ones, to adapt the survey to its new contexts. The APIKS survey had an original focus on exploring the situation of academics in STEM fields (science, technology, engineering, mathematics) and the challenges facing academics in knowledge society (Huang, 2019).

As with previous editions of the international survey on the academic profession (Carnegie and CAP surveys), the APIKS survey has also been coordinated by an international board or consortium in charge of overseeing the development of the survey in all the countries where it is applied. In addition, each participating country brings on board prominent leaders from the field of higher education as well as national and foreign academics.

At present, studies on the academic profession continue to provide interesting elements for discussion from an international perspective. The focus of attention is on the perceptions of academics—especially those in the early stages of their careers—as to whether they feel institutionally supported in the development of their academic career, as well as whether they have readily available support programs, such as mentoring programs. The evidence provided by the APIKS survey on how academics feel in relation to their institutions and academic career development, makes it a valuable source of information. These results are closely linked to local institutional experiences and strategies aimed at tackling gender gaps in the academic career, specifically, mentoring programs.

Regarding the issues of academic careers and gender, evidence shows the unequal development in opportunities for successful advancement in the academic hierarchy, with gender gaps severely affecting women (Universidad de Chile, 2021). Thus, institutional measures or strategies to address these gender gaps are relevant.

Currently, we see that higher education institutions have been increasingly adopting gender policies in their work. In this context, many of the policies that universities have proposed to address gender inequality have a cross-cutting approach, involving academics, staff, and students. Often these policies have resulted from student demands, linked to the demands for non-sexist education. Although necessary advances have been made, at a global level there are still no specific gender policies related to academics in a university milieu.

3-1. Faculty development

International literature on academic development contends, among other things, that implementing strategies to support academics successfully throughout their career trajectory is important (Austin & Sorcinelli, 2013; Veliz & Bernasconi, 2019; Bernasconi et al., 2021). Among the multiple strategies found within higher education institutions, those from Scandinavian countries stand out. These highlight the need to adapt strategies to each institutional reality, since each academic culture relates to a singular context.

Regarding career and academic development, we see a steady trajectory over time in which academics expect to move up within the academic hierarchy (Clark, 1987; Gappa et al., 2007). Certain entry requirements are mandatory, such as having a doctorate, for example. Furthermore, to advance in the academic career, certain levels of excellence in teaching are expected, as well as research experience and publications. Other activities that academics are expected to carry out as they move up in the hierarchy are, for example, supervising graduate theses and collaborating with national and international peers. As indicated by the CAP and APIKS surveys, these activities are seen as a considerable source of stress for many academics (Schiefelbein, 1996; Höhle & Teichler, 2012; Teichler et al., 2013).

As a way of accompanying and promoting academic career advancement—and to manage complementary aspects of the lives of academics—higher education institutions have generated strategies to address the challenges that academics must face. Among these strategies, mentorships can be very effective (Austin & Sorcinelli, 2013; Austin, 2002). Specifically, gendered mentoring has great potential to support women academics. While many of the challenges that mentorships seek to address can be thought of as common, there is no one-size-fits-all formula for all higher education institutions. Strategies need to be addressed and understood within the context of each academic setting.

3-2. Mentoring and gender in academia

The literature on higher education and gender regarding participation has conclusively shown the gender gap in academia from at least two perspectives. Firstly, inequality is expressed as gender gaps in the number of male and female academics—both globally and within different academic units and their respective disciplinary cultures—and secondly, in terms of the gaps between male and female academics within different academic hierarchies or ranks (Schiefelbein, 1996; Nokkala et al., 2020).

In addition, literature on academic development has pointed out that mentoring is an effective tool for overcoming various problems experienced by women in academia. Some of these problems are related to the underrepresentation of women among academic staff, directors or in leadership positions (Carpenter, O'Neal & Bakken, 2012; Chandler, 1996; Chitsamatanga, Rembe & Shumba,

2018; de Vries, Webb & Eveline, 2006).

Mentoring can be seen as a dynamic strategy and must be able to accommodate, from a gender perspective, the context of each university and its substructures, whether in institutional, organizational, or in participatory terms. The elaboration of a mentoring program requires acknowledging each organizational culture, as well as considering specific aspects of every discipline and area of knowledge within existing gender relations (Carpenter, O'Neal & Bakken, 2012).

While in many cases the international literature on gender mentoring focuses on goal achievement associated to women's development in leadership or management positions (Adam, Vincke & Farah, 2016; de Vries, Webb & Eveline, 2006; European Network of Mentoring Programmes, 2017) – something more closely related to career management within academic development – it is possible to consider the following objectives as examples of academic development²:

- Increase in the percentage of women faculty members.
- Increase in maintaining women faculty members within the University.
- Integrating or expanding the professional networks of women academics.
- Assisting in the integration of women academics within university culture and within the university in general.
- Communicating institutional expectations in research, teaching and service.
- Providing opportunities for interaction with experts and role models, focused on both professional development and gender issues.
- Supporting decision making by mentored academics in relation to their studies, their professional careers, and their personal lives.

It should be noted that, although there is a common framework that defines what is meant by gender mentoring, this kind of strategy is based on a context analysis of each organization, from which objectives, types of mentoring and specific stages are derived. This analysis can translate into the implementation of a unique mentoring model, where, nevertheless, a wide spectrum of possible actions can be considered or addressed within the model (Adam, Vincke & Dubois-Shai, 2016). Likewise, this type of model is not without challenges (Carpenter, O'Neal & Bakken, 2012; de Vries, Webb & Eveline, 2006; European Network of Mentoring Programmes, 2017; Heller & Gómez, 2020), so it is also important to weigh these elements at the time of implementation.

² Information drawn from, "Gender-sensitive Mentoring Program in Academia: A Design Process" (Adam, Vincke & Dubois-Shai, 2016), "Mentoring Women Faculty in STEM - a Multi-Pronged Approach" (Carpenter, O'Neal & Bakken, 2012), "Exemplary Junior Faculty Mentoring Programs" (Thomas, 2005), "Mentoring Programs: A Tool for Developing Gender Equality, Diversity, Internationalism and Interdisciplinarity in Research and Academia" (European Network of Mentoring Programs, 2017) and "Mentoring Program 2018: Training for Women Leaders in Academia" (Heller & Gómez, 2020).

3-3. Institutional strategies to address the gender gap in faculty development

University support towards their academics during formative stages of their careers is still scarce. To help, institutions have deployed specific strategies such as those implemented by the University of Chile. These strategies can provide evidence on the effect of gender mentoring in academic career development.

One of the great weaknesses in promoting gender equality within institutions of higher education, as highlighted by the United Nations Economic and Social Council, is that, in general, when a gender perspective has been utilized to this end, “the emphasis has been placed more on policy formulation than on the development of procedures and instruments that guarantee the adjustment of such policy into practice” (Universidad de Chile, 2021). In this sense, institutions of higher education are currently expected to undertake tangible actions regarding academic development. At a local level, the strategy proposed by the University of Chile’s Academic Development Directorate (ADD) translates the need for gender equity policies (among academic staff) into tangible actions.

Following the model used by the University of Gothenburg (Policy and Action Plan for Gender Equality and Equal Treatment at the University of Gothenburg, 2015), the ADD has developed guidelines—of best practices for gender equity—defining a set of actions that academic units and faculties can commit to when trying to reduce gender gaps. These actions are organized in four areas: Career Development, University hiring policies, Work-life balance, and Women’s participation. This strategy is flexible and allows each academic unit or faculty to determine which actions to prioritize. Once these priorities are fulfilled through successfully implemented actions, new actions can be undertaken.

Mentoring programs are another area of work being promoted by the University of Chile to bridge the gender gap, specifically mentoring programs with a gender perspective. The concept of mentoring can be approached from multiple perspectives, depending on structure, content, and the disciplinary field the mentoring program is intended to suit, as well as the specific needs the program is intended to service. Within Higher Education Institutions, it is possible to consider mentoring as “*A relational structure that provides specific knowledge required for faculty to develop successful independent scholarship, as well as essential professional relationships that place faculty within the network of scholars in their discipline*” (Columbia University, 2016). Furthermore, mentoring programs can involve a voluntary and collaborative commitment, centered around mutually agreed-upon expectations of the parties involved, which in turn make mentoring programs mutually valuable (Australian Catholic University, 2020).

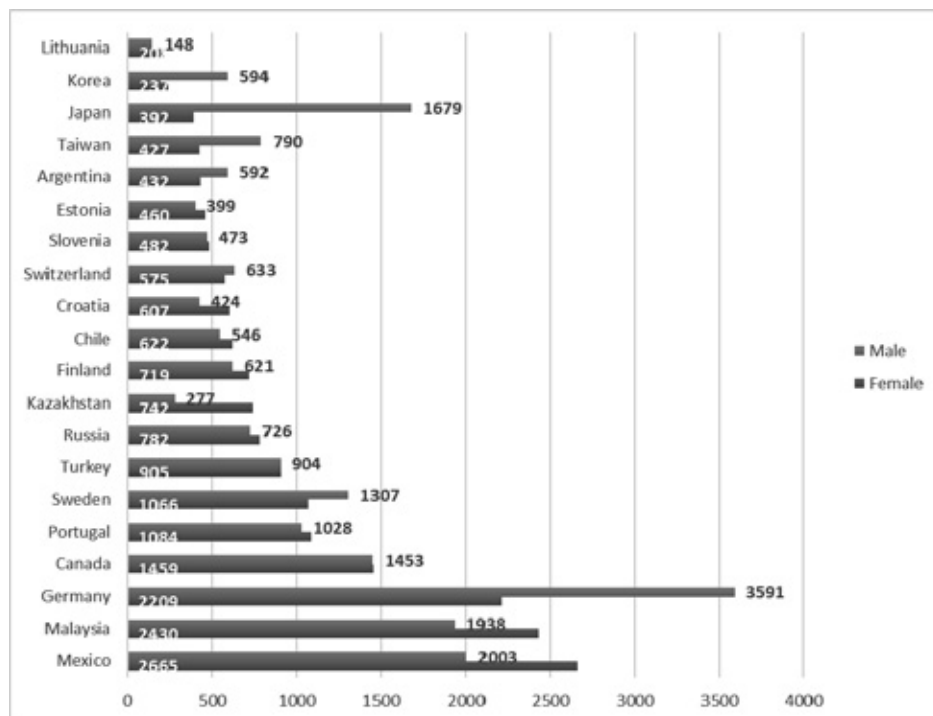
Despite the benefits brought about by the implementation of this type of strategy, the fact is that they are not widely carried out, at least not in Latin America. However, regarding mentoring in general (not exclusively with a focus on gender), the APIKS survey does provide evidence regarding the

perceptions of academics concerning institutional support during career development, as well as how accessible they consider mentoring to be.

4. Methodology: APIKS survey of the academic profession

The APIKS survey was developed by a team of international experts—coordinated by a consortium of countries with prior experience in the study of the academic profession—some of whom have participated in the development of previous surveys. This team of experts developed the survey questions based on items from both the Carnegie and CAP surveys and with understanding of the current trends within knowledge society. The survey was developed in English, with subsequent instrument validation in each member country. Additionally, each country could incorporate their own items or questions to reflect the traits of their own systems of higher education. After this validation—in English—the instrument was translated into the native language of each country, which, in the case of Chile, corresponded to Spanish. This Spanish translation was in turn validated by the other participating teams in Latin America, i.e., Argentina and Mexico.

Figure 1. Total number participants International Academic Profession in Knowledge Society Survey (N=38,629)



Source: Institutional research office, Universidad de Chile - based on international APIKS survey data (version 1.1).

The data collected with the APIKS surveys from the participating countries, has been stored under protocols established by the project consortium in a database server based in Finland. To share information among member countries, the respective data was delivered according to a format established by the consortium. After signing protocols for appropriate use and confidentiality, the data from all countries was made available so research results could be communicated. Part of the initial findings of the study have just seen the light—in September 2021, while this article is being written—in the book published by Springer entitled “*Universities in the Knowledge Society. The Nexus of National Systems of Innovation and Higher Education*”, which is part of “*The Changing Academy - The Changing Academic Profession in International Comparative Perspective book series*” (volume 22).

The APIKS survey questionnaire contains 9 sections addressing different topics and a total of 52 questions. Since 2020, the APIKS survey includes 20 countries and 38,629 valid responses. Graph one shows the number of participants per country and their sex breakdown. Overall, 52% (N= 20,126) of the participants are men, and 48% (18,503) women.

Each country could define its sampling strategies for the survey, depending on the structure of its higher education systems. In the Chilean case, the focus was on the university subsystem. To afford the academic body greater representation, institutions were chosen according to three main variables: type of institution (state, traditional private, and private as part of the single admission system); geographical area (metropolitan and non-metropolitan); character and orientation (research universities and teaching universities).

The survey in Chile was not financed by external organizations, although it was sponsored by the two most prestigious universities in the country, the Chilean Catholic University, and the University of Chile, by means of a support group of academic experts and directors. This group of Chilean experts was responsible for coordinating, applying, and analyzing the survey. A total of 11 universities participated, and almost 2,000 valid survey responses were received from academics working 22 hours or more.

Two specific items from this survey have been analyzed with a special focus on academics in formative stages or early careers. One has to do with whether academics feel sufficiently supported in their career development, and another with whether they feel that mentoring is available to them when they need it. The results are presented below based on two types of data analysis: descriptive and multivariate (logit).

5. Selected results: Academic within formative years

Section V, which presents survey results, is made up two sub sections. The first sub section describes the overall results of the survey for questions aimed at young academics or academics in the formative stages of their academic careers. This section corresponds to just under 40% of the total number of

valid surveys received at APIKS. The global survey reached almost 42,000 academics in 20 countries, and the young academics section reached 16,215 responses. This section is mainly intended for academics classified under the junior category, which corresponds to the lowest academic hierarchies, such as assistant professor and instructor.

To analyze sex differences across the globe, the 20 participating countries have been grouped into 5 geographic regions: Asia, Eastern Europe, Eastern Europe, North America, and Latin America. The analysis corresponds to a descriptive statistical analysis of categorical variables.

The relevance of the variables analyzed is backed by other studies (still in progress) that have shown them to be significant, confirming results from the Carnegie survey of the academic profession, which concludes that “context matters” (Altbach, 1991; Boyer et al., 1994).

The 5 geographical regions included within the APIKS Survey correspond to: North America, Latin America, Asia, Western Europe, and Eastern Europe. The 20 countries participating in APIKS are: Canada, Argentina, Chile, Mexico, Japan, Korea, Malaysia, Taiwan, Sweden, Switzerland, Portugal, Finland, Germany, Turkey, Croatia, Estonia, Kazakhstan, Lithuania, Russia, and Slovenia.

The second sub section focuses on the analysis of the Chilean case. At a national level, a total of 1,837 valid responses were received from the APIKS survey, of which 535 responses (29%) corresponded to junior academics ranked as assistant academics or instructors. The data analysis corresponds to a univariate logistic regression model and variables are used to evaluate the predictive factors in relation to the items “do you feel well accompanied or supported in the development of your academic career” and “if mentoring is available to support academic career development by academic institutions”.

The results regarding academic development show that academics vary in their perception on how well supported they feel at the beginning of their careers, depending on sex and geographical area. Thus, along with presenting relevant results, a comparative analysis of the perceptions of academics in different geographical regions is also considered.

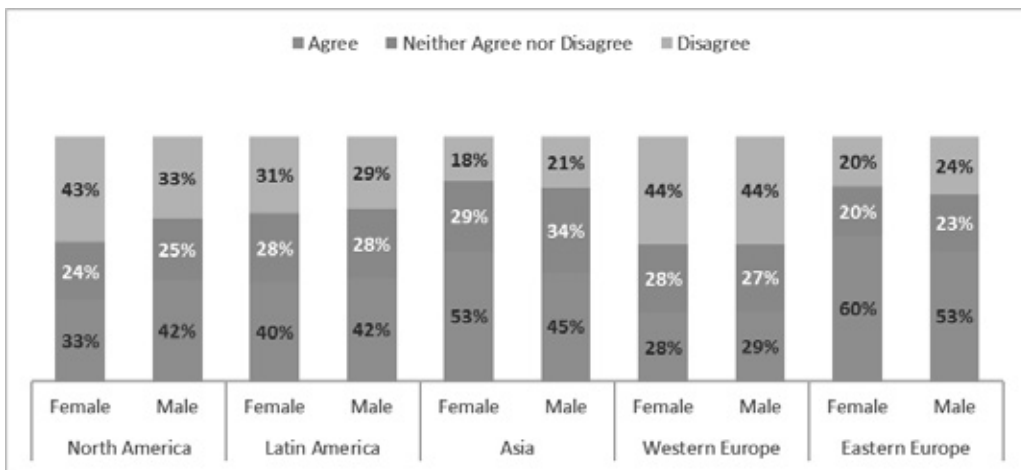
Early careers and global results

Of all the academics who answered the survey, just under 40% were academics in their formative stages. The following presentation of results is accompanied by a comparative analysis of the participants' perception, grouped into five different world regions. A total of 16,215 validly issued responses are analyzed. In operationalizing these responses, the core APIKS team defined these initial stages or formative stages of academics are equivalent to the academic hierarchy of *instructor* or *assistant professor*.

Results show that early careers in over half of the geographical regions, women tend to feel less supported by their institutions during their career development, as compared to men. Figure 2 shows percentages by sex and geographical region.

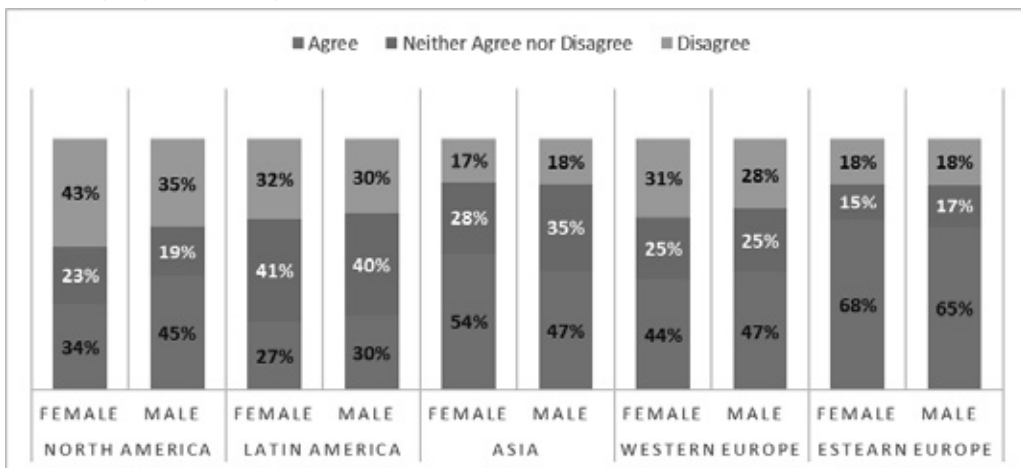
At a regional level, results show that Eastern Europe, in general, has a more favorable perception of academics about feeling supported during their career development. A breakdown by sex shows 60% agreement among women and 53% among men. This positive trend in Eastern Europe contrasts with Western Europe, which has a more negative perception of institutional support. In Western Europe, only 28% of women say they agree and feel supported by their institutions, very similar to the 29% of men. Overall, more than 50% of women tend to feel less supported than men.

Figure 2. Indicate your views on whether you are well supported in your career development by your institution, by sex and geographical region (N=16,125)



Source: Institutional research office, Universidad de Chile - based on international APIKS survey data.

Figure 3. Indicate your views on whether mentoring is available when you need it, by sex and geographical region (N=16,125)



Source: Institutional research office, Universidad de Chile - based on international APIKS survey data.

Results about mentoring being adequately available show positive perceptions in almost half of the countries (Figure 3). Countries that show a more significant presence of mentoring, also indicate greater agreement regarding support in career development. Women tend to be more critical regarding mentoring program availability, disagreeing more than men in this matter. Indeed, those who tend to agree most that mentoring is available are men. In Latin America's case, just under one third of all academics agree that mentoring is available, with results being very low for both women (27%) and men (30%). Compared to other regions, Latin America appears especially low in terms of the percentage of respondents which consider that mentoring is available when needed.

Academics in formative stages and local results in Chile

At a national level, Chile received 1837 responses to the APIKS Survey. From this total, we have selected responses to section G (intended for those academics classified in the APIKS survey as “*junior professor*”, which includes the academic ranks of assistant professor and instructor) and eliminated missing data, as well as neutral answers to item G2. The final database included 535 academics.

Absolute and relative frequencies were calculated for categorical variables. To evaluate predictive factors to the question “Are you well supported or accompanied in your career development”, we used crude and adjusted logistic regression models. We used Akaike's information criterion (AIC) to determine the significant predictors of the 10 variables described in Table 1. For this purpose, we included predictors one at a time. At each step, we used the likelihood ratio test to select the best additional predictor. We used AIC to determine whether including this new predictor led to a comparatively better model (Garmendia et al., 2019).

To assess predictive ability of the model, we used the curve under the curve (AUC) and divided the database into two sets to estimate two separate logit models. Finally, the model's ability to discriminate academics' responses regarding their career development support was assessed using the ROC curve. All statistical analyses were programmed using RStudio, version 3.5. For validation purposes, the ROC curve was calculated, which showed an area under the curve (AUC) of 0.73.

The univariate models for each of the candidate predictors, as well as support in academic development are shown in Table 1. In comparison with the under 40 years of age group, greater agreement was found among 60 or more years of age academics for *support in their academic development*, as well as for those with no doctoral degree. With respect to academics who are married or are in a civil union, those who are single show greater agreement regarding the *support for their academic development*. Hourly-based academics are 3.5 times more satisfied than full-time academics (OR: 5.53; 95% CI: 1.80; 6.95). In terms of the type of university to which the academics belong, private SUA universities have up to 5.4 times more satisfaction with the academic support compared to academics from Public-State universities.

Table 1. Association between candidate predictors and support in academic career. Univariate logistic regression models, Chile data (N=535)

Variables	odds ratio	95% ci
<i>sociodemographic variables</i>		
age, %		
<40 y	1.00 (reference)	
40-60 y	0.40	(0.28,0.59)
>60 y	1.26	(0.55,2.88)
Phd AWARD, %	0.40	(0.28,0.58)
civil status, %		
married/in union	1.00 (reference)	
single	1.77	(1.12,2.80)
other (Divorced/Widow)	0.81	(0.43,2.81)
sex, %		
male	0.94	(0.67,1.32)
female	1.00 (reference)	
Working hours %		
Full time	1.00 (reference)	
Part time	1.74	(1.15,2.64)
Hours	3.53	(1.80,6.95)
Academic Rank %		
Full Professor	1.00 (reference)	
Associate Professor	0.21	(0.06,0.75)
Assistant Professor	0.21	(0.07,0.62)
Adjunct Professor	4.23	(0,01.20.97)
Instructor	0.31	(0.10,0.97)
Auxiliary Professor	0.13	(0.02,0.70)
<i>other variables</i>		
INSTITUTIONAL TYPE (STATE-PUBLIC/PRIVATE)		
Public – State Subsidized	1.00 (reference)	
Private University created after 1980 reform	5.42	(3.36,8.24)
Traditional Private	2.08	(1.24,3.51)
Have dependent person at home (%)	0.45	(0.38,0.65)
Have had employment interruption (%)	0.39	(0.26,0.59)

Source: Institutional research office, Universidad de Chile - based on Chilean APIKS survey data.

The final predictive model for perception of support of academic development is shown in Table 2. We included all potential predictors of academic support and eliminated those that were not statistically significant at 5%. Among the sociodemographic variables, not having a doctoral degree was associated with having a better perception when evaluating academic support. Among the other variables, belonging to an SUA or private CRUCH university, those not having dependents to care for and not having interrupted employment had a higher perception when evaluating academic

development and support. The predictors that were not significant for age, marital status, sex, working hours, academic rank, and area of knowledge.

Table 2. Predictive model of support in academic career. Multivariate logistic regression models, Chile 2017 (N=535)

Variables	adjusted Odds Ratio	95% CI
<i>Sociodemographic variables</i>		
% PhD AWARD	0.56	(0.35,0.90)
<i>Other variables</i>		
INSTITUTIONAL TYPE (State-PUBLIC/PRIVATE)		
PUBLIC - STATE SUBSIDIZED	1.00 (reference)	
PRIVATE university created after 1980 reform	3.69	(2.20,6.19)
Traditional PRIVATE	2.37	(1.23,4.54)
HAVE DEPENDENT PERSON AT HOME (%)	0.47	(0.28,0.76)
HAVE HAD EMPLOYMENT Interruption (%)	0.59	(0.36,0.99)

Source: Institutional research office, Universidad de Chile - based on Chilean APIKS survey data.

6. Final words

Academics in formative stages whose perceptions are affected by local context and gender-specific experiences show both common and distinct trends. Support during the early academic career has dissimilar effects for academics depending on the geographical region in which they are located. APIKS findings show that, while academics in Eastern Europe and Asia show favorable views on support for early career development—for both among men and women—, academics in North America, Latin America, and Western Europe are more disapproving on this point. In terms of gender, three of the five world regions show that women have a less favorable perception of the support they receive from their institutions during career development. In relation to whether mentoring is available to support the start of a successful career, men in general tend to have a more positive view than women. This may be due in part to the fact that they could require less institutional support, or that women may need or demand more of these types of programs and therefore offer more challenges to their institutions in the type and number of mentoring programs.

A common trend seems to be that academics in formative stages have a specific set of traits that require greater attention, but that can also serve to focus institutional strategies addressing gender gaps in the academic profession. Traditionally, universities have devised strategies to support academic development within the academic hierarchy based more on academic and professional criteria. However, today, amid the pandemic, some barriers that go beyond these variables, and that have to do with everyday aspects such as the living standards of academic staff or inequalities around family-

work balance determined either by sex or geographical region, are becoming visible. These barriers had been previously pointed out by several researchers on gender and academia, but are increasing during the pandemic and becoming much more visible. Variables such as family setting, whether academics have dependents at home, or whether they have had to change their employment status to look after someone under their care (whether elderly or infant) are also highly relevant issues when evaluating the perception of academics regarding how well they are supported by their institutions. In Chile, as in the rest of the Latin American region, it is estimated that women's participation in the labor markets has declined to such a degree during the pandemic that women's employment has regressed to levels reached three decades ago. One of the main reasons for this has to do with having to care for dependents at home. Although trends in female participation at the university level have not fallen so alarmingly, they do alert us to the importance of addressing this phenomenon within higher education institutions.

Research concerning the Chilean university system shows evidence of different perceptions around support received by academics during their career, depending on the higher education institution type. Academics from private institutions show a more favorable perception regarding support from their universities than academics from public institutions. This may be due, in part, to the fact that most private institutions are relatively young and are thus more likely to adapt to a changing world. Whereas public universities, due to their age, size, and bureaucratic procedures, make it more difficult to adapt to the changing scenarios faced by the academic profession. In this sense and based on the evidence provided by the APIKS survey in Chile, public universities are being challenged to take more actions to improve the perception of their academics regarding how supported they feel in their careers.

On the other hand, evidence indicates that academic career development becomes problematic when the gender perspective is incorporated into the analysis. In Chile, the feminist unrest of May 2018 meant a great surge in debates around the need for more tangible actions directed at gender inequality and discrimination in universities. However, these demands do not mention ideas about academic development strategies. In 2021, amidst the global pandemic, there is no doubt that work-life balance and domestic care of dependents have become important issues in the healthy development of an academic career and have made visible the need for an adequate development in people's welfare. In this sense, the academic development strategies and actions that are being implemented by the University of Chile are a step in the right direction. Future studies could explore the differences between Chilean HE institutions in depth.

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