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► **To cite this version:**

Magali Ballatore, Jean-Baptiste Bertrand. International PhD students in France under COVID-19 Crisis. JIM Journal of international Mobility, Moving for education, training and research, 2023, 2022 (1), 10.3917/jim.010.0077 . hal-04095898

HAL Id: hal-04095898

<https://hal.science/hal-04095898>

Submitted on 26 Mar 2024

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International PhD students in France under COVID-19 Crisis

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Résumé

Depuis le début du XXI^e siècle, la cartographie de la mobilité des doctorants a changé, elle s'est élargie et diversifiée ; elle s'accompagne de plus en plus de mouvements multicentriques, même si ces mouvements concernent encore majoritairement les Européens et les Américains. Depuis 2020, cependant, la crise sanitaire a rendu cette mobilité plus compliquée. Elle a pu être empêchée ou fortement limitée. Nous avons émis l'hypothèse que les jeunes chercheurs internationaux, peu étudiés malgré la forte internationalisation de la formation doctorale, ont été particulièrement touchés. Cet article propose donc d'étudier les conséquences de la récente crise sanitaire sur l'expérience des doctorants internationaux en France. Il s'appuie sur une enquête récente par questionnaire. L'analyse des données statistiques et le contenu des questions ouvertes montrent que les restrictions de voyage, les procédures d'isolement et la fermeture des frontières, ont en

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quelque sorte modifié la nature de l'expérience doctorale internationale, augmenté les vulnérabilités, et changé les conditions de travail des jeunes chercheurs internationaux en France.

Mots clés : *migration internationale, doctorants, France, Covid-19*

Abstract

Since the beginning of the 21st century, PhD mobility mapping has changed, becoming broader and more diversified. It is increasingly accompanied by multi-centric movements, even if these movements still predominantly concern Europeans and Americans. Since 2020, however, the health crisis has made this mobility more complicated. It may have been prevented or strongly restricted. We hypothesised that young international researchers, who have been little studied despite the strong internationalisation of doctoral training, have been particularly affected. This article therefore proposes to study the consequences of the recent health crisis on the experience of international PhD students in France. It is based on a recent enquiry by questionnaire. The analysis of statistical data and content of the open questions show that travel restrictions, isolation procedures and border closures, have somehow altered the nature of international PhD experience, increased vulnerabilities, and changed the work conditions of young international researchers in France.

Keywords: *international migration, PhD students, France, Covid-19*

Introduction

During the pandemic, both the academic literature and the media highlighted growing concerns regarding the well-being of higher education students. To date, however, much of the research and analysis of university students and working conditions has focused on the undergraduate student group and Student Affairs and Services (Moscaritolo et al., 2022), or undergraduate and postgraduate students combined, as in *Observatoire de la Vie Etudiante* (OVE) studies in France. Many studies begun to investigate also the indirect effects of the school closures on students' learning and on their physical and mental health (Schleicher, 2020; Cachon et al., 2020; Santagati, 2022). Yet there are several factors that are arguably unique to the postgraduate experience (Scott & Takarangi, 2019) and to the PhD international population. Even before the first lockdown³, students completing a doctoral degree reported struggling with feelings of social isolation and challenges with supervisors and the academic environment (Castelló et al., 2017; Sverdlik & Hall, 2018; 2019). Furthermore, although studies have measured certain aspects of mental health and psychological distress, other aspects that divide the population have not been covered. A Special Issue of the *Journal of International Students* (Vol. 11 No. S2, 2021, *International*

³ French health measure implemented for the first time from 17 March to 11 May 2020, accompanied by the closure of schools and universities.

Education in the Time of Global Disruptions: COVID-19 and its Impact on International Students) started to examine the Chinese international student experience in different countries, as well as focusing on other aspects of international migration during the COVID crisis in Europe and in Asia. This contribution responds to the call to study these trends in greater depth for international students coming from different countries. We have hypothesised here that the geographical and social origin of PhD students, as well as gender, has had an influence on the experience of PhD students in times of crisis.

Hence, the question at the heart of this research is: what consequences have travel restrictions had on lives, experiences and viewpoints of international PhD students in France? Could we understand them without looking at the social characteristics of this population? With the help of large-scale quantitative studies, we focus on degree mobility, given that since the creation of exchange programmes such as Erasmus (Ballatore, 2010), the longstanding mobility of young researchers has been under-researched in Europe and the differences according to gender, geographical and social origins have not been sufficiently addressed. In this article we will therefore discuss the idea that inequalities based on social and geographical origins, as well as on the educational paths that are closely linked to them, are not "consequences of the crisis", but instead precede it, while "lockdown" measures aggravate certain vulnerabilities. In doing so, we also question France's welcoming policies, analysing trends and the immediate short-term effects of the pandemic on PhD students' experiences, depending on gender and more broadly on social inequalities. We thus propose a critical analysis of the conjunctural changes in PhD experiences and social disparities resulting from the pandemic within the context of other more systemic changes and reforms in Higher Education. After presenting a state of the art on student and PhD mobility, we will present our survey and the methodology. Then, in the light of the foregoing, we will discuss our findings of international PhD students in France under COVID-19 Crisis.

1. Literature review and context

The doctorate, in terms of its organization and structure as a degree, can be considered a direct descendant of the old universities that looked favourably on student peregrinations. In fact, the major European universities have been international in their outlook since their creation. Students, free to move around Europe wherever their degree was recognized, "peregrinated" between the universities of Cambridge, Bologna, Padua, Paris, and Oxford, particularly during the Renaissance and the Classical period (Charle, Verger, 1994). Through the participation of doctoral students in conferences or research trips abroad, doctoral students make their research part of a global space. The international circulation of scientists was therefore a fundamental element in the reconstruction and reorganization of French higher education after the two World Wars. It was after 1945, between the 1950s and 1960s, that a new type of transnational, scientific elite emerged. Internationalism was no longer the prerogative of scientific celebrity, but an element of distinction, unusual but no longer exceptional. This transformation was made possible by the creation of a series of new institutions and programmes, destined to facilitate and structure circulation of this type (Verschueren, 2019).

In sociology of migration and sociology of education, despite numerous testimonies on social networks, manuscripts written by the protagonists themselves (Combes, 2022) and statistics compiled by scientific journals or associations (Woolston, 2019), little research has been carried out on this population in universities. Yet it is directly and indirectly experiencing the consequences of the neo-liberal reforms undertaken over the last few decades, which give pride of place to competition and internationalisation of training (Croché, 2010; Ballatore, 2017). Doctoral students, among all students, seem to be the most urged to build up a strong “cultural capital of the international type” (Draelants, Ballatore 2014). In the introduction to the book, Moritz Hunsmann and Sébastien Kapp (2013) note the “inflation of demands” on candidates, i.e. that even before completing their thesis, they must have performed “all the tasks that make up the professions of higher education and research” (p. 20). Hunsmann and Kapp note that in France, stress “exceeds the threshold considered pathological in nearly one fifth of doctoral students in the humanities and social sciences” (p. 21). Hence, Maryvonne Charmillot et Frédéric Crousaz (2021) recently have addressed the following question in their research conducted in Switzerland: What difficulties are exacerbated by the crisis? In our research, we address another one: what difficulties are aggravated for mobile, international PhD students?

In order not to fall into the mythology of a whole society on the move, it is important to see to what extent the mobility of students, particularly doctoral students, has increased.

Figures in absolute values abound to underline the increase in international student mobility around the world, but while it is indeed considerable in absolute values, it must nevertheless be put into perspective in relation to the parallel evolution in the global student population.

The proportion of students in international mobility has been remarkably stable over the last 30 years, stagnating at around 2% of all students enrolled in higher education (UNESCO, 2019). Many countries have a proportion of PhD students of less than 1%, while the average proportion is 2.8% in North America and even 3.5% in European Union (EU) countries. Nevertheless, the internationalization of higher education has today become one of the main reasons for migration, and this migration is mainly from the countries in the South to the countries in the North. Moreover, a growing proportion of this mobility is intra-regional: 32% of international students from the Middle East study abroad in a country in their region, which is also the case for 35.1% of Asian students, 21.4% of students from Sub-Saharan Africa and, thanks to the Erasmus programme in particular, 75% of European students (Ballatore, 2010; Agence Campus France, 2017; 2019; Strassel, 2018).

Within this general framework, OECD countries, including France, continue to receive the greatest number of internationally mobile students, nearly 80%. Of these countries, the United States is the most attractive, hosting one out of every four mobile students in the world (OECD, 2017). In 2020, France was one of the countries with the highest proportion of international students in all doctoral disciplines (40%), alongside the United States and the Netherlands. France is marked by a dual system of higher education. This duality - universities and *grandes écoles* - implies numerous inequalities. Still today, access to the various orientations available in higher education, in particular access to prestigious schools or doctorates, remains very marked by inequalities, particularly in terms of gender and social origin (Jaoul-Grammare, 2020). Overall, women are about as likely as men to

enrol in bachelor's or master's degrees (or their equivalent) abroad, but are less likely than men to enter doctoral or equivalent programmes abroad in OECD countries. In 2010, the percentage of women in doctoral programmes had reached 45%. Since then, it has stagnated. Moreover, for the same country of origin, a more detailed analysis sometimes reveals very significant differences in the proportion of women between universities and schools. For example, Italian women represent 65% of the country's students who enter French universities but only 41% of those who are enrolled in Grandes écoles (Agence Campus France, 2016).

The fields of specialization differ according to the countries hosting PhD students: in France, the highest numbers of international students can be found in the arts and humanities. Nevertheless, when taken together, sciences and engineering are among the most attractive and funded disciplines for international PhD students. One out of every five foreign students in mobility undertook their thesis in engineering in 2016-2017 (Eurostat, 2009). In our sample, a gender-discipline cross-table shows that women are over-represented in humanities and social sciences.

Table 1: Percentage of the surveyed population of foreign PhD students by gender, depending on the field of study, in 2021, in France

Discipline	Gender		Total
	Men	Women	
Law, political science	61.5	38.5	100
Humanities, social sciences	33.7	66.3	100
Health	25	75	100
Sciences	56.4	43.6	100
Economics, management, administration	56.7	43.3	100
All	45.8	54.2	100

$\chi^2 (4, N=493) = 31.11, p < 0.001$

Source: Questionnaire survey

In term of nationalities, for some years now, China has been one of the top-ranking countries of origin in French universities, ahead of PhD students from the countries of former French colonies. North Africa and the Middle East have seen a significant drop in their numbers since 2012-2013 (-19%) (Campus France - Key Figures 2019, 2019). Sub-Saharan Africa and Asia-Oceania are also sending fewer doctoral students to France. That is why in 2018, the Prime Minister of France introduced the strategy "Choose France/ Bienvenue en France" (Philippe, 2018), and in a report submitted to the Minister of Higher Education in February 2019, a consultation mission recommended that the increase in tuition fees for non-UE students, should not be extended to PhD students, as France appears

to be "on the way to dropping out of the ranks of the major research countries" (Blanchet et al., 2019; Bréant, Jamid, 2019). The number of doctoral students from the Americas and Europe, for their part, has remained stable. In Europe, Italy and Spain moved up 2 and 10 places in the rankings, respectively. France has also seen a resurgence of Italian migration over the last twenty years. Dubucs, Pfirsch and Schmoll (2017) speak of a new wave of Italian immigration to France since the mid-2000s. This phenomenon is indicative of emerging forms of migration in Europe, linked in particular to student mobility. The specificity concerning Italians, compared to previous migratory waves, is the average educational level of this mobile population - even if an average can conceal strong disparities (Ballatore, 2019). In our sample of PhD students, Italy (10.1%) and Lebanon (7.7%) are the two most represented countries of origin, followed by China (6.9%). In this context, with more and more PhD students coming from China and European countries, more women and a strong proportion enrolled in arts and humanities. We hypothesised that these variables (geographical origin and gender), as well as other social characteristics of the population, such as the social and disciplinary origin of PhD students for instance, had differential effects on the experience during health crisis.

2. Methodology

We conducted an analysis of existing survey data (qualitative and quantitative) from Campus France, Unesco and the OECD. In January/February 2021, we also gathered data from international PhD students from 101 doctoral schools, through an online opt-in questionnaire.

2.1 Survey design

We used the following definition of "international PhD student": people who had been registered as doctoral students in France for at least 1 year at the time of the survey; who were born and completed a part of their primary or secondary education in a country other than France; and whose parents are not French nationals. We divided the questionnaire into seven sections: educational background, international mobility, situation during the lockdowns in France, general living conditions, resources, leisure activities, and socioeconomic information. The questionnaire included open and closed-ended questions, multi-option questions, and Likert scales. We offered two versions of the survey, in French and in English. Some of our Masters' students also conducted exploratory interviews.

2.2 Data collection

As we did not have access to PhD students' contact information, we gathered an exhaustive list of French doctoral schools (272 doctoral schools in 2020), publicly available on the French Ministry of Education, Higher Education and Research website. From this starting point, we retrieved email contact information for doctoral students' elected representatives in doctoral school councils, when publicly available, and asked them to forward our survey invitation to international PhD students from their doctoral schools. Additionally, when advised so by the PhD students' representatives, we contacted directors of doctoral schools

in order to distribute the survey through them. We also distributed the link to the survey on a few PhD students' Facebook groups. 503 international PhD students from 101 doctoral schools answered the survey. We retrieved publicly available data from the "Système d'Information sur le Suivi de l'Etudiant" (SISE, which monitors students university enrolment in France), to assess bias in our sample.

2.3 Ethics and limitations

We obtained approval from the French National Centre for Scientific Research's data protection officer prior to conducting the data collection, to ensure the survey respected personal data protection legislation. Contact information was unavailable for about 70 doctoral schools. We avoided contacting doctoral schools from the Bretagne region, in order to avoid interfering with a similar survey that colleagues were conducting at the same time in this region. Information on the actual number of international PhD students in each French doctoral school is not always available or up-to-date, so it was not possible to estimate the survey's response rate for each doctoral school.

Table 2: Descriptive statistics of the survey respondents, compared to data from the *Système d'information sur le suivi de l'étudiant* (SISE)

Variable	Data	
	Survey on international PhD students (2021)	SISE data (2020-2021)
Total count	503	23,640
Age at the end of 2020 (years)		
Mean (standard deviation)	30 (6.1)	Unavailable
Minimum-Maximum	22-72	Unavailable
Non responses	47	Unavailable
Gender <i>n (%)</i>		
Women	267 (53.7%)	11,256 (47.6%)
Men	226 (45.5%)	12,384 (52.4%)
Other definition of gender	4 (0.8%)	n/a
Non responses	6	n/a
Domain <i>n (%)</i>		
Sciences	238 (47.3%)	12,466 (52.7%)
Humanities and social sciences	177 (35.2%)	7,057 (29.9%)

Law, economics, management	44 (8.7%)	3,779 (16%)
Health, medicine	44 (8.7%)	338 (1.4%)
Region where the Phd student is registered <i>n (%)</i>		
Auvergne-Rhône-Alpes	65 (13.5%)	2,676 (11.3%)
Bourgogne-Franche-Comté	37 (7.6%)	608 (2.6%)
Bretagne	0 (0%)	722 (3%)
Centre-Val de Loire	11 (2.3%)	465 (2%)
Overseas territories	5 (1%)	96 (0.4%)
Grand Est	24 (5%)	2,122 (9%)
Hauts-de-France	25 (5.2%)	1,405 (5.9%)
Île-de-France	192 (39.8%)	8,703 (36.8%)
Normandie	14 (2.9%)	590 (2.5%)
Nouvelle-Aquitaine	29 (6%)	1,841 (7.8%)
Occitanie	44 (9.1%)	2,142 (9%)
Pays de la Loire	0 (0%)	640 (2.7%)
PACA et Corse	36 (7.5%)	1,630 (6.9%)
Non responses	21	n/a

Source: Questionnaire Survey ; SISE data (Ministère de l'Enseignement supérieur, de la Recherche et de l'Innovation, 2021).

3. Findings- International PhD Students in France Under COVID-19 Crisis

The ban on certain movements in France (except for movements deemed to be “essential”), popularised in the media by the expression “lockdown of the population”, was implemented only a couple of years after, in 2020. The second “lockdown” took place from 30 October 2020 to 15 December 2020, with more flexible mobility restrictions, including the decision to keep primary and secondary schools open. These two lockdowns were part of a set of policies in France to restrict human contact and travel in response to the Covid-19 pandemic. When we started our survey, we assumed that the “lockdown periods” have not affected all international PhD students in the same way. We will therefore deal successively in this section with the different aspects of the difficulties reported by the PhD students in our survey, psychological and financial, as well as the more permanent challenges resulting

from the composition (in terms gender, social, geographical origins) of this population, which makes the PhD work and life experiences quite different.

3.1 Financial and Psychological Difficulties affecting Work/life Balance

The main difficulties reported by PhD students during the health crisis were psychological and largely related to their family situation. Thus, parents of children said that they had difficulty reconciling family life and professional life. Some women in a couple also mentioned the increase in domestic workload, resulting in tensions in the couple. Whereas single people reported that they felt isolated and lonely, as the following two interview extracts show:

“During the first lockdown, it was impossible to organise childcare (...) for my baby who was 5 months old at the start of the first lockdown and not yet enrolled in regular childcare. I was not able to work effectively on my thesis write-up until we were able to enrol our baby with an *assistante maternelle* in September 2020”.

Woman, UK

“Immense isolation and loneliness, living the crisis ABSOLUTELY alone (0 family 0 friends 0 acquaintances in France) (...) and all this in cramped accommodation and in a foreign country”

Woman, Morocco

What also came out very strongly were the difficulties associated with not being able to return to the family of origin for holidays. Some PhD students, mostly Europeans or North Americans, who could easily make a lot of round trips between their country of origin and country of destination, found the fact of living abroad less attractive and were considering returning home definitively. In the period between the two lockdowns, however, few had moved permanently from their usual home. 82.6% indicated that they remained in the same accommodation. Some of them, in their answer to the open-ended question, indicated that they had moved temporarily, but kept the accommodation without living in it, so as not to have to look for another place on their return. This result is in line with another result from our questionnaire: 63.2% of the PhD students interviewed said that finding accommodation was difficult, and 62.6% found it difficult to apply for housing assistance or housing at the *Centre régional des œuvres universitaires et scolaires* (CROUS). The Asian PhD students also noted an increase in racist acts against them and the fear linked to this feeling of rejection, which led one of the women surveyed to return to her country of origin, Thailand.

More than 70% of the students said that the lockdown context had also had a negative effect on their thesis work. About 10% said that they had not felt any effect and less than 20% said that they had felt positive effects. Opinions were more divided on the impact on the relationship with their supervisor. 48% said that the lockdown had had no effect on this relationship, although those reporting negative effects outnumbered those reporting positive effects, by about 10 points. Many also cited the anxiety generated by the delay in their work due to limited, sometimes impossible, access to their research laboratory, mainly in scientific disciplines. In humanities and social sciences, they pointed out the impossibility of obtaining access to libraries, archives, and their field of investigation. Table 3 shows an association between the discipline of work and the requirement of long periods away from the laboratory. About 45% of PhD students in political science, law, humanities, and social

sciences indicated that their work requires travel for long periods away from their laboratory, while less than 20% said so in sciences, economics, management, administration, and medicine.

Table 3: Proportion of International PhD Students Spending Long Periods Away From Their Laboratories, Depending on Their Disciplines

Discipline	Does your thesis work require you to spend long periods away from your laboratory (field work, experimentation...)? ⁴		
	No	Yes	Total
Law, Political Science	54.5	45.5	100
Literature, languages, language sciences, arts	54.9	45.1	100
Medicine, health, STAPS	83.7	16.3	100
Sciences	81.9	18.1	100
Economics, Management, Administration	86.2	13.8	100
All	72.5	27.5	100

$\chi^2 (4, N=472) = 42.39, p < 0.01$

Cramer's V = 0.28

Source: Questionnaire survey

3.2 Financial difficulties

The results of our study show also financial difficulties linked to the fact of not having or obtaining funding, associated with the completion of their thesis or of having lost income from a job, due to "lockdown" restrictions. It is important here to consider that the number of PhD students funded in humanities and social sciences in France is much lower than in other disciplines: of all the doctoral students enrolled in the first year of their thesis in 2016-2017, 42% of those enrolled in the social sciences, for example, benefited from dedicated funding, compared to 98% in physics and mathematics. In our sample of international PhD students, 57% of respondents applied for and obtained a doctoral contract or an Industrial Agreement for Training through Research (CIFRE) (Agence Campus France, n.d.), regardless of discipline, but they were 74.5% in sciences and only 32.1% in social sciences and humanities. Those who applied but did not obtain a CIFRE or a doctoral contract represented 7.4% of the respondents, 16.7% in social sciences and humanities, but only 0.5% of the PhD students in sciences. A logistic regression was

⁴ This was one of a series of questions where the term "laboratory" referred to the laboratory premises.

performed to ascertain the effects of having a funded PhD on the likelihood to encounter material difficulties during at least one of the two lockdowns, controlling for PhD student's gender, discipline, and the income group of their country of origin (World Bank country classification). The logistic regression model was statistically significant, $\chi^2(9, N=425) = 98.26, p < .0001$. Funded PhD students were nearly four times less likely to encounter material and financial difficulties during the lockdowns (OR=0.27, 95% CI [0.16, 0.45]).

Those most affected were those without unemployment rights or that gave private lessons, had part-time jobs, and were casual workers in the entertainment industry. Added to this picture were those who had only recently started working and did not have the necessary number of months to activate their unemployment rights and who were waiting for their first income from a doctoral contract, like this Canadian woman, who recalls the still-present after-effects of her arrival in France between the two lockdowns:

"I am still recovering from my traumatic arrival in France"
Woman, Sciences, Canada

In addition, for some PhD students, there were difficulties linked to financial crises in their country of origin, as was the case for Lebanon, where the PhD students interviewed mentioned the "depreciation of the currency". Most non-Europeans reported financial difficulties, as well as PhD students in the disciplines of humanities and social sciences. It may be explained, in part, by the social composition of the population. In fact 61.5% of PhD students interviewed had a father who is a senior manager or who had a professional and technical occupation (such as doctor, teacher, scientist, engineer...). 57.2% had a mother in the same socio-professional category, but these figures hide strong disparities depending on the country of origin and disciplines. PhD students from Sub-Saharan Africa are significantly under-represented among those whose fathers are senior executives. It is thus important in a study of the effects of the health crisis on the experience of PhD students to look at the permanent difficulties they encounter, independently of temporary effects linked to specific crises, as these challenges are the most reported in the open questions of our questionnaire. Finally, we will look at what motivates PhD students to choose France and the support they receive or do not receive, which differentiates their experiences according to gender, social and geographical origins.

3.3 *Permanent difficulties and support received, beyond the crisis*

It is important to note here that the motivations as affordability and proximity play a important role in choosing France for many PhD students. The most common scenario in our sample was international PhD students following another course of study in France before entering the doctoral programme. For them the consequences of the health crisis had a moderate impact on their feelings of loneliness, compared to more recently arrived PhD students. Most of the PhD students surveyed thus made the choice to study in France during their higher education career. In our sample, 5.8% had even been admitted to a *classe préparatoire aux grandes écoles* (CPGE. CPGE prepare students for the entrance

examinations to *grandes écoles* and engineering schools in two years. These classes, located in high schools, are accessible with a baccalaureate or an equivalent level, after acceptance of the application by the school principal). 14.3% obtained a Bachelor's degree in France, but it was at Master's level that this choice was dominant; 55.8% of them obtained a Master's degree in France.

Our questionnaire also shows that some students have crossed the borders of several countries during their higher education trajectory, with 7.1% and 9.6% respectively having obtained a Bachelor's or Master's degree in a country other than their own or France. If they were not already living in France and did not participate in prior exchange programmes or attend international schools, the PhD students say they were also indirectly influenced by an internationalised educational and/or academic community in their country of origin or after attending a "Summer School". International PhD students in France are therefore far from being all newcomers and some have a strong territorial anchorage, which has enabled them to overcome the difficulties linked to the crisis more easily. The importance of family support also makes the difference between those who say they have experienced many difficulties and those who have suffered less.

In the decision to move to France, the support received that was most frequently mentioned by PhD students was that of their family, followed by their partner (when in a couple). Next came the international student community, the peers. However, there was a marked gender difference depending on the country of origin. Many more women said that they had made the choice to move to France against the advice of their relatives. A Portuguese woman, for example, spoke of the "old mentality" in southern Europe, an Italian woman stressed that her family would have preferred her to stay in Italy, and a Russian woman was discouraged by both her family and her partner. Finally, a Chinese PhD student mentioned "a cultural cause", in her own words, as the reason for the lack of support she received in her mobility project: "in China, girls are pressured to marry early to have a lifestyle that conforms to the expectations of parents and society". A Chi-Square Test of Independence was performed to assess the relationship between the gender variable and the support of the family ("opposition", "neither support nor opposition", and "support"). There was a significant relationship between the two variables, $\chi^2 (2, N=476) = 7.06, p = .029$. While few respondents (12) mentioned an opposition from their families, almost all of them were women (11).

When cross-tabulating the variables "region of the world" and "mother's employment status", we observed a significant association. Of the PhD students from the European Union, 5% had a stay-at-home mother, while this figure was 54.3% for those from the Near and Middle East and 49.1% from Sub-Saharan Africa. In total, 25.8% of PhD students' mothers were stay-at-home mothers, while 1.9% of fathers were stay-at-home fathers. Of the international PhD students, 11.2% had a father who already has a doctorate and more than 50.9% had a mother with at least a higher education degree (BA-MA-PhD). But once again, the region of the world from which the international PhD students came was associated with the level of education of the mother in particular. Of those from "Western" countries in our sample, 20% had a mother with a PhD, compared to 2% of those from Sub-Saharan Africa. Similarly, 76.7% of the mothers of PhD students from Europe (outside the

EU) had a Bachelor's or Master's degree, whereas this figure was only 8% for those from Sub-Saharan Africa.

When there is support, for many PhD students (and especially Africans), it is financial, as it should be noted that foreign students from outside the EU must be able to prove that they have sufficient income to obtain the right to stay. The support often involves depositing money in a current account. This does not mean that all Europeans are exempt from any control. Today, freedom of movement and residence is one of the attributes of European citizenship. However, this freedom remains subject to certain conditions of resources, still anchored in the original economic pillar of the free movement of workers (Cardarini, 2018). Regardless of the social origin, many students nevertheless spoke of concrete problems linked to complicated and lengthy procedures, and applications for "residence permits" that had to be renewed often. In these complex administrative procedures, on the other hand, some PhD students say that their thesis supervisor helped them with the administrative procedures, but this subject divided the population surveyed.

The Europeans, on the other hand, emphasised how the fact that they had previously completed an Erasmus stay or had friends in the country, who had benefited from it, had helped them in their administrative procedures. On the contrary, numerous non UE-european PhD students, mention the "cumbersome nature of French bureaucracy" and the lack of English language skills, or even sympathy, in the administrative staff of the universities, as well as in all the services for welcoming foreigners. The social background of these PhD students is interesting to consider, as they often come from very privileged backgrounds. These criticisms are very similar to what that has been observed in previous studies on international "White-collar" workers (Robert & Michel, 2010; Ballatore, 2019).

Conclusion

The results of our survey show that we cannot look at the impact of the health crisis on the international experiences of PhD students without looking at the social issue and at the social, disciplinary and geographical backgrounds of the population. The omnipresence of the word "lockdown" over the past year in debates and analyses, both journalistic and academic, has contributed to the blurring of the most trivial social realities, as "lockdown" refers to processes that are less homogeneous, less new, and less fixed than constant repetition of the word would suppose. Social inequalities based on gender and geographical origins, as well as the associated educational paths, are not "consequences of the crisis", they precede it, and "lockdown" measures aggravate certain vulnerabilities.

We can conclude that recent changes to welcoming international students in France, as well as the decreed lockdowns, have indeed affected the PhD experience and work conditions, but have especially led international PhD students to reconsider the value of their training and to question the ability of their destination country, France, to guarantee their well-being. These restrictions have had very serious consequences on PhD students without long-term funding, to do research and for women coming from countries where their place is still strongly linked to the domestic sphere. On the contrary, the most salient external

factors that affect positively the international PhD student experience in France are the stability and the quality of the employment contract obtained and everything related to the simplification of administrative procedures for foreign students.

Finally, this study highlights the importance of students' integration and socialisation into their country of destination, into the working environment and the role that family and peer support plays in this integration. The situation experienced during lockdowns by the interviewed shows in particular the interweaving of factors which, while they support or disturb work-life balance and the progress of the thesis, do so in a differentiated manner depending on PhD students backgrounds. The relationship to time and the lack of a clear separation between professional and non-professional spheres of activity are elements that have already been shown to be delicate in the teaching-research professions (Fusulier, Del rio Carral, 2012). It would benefit from being explored further, concerning international young researchers in a context which has increased virtual mobility at the expense of physical mobility. Will these work/life balance difficulties accentuate or decline? The question would be interesting to explore further due to a constant marketization process in higher education, making it less accessible to people from poor economic background. In our survey in any case, international PhD students have expressed concerns regarding a strict economic reasoning in higher education that contradicts with political claims for its continuing expansion.

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