Why do students consider dropping out of doctoral degrees? Institutional and personal factors

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Abstract

Despite the increasing popularity of doctoral education, many students do not complete their studies, and very little information is available about them. Understanding why some students consider that they do not want to, or cannot, continue with their studies is essential to reduce dropout rates and to improve the overall quality of doctoral programmes. This study focuses on the motives students give for considering dropping out of their doctoral degree.

Participants were 724 social sciences doctoral students from 56 Spanish universities, who responded to a questionnaire containing doctoral degree conditions questions, and an open-ended question on motives for dropping out. Results showed that a third of the sample, mainly the youngest, female and part time students, stated that they had intended to drop out. The most frequent motives for considering dropping out were difficulties in achieving a balance between work, personal life and doctoral studies and problems with socialization. Overall, results offer a complex picture that has implications for the design of doctoral programmes, such as the conditions and demands of part-time doctoral studies or the implementation of educational proposals that facilitate students' academic and personal integration into the scientific community in order to prevent the development of a *culture of institutional neglect.*

Keywords: Doctoral education; dropping-out; socialization; researcher education; personal and institutional factors

Starting a research career usually involves the completion of a doctoral degree, an option taken by an exponential number of people in recent years. In the European Union, the number of PhD holders has risen from 72,000 in 2000 to about 118,000 in 2011. This means an increase of over 60% in 10 years, and it is greater than the change experienced in the US or Japan. The Nordic countries, Switzerland, Germany and the United Kingdom have the highest growth rates. Although in Spain, where this study was conducted, growth is below the European average, the number of PhD holders has risen by about 35%[1] in the last five years.

This growth, probably due to the higher employment rates and the better salaries of PhD holders (Auriol, Misu and Freeman 2013), co-occurred with important changes in legislation brought about by the (sometimes difficult) promotion of European convergence in the creation of the European Higher Education Area (EHEA) (Ariza, Quevedo-Blasco, Bermúdez, and Buela-Casal 2012; Bermúdez, Castro, Sierra, and Buela-Casal 2009). As a consequence, doctoral programmes[2] were redesigned to adapt them to the demands and conditions of current research. Changes involved reducing time required to finish a thesis, providing specific training to develop competencies related to scientific productivity, and promoting interdisciplinarity and international mobility.

Despite these changes and the increasing popularity of doctoral education, many students do not complete their doctorate, and very little information is available about such students in Spain. The scarce data indicate very high dropout rates, between 70 and 90% (de Miguel 2010), which are well above the 50% average reported in international studies, mainly conducted in the US (Ali and Kohun 2006; Gardner 2009a, b; Lovitts 2001; Lovitts and Nelson 2000). Some studies have argued the percentage varies depending on the discipline (for example, it is higher in social sciences) and access to funding (Allan and Dory 2001; Ali and Kohun 2006).

However, there are virtually no studies exploring the variables associated with dropping out and its causes from the students' perspective. As Barbara Lovitts stated over 15 years ago in a

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[1] European Commission, DG Research and Innovation. *Researchers' Report, 2014*. Deloitte Consulting. Available at:
http://ec.europa.eu/euraxess/index.cfm/general/researchPolicies
[2] EUA, 2005. Doctoral programmes for the European knowledge society. Report on the EUA doctoral programmes project. Retrieved from: www.eua.be.

pioneering study on the subject, this still seems to be an *invisible problem* in the Spanish university context (Lovitts 2001). In the literature, we only found one study analysing supervisors' opinions about the motives behind students' success (Agudelo, Fuillerat, Bretón-López, Poveda-Vera, and Álvarez 2003) and a more recent study describing the perceptions of a small number of students' about the evolution of their experiences throughout the doctoral degree (Fuentes, García and Aranda 2015).

Understanding why some students consider that they do not want to, or cannot, continue with their studies is essential to help reduce doctoral dropout rates and, above all, to provide relevant data to guide changes aimed at improving the overall quality of doctoral programmes. This study focuses on the motives students give for considering dropping out of their doctoral degree.

The decision to drop out: a multidimensional problem

In the international context, research has revealed that the motives mentioned by students who intend -or have intended- to drop out of their studies are not limited to personal, institutional and doctoral programme characteristics, or research-related work conditions. These are important factors that need to be taken into account. However, as research results pointed out, different dimensions of problems and challenges emerge in the interpretation students make of the affordances and restrictions within and between these factors in the particular situations they experienced during their doctorate; thus, it is in the interplay of these factors where multiple dimensions of problems and challenges might be observed (Ali and Kohun 2006; Allan and Dory 2001; Lovitts 2001; Smith, Maroney, Nelson, Abel and Abel 2006; Spaulding and Rockinson-Szapkiw 2012).

Regarding this interrelation, some students' perceived motives[3] have been repeatedly identified by research, mainly in Anglo-Saxon contexts, as likely to contribute to dropping out of a doctoral programme.

First, some students experience a feeling of *isolation*, as they perceive that they are alone, without affective or emotional help to face the many demands encountered on the path to

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[3] We use the notion of "motives" to refer to the driving forces underlying students' decisions, in our case, to consider remain or drop-out from their doctoral studies. We broadly rely on the Activity Theory's notion of motive that is created through the tensions and contradictions within the elements of the system (Engeström 2001); that means we understand they are not only internal entities oriented to drive behaviour but a process of expression of a subject's subjective configuration of his or her performance (Hedegaard, Edwards & Fleer 2011)

obtaining a PhD (Lewis, Ginsberg, Davies and Smith 2004). In general, isolation has been related to the lack of alignment between students' initial expectations of the journey and the real situation once they are on the programme, which indicates a lack of knowledge of the demands and challenges of taking a doctoral degree (Ali and Kohun 2006).

The feeling of *isolation* may appear at different stages of doctoral study, and the motives for this feeling vary depending on the point in time. On admission, many students find themselves in an unfamiliar situation, different from bachelor's degree and postgraduate courses, where they must negotiate new meanings of their role as students. Likewise, *isolation* may appear or persist in the middle of the process. In this case, it may be associated with problems related to a lack of progress in the research. Finally, it may also occur at the end of the doctoral degree, when students again have to face an unfamiliar situation: the thesis defence; a task for which they may feel unprepared (Ali and Kohun 2006; Smith *et al*. 2006).

Inadequate *socialization* is the second motive that has been found to explain why people drop out of doctoral studies. Those who have greater risk of not completing their studies are less integrated into academic, professional and social life in their departments (Ali and Kohun 2006; Gardner 2006, 2008, 2009b; Lovitts 2001; Pyhältö and Keskinen 2012; Smith *et al*. 2006), and some studies indicate that only a third of the students are considered active agents in their community (Pyhältö, Stubb and Lonka 2009). In turn, active students are more engaged in their doctorate and less likely to drop out (Spaulding and Rockinson-Szapkiw 2012). Participating in team projects, and having the opportunity to solve real problems in collaboration with more experienced researchers, as well as frequent contact with other students, are important experiences for the development of an identity as a researcher (Allan and Dory 2001; Bain, Fedynich, and Knight 2010; Gardner 2006; Haworth and Bair 2000; McAlpine, Paulson, Gonsalves, and Jazvac-Martek 2012; Pyhältö and Keskinen 2012; Spaulding and Rockinson-Szapkiw 2012; Weidman 2010).

In this regard, the study of Pyhältö and Keskinen (2012) indicated that the quality of participation in the community depends on students' capacity to act as *active relational agents*, that is, to create networks and be proactive in their academic communities. Their results suggest that, although a minority, students considered as active relational agents in their academic communities, were more interested in their studies, had more positive emotions, and were less likely to consider dropping out of their studies than students who perceived themselves as more passive.

Similarly, McAlpine *et al*. (2012) highlighted the importance of developing personal networks in supporting doctoral students' academic and personal integration. Their conclusions contribute to the integration of personal and institutional factors by referring to the *culture of institutional neglect*, that is, the lack of educational initiatives to promote the establishment of personal networks that facilitate academic and personal integration. Their results also show that these aspects are essential for the development of future researchers' identity.

Effective participation in the researcher community also requires scientific writing and communication abilities (Castelló, Iñesta and Corcelles*, 2013; Spaulding and Rockinson-Szapkiw 2012). Some recent studies indicate that researchers who have inappropriate, maladaptive conceptions of writing (that is, those who consider writing as an innate ability, procrastinate, suffer blocks and find it hard to finish their texts), not only experience greater anxiety, have worse relations with the community and feel less able to complete their thesis, but also were more likely to consider dropping out of their doctoral studies (Castelló, McAlpine and Pyhältö*, in press). Decisions on thesis format, whether it is a traditional monograph or a compendium of papers, have also been related to the intention to drop out. Specifically, students who write monographs find it harder to publish and consider dropping out more frequently (Cerrato-Lara, Castelló, García-Velázquez and Lonka, in press; Lonka, Chow, Keskinen, Hakkarainen, Sandström, and Pyhältö, 2014).

Socialization of doctoral students is also strongly related to the *relationship with the supervisor*. The lack of intellectual stimulation in the supervision, and bad or no communication, are the most important motives for dropping out (Smith *et al*. 2006). Some findings pointed out - in different contexts and with extensive samples- that the quality and frequency of supervisory meetings as well as a supportive departmental intellectual climate are related with students' higher levels of overall satisfaction and completion rates (Trigwell and Dunbar-Goddet 2005; Zeng, Webster and Ginns 2013). Moreover, engagement with research training and early appointment of a supervisory team have been positively associated with thesis completion (Tinto 1993).

A third motive research indicates as responsible for dropping out is related to difficulties in achieving *balance between personal life and academic and professional demands* of a doctoral degree. Some studies have found that some students are incapable of balancing both aspects, while other students do not want to balance them at all if that means sacrificing

important areas of their personal life (McAlpine *et al.* 2012). In these cases, the decision to interrupt doctoral studies is intentional and conscious, in order to prioritize other irreplaceable or more pleasant aspects of personal life (Allan and Dory 2001; Smith *et al.* 2006). A different nuance can be found in studies by Gardner (2009a, b) and Manathunga (2005), who stated that some students decide to abandon their doctoral studies due to a perceived mismatch between their values and those that they attribute to the university and departmental culture, or due to disagreement with the science policy and atmosphere in research teams or contexts.

Finally, regarding the lack of *resources*, particularly time and funding (Gardner 2009a, b; Smith *et al.* 2006; Spaulding and Rockinson-Szapkiw 2012) findings are diverse. Some of those studies claimed that the risk of dropping out is greater when a student does not have a salary, or has a job outside the university. On the other hand, Lovitts (2001) concluded that dropout rates were higher among students with grants for full-time research than among students who worked in the university with lower funding as assistant lecturers. Other studies reached similar conclusions and it has been suggested that this could be due to the second group having stronger ties with academic life and culture (Gaff 2002a, 2002b).

This study explores the problem of dropping out from students' perspective in order to increase knowledge of the variables associated to doctoral persistence. It assumes that students' interpretations of their experiences are situated, and inextricably related to the characteristics and conditions of the doctoral programmes, contexts and institutions in which they participate, in line with the results of the literature reviewed above.

More specifically, our objectives were to:
1. Describe the characteristics of Social Sciences doctoral students who intended to drop out at some point during their doctoral studies, compared to those who did not consider this possibility.
2. Analyse the motives underlying the intentions to drop out of doctoral studies, from students' perspective.
3. Analyse the relationship between the motives given by students and those sociodemographic and background variables previous research has associated with the conditions of their research activity (Pyhältö and Keskinen 2012; Pyhältö et al. 2016), namely:

    a. Discipline

    b. Type of enrolment

    c. Thesis format

    d. Work modality

e. Funding

f. Gender and age

Method

Participants

We contacted doctoral schools of public and private universities in Spain that offered doctoral programmes in Social Sciences (n=75). 56 universities (74%) agreed to participate and sent the link to the *on-line* survey to their doctoral students (n=1888). We collected 828 questionnaires. After discarding uncompleted and partially completed responses, 724 remained and were included in the analysis. Therefore, the response rate was 38.36%, which can be considered very high for this kind of study (Nulty 2008). The final sample of 724 doctoral students was distributed among disciplines as follows: Education (40.9%), Economics (23.1%), Psychology (22.1%) and Law (14.0%). Participants' average age was 37 years (SD=9.16). 30.4% of the students stated that at some point of the doctoral degree, they had considered dropping out (see Table 1).

Table 1. Sample characteristics

Variable	Values	Frequency	Percentage
Gender	Female	437	60.4
	Male	287	39.6
Age	Under 30	196	27.1
	From 30 to 39	284	39.2
	From 40 to 49	155	21.4
	50 or over	89	12.3
Discipline	Education	160	22.1
	Economics	296	40.9
	Psychology	167	23.1
	Law	101	14.0
Type of enrolment	Full-time	383	52.9
	Part-time	341	47.1
Thesis format	Monograph	411	56.8
	Collection of papers	172	23.8
	Not defined	141	19.5
Work modality	Individual	525	72.5
	Team	199	27.5
Funding	Contract or post at university	108	14.9
	Grant	214	29.6
	Job outside university	273	37.7
	No income	107	14.8
	Benefits	22	3.0
Intention to drop-out	Yes	220	30.4
	No	504	69.6

Procedure

Data collection

Data were collected by an online questionnaire (using Survey Monkey tool) adapted from previously validated instruments (Pyhältö et al. 2016; Castelló, McAlpine and Pyhältö, in press). It included nine questions: two about sociodemographic variables (*gender and age*) and seven variables on doctoral degree conditions (*discipline, type of enrolment, thesis format, work modality*, *funding*, *intentions to drop out and motives for dropping out*). All of them were closed-ended questions (response options are displayed in Table 1), except for the question on motives for dropping out ('*Explain briefly why you have considered dropping out of your doctoral studies')*, which allowed students to explain their motives with no restrictions on the number of words.

A multistage procedure was used to access students and gather data. First, we contacted doctoral schools to ask them to participate in the study. Second, we contacted departments and programme directors when advised to do so by the doctoral school. Staff from doctoral schools or departments contacted doctoral students, sent them the information about the project and requested their voluntary participation[4]. The link to the questionnaire was available for 3 months. During that period, three reminders were sent to students to encourage them to respond or finish the questionnaire. Participants could start to fill in the questionnaire and, if necessary, complete it at a different time using the same computer.

Data analysis

The data analysis was carried out in three consecutive phases, each directly link to a specific objective of the study. For the first objective, we analysed differences between students who had considered dropping out and those who had not in relation to the rest of the variables (*gender, age, discipline, type of enrolment, thesis format, work modality and funding)*. For the age variable, we compared the means of the two groups (*t-student*). For the other variables,

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[4] The study was approved by the various ethics and research committees involved: Ethics Committee of Authors' University (CER-URL-2013/005) and Spanish Ministry of Economy and Competitiveness (Ref.: CSO2013-41108-R).

which were nominal and descriptive, groups comparison was done by means of *Pearson's chi-square test* and the analysis of *corrected standardized residuals*.

Regarding the second objective, qualitative content analysis was used to scrutinize the answers to the question "*Explain briefly why you considered dropping out of your doctoral studies*". Emergent categories were established through a recursive process that involved the following steps: First, after an iterative reading of all the answers, we classified them into descriptive codes that paraphrased the motives given by students. Second, we revised the initial codes to detect inconsistencies, mismatches and overlaps. As a consequence, some codes were discarded or redefined, and others were created. Third, the codes were grouped into categories. This last step involved discussion and reformulation of the categories until agreement was reached on their characteristics and definition. In those cases, in which students mentioned more than one motive (44,7%), responses fell into as many categories as motives mentioned.

To establish the reliability of the system of categories, two of the authors of this paper independently analysed 33% of responses (n=70) and their level of agreement was assessed. Interrater agreement ranged from 0.75 to 1 (Kappa's coefficient), indicating a high agreement. Once the reliability of the category system had been ensured, the analysis of the remaining responses was divided between the two researchers randomly[5].

The relationships between the categories of motives for dropping out and the variables associated with doctoral degree conditions -third objective- were analysed using *Pearson's chi-square test* and an analysis of *corrected standardized residuals*. All the quantitative analyses were conducted using SPSS (v19) package.

Results

Characteristics of students who considered dropping out of a doctoral degree *versus* those who did not consider it

Results show differences between the two groups - intention of dropping out *versus* no intention- in relation to *gender* ($\chi2$ (1) = 5.018, Cramer's *V* = .083, p< .05), *discipline* ($\chi2$ (3) = 13.999, Cramer's *V* = .137, p< .05), *type of enrolment* ($\chi2$ (1) = 4.995, Cramer's V = .083, p<

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[5] All the answers were in Spanish and consequently analysis were initially done in this language by authors whom were native Spanish speakers. Translation into English of examples was done using forward- backward translation.

.05) and *age* (t(722) = 2.45. p<.05). As shown in Table 2, women were 1.31 times more likely to consider dropping out than men; psychology students were 2.3 times more likely than law students; and part-time students 1.29 times more likely than full-time students.

Those students that were more likely to consider dropping out were 1.82 years younger than students who say they had not considered dropping out (Table 3). No differences were found between the groups in relation to other characteristics and conditions of doctoral studies (*thesis format, work modality and funding*).

Table 2. Comparison of the characteristics of the two groups of students in relation to their drop out intentions

		Considered dropping out	
		No	Yes
*Gender**	Female	295 (67.5%)*	142 (32.5%)*
		z= -2.2	z= 2.2
	Male	216 (75.3%)*	71 (24.7%)*
		z= 2.2	z= -2.2
*Discipline**	Psychology	102 (61.4%)*	64 (38.6%)*
		z= -3.0	z= 3.0
	Education	214 (70.2%)	91 (29.8%)
	Economy	126 (73.7%)	45 (26.3%)
	Law	86 (81.9%)*	19 (18.1%)*
		z= 2.7	z= -2.7
*Type of enrolment**	Part-time	227 (66.6%)*	114 (33.4%)*
		z= -2.2	z= 2.2
	Full-time	284 (74.2%)*	99 (25.8%)*
		z= 2.2	z= -2.2

Note. z: corrected standardized residuals

* p <.05

Table 3. Differences between groups (intention of dropping out *versus* no intention) in relation to age

	Not drop out	Drop out		
	Mean (DS)	Mean (DS)	*t*	*gl*
Age	37.52 (9.44)	35.70 (8.32)	2.45*	722

Note. * *p<.05.*

Motives for dropping out of doctoral studies

The motives students mentioned for considering dropping out were grouped into six main categories referring to the following aspects: *balance between work or personal life and doctoral studies* (25.5%), *socialization and integration into the scientific community* (20.0%), *motivation and attribution of meaning* (18.9%), *resources* (17.8%), *personal and research skills* (10.9%) and *stress and emotional management* (6.9%) (see Table 4).

Table 4. Frequencies and percentages of the categories of motives for dropping out

Category	*N*	*%*
Balance between work or personal life and doctoral studies	70	25.5
Socialization and integration into the scientific community	55	20.0
Motivation and attribution of meaning	52	18.9
Resources	49	17.8
Personal and research skills	30	10.9
Stress and emotional management	19	6.9
Total	275	100

Balance between work or personal life and doctoral studies

The category mentioned most frequently by students was related to difficulties and problems in maintaining a suitable balance between personal or work life and the doctoral degree. Almost a third of the sample stated that difficulties in balance were the main motive for their intention to drop out of the degree. The following is a highly representative example of these problems: '[…] *the difficulty in balancing the doctoral degree with family life, which means that the PhD affects my personal relationships*' (P945). Other difficulties mentioned were the impossibility of combining doctoral studies with work, especially when working outside the academic university context, as shown in the following examples: '[*because*] *I don't have a doctoral scholarship, and I have to work. Doing both activities at the same time is extremely exhausting*' (P975); '[*because*] *I work at the same time as taking the doctoral degree and the two activities are completely unrelated*' (P1263).

Socialization and integration into the scientific community

The second category of motives, mentioned in about 20% of the cases, refers to the difficulties students experienced in socializing and being part of the scientific community. Comments in this category referred to relational problems at three levels: supervisor; people or groups in the department or doctoral programme, and broader relations with the scientific community. In the first case, problems were related to the poor quality of the relationship between student and supervisor, which usually led to feelings of isolation. The following examples illustrate both kinds of difficulties: '[*I considered dropping out] because I felt very alone, especially when my supervisor left in the middle of the doctoral degree'* (P1516); [*I considered dropping out my PhD] when I felt my supervisor did not care about my work as I expected and the topic of my research had no repercussion. I had a heated argument with him where I did not feel that my work was valued and appreciated, and where I felt professionally humiliated.* (P1021). Regarding the difficulties in establishing effective relationships with groups in their universities, students frequently mentioned feeling isolated and not well integrated into the departmental structure, with negligible relations with other research groups, as shown in the following quotes: '*There are very few or no links with the university'* (P40); '[…] *on many occasions I have not found the support that I think should be offered by my area of study'* (P1313). Difficulties related to lack of socialization with the broader scientific community were mentioned less frequently. Some students considered that there were no channels for participation, as indicated in the following comment: '*There are no scientific groups devoted to and creating synergies in my area of study'* (P481).

Motivation and attribution of meaning

A similar percentage of students (18.9) mentioned problems related to a lack of motivation because they could not find meaning in their doctoral studies. This was often due to a poor of understanding of the demands of doctoral studies, which resulted in a misalignment between them and student's expectations, as shown in the following comment: '*[because] it is a very long project and the results that I'm seeing do not compensate for all the effort that I've had to make'* (P1390). This category also includes comments revealing that the meaning students attributed to the doctorate and to research was inconsistent with their personal values. The following examples are representative of this kind of comment, which frequently showed a clear disagreement with, or rejection of, academic values: '*[…] the despotism of the university vassalage frequently makes me consider it'* (P474); '*[…] I believe that the current system is too*

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competitive. The obsession with publication and beating others is something I don't like, and it could have a negative impact on the quality of publications' (P712). Finally, in this category, some comments referred to demotivation caused by uncertainty about their career options, especially in the university context: '*Due to the lack of work prospects in the research career and its precariousness*' (P232).

Resources

This category, which was mentioned in 17.8% of responses, includes comments related to problems of funding and time available for doctoral studies, as well as to the lack of suitable training options for the research. In the case of funding, the comments mainly referred to difficulties in obtaining a doctoral scholarship that would ensure sufficient income. Comments related to lack of time were often associated with difficulties in meeting the deadlines, whereas most comments about training referred to the mismatch between training options and perceived needs, as illustrated in the following example: '*[…] training activities within the doctoral programme are scarce, too specific and shorter than expected*' (P40). Finally, a small number of comments mentioned the difficulties associated with managing administrative procedures. This is shown in the following example: '*Because so many procedures and so few resources to undertake my project discouraged me*' (P927).

Personal and research skills

This category includes comments related to some students' perception that they are unprepared, that is, they do not have the competencies required to do the type of tasks required in the doctoral degree. A total of 10.9% of responses referred to this lack of competencies as the motive to consider dropping out of the doctoral programme, as shown in the following quotes: '*I have thought about it [dropping out] because I don't think I'm capable of carrying out this project*' (P1091) '*[because] sometimes I think that I'm not good enough or hard-working enough to complete it*' (P300). In addition to comments of a general nature such as those mentioned above, some responses indicated more specific problems related to one or more phases of the research process (e.g. design, collection and analysis of data), as illustrated in the following examples: '*because it seemed that I couldn't access the sample in any way*' (P1064); '*Due to my problems with statistical analysis, I lost the motivation to continue and I often feel unable to take the project forward*' (P906). Finally, this category also includes comments related to the

perception of the doctoral work advancing too slowly: '*Because I didn't make any progress, I realized that my topic was too broad and impossible to complete*' (P1947).

Stress and emotional management

The last category refers to comments about emotional difficulties caused by the demands of the doctoral studies, which, in some cases, led to anxiety and depression. The following comment is an example of it: '*[…] the only things the doctorate brought were stress, insecurities and problems with depression, there was no academic or personal satisfaction*' (P1377).

Relationship between motives for dropping out and the conditions of the research activity

Regarding the relationship between the aforementioned motives and the conditions of students' research activity, most of the differences were found in relation to the *balance between work or personal life and doctoral studies* (see Table 5). Part-time students ($\chi2$ (1) = 12.228, Cramer's V = .261, p< .001) and those employed outside the university environment ($\chi2$ (3) = 22.070, Cramer's V= .354, p< .001) were more likely to mention these difficulties. Specifically, part-time students considered dropping out because of their inability to combine personal and work life with the demands of the doctoral degree in 51.6% of the cases, compared to 26.1% for those who worked full-time on the doctoral degree. Students employed outside the university context were more likely to consider dropping out for this motive (59.5%) than students with no income (23.5%) or those with a scholarship (21.7%) (see Table 5).

In contrast, difficulties in *socialization and integration into the scientific community* were mentioned more frequently by students who worked individually on their thesis and were not active part of a research team ($\chi2$ (1) = 12.390, Cramer's V = .259, p< .001). In relation to disciplines ($\chi2$ (3) = 8.042, Cramer's V = .208, p< .05), education students mentioned this motive more frequently (39.5%) than law students (6.3%).

We also found significant differences in relation to the *lack of resources* ($\chi2$ (3) = 21.724, Cramer's V = .351, p< .001). 55.9% of students with no income gave this motive, whilst only 16.2% of students employed outside the university context mentioned it.

In turn, *lack of personal and research skills* was more likely to be given as a motive for dropping out by psychology students (30.8%) than by students in the other disciplines ($\chi2$ (3) = 10.284, Cramer's V = .236, p< .05).

Finally, problems related with *stress and emotional management* were more frequently mentioned by grant holders (23.9%) than by students working outside university (5.4%) ($\chi 2$ (3) = 11.370, Cramer's *V*= .254, p< .05).

Table 5. Relationship between motives for dropping out and the conditions of research activity

	Balance work/ personal life and doc.	Socialization and community	Motivation and meaning	Resources	Personal abilities	Stress
Discipline						
Psychology	16 (30.8%)	13 (25.0%)	15 (28.8%)	17 (32.7%)	16 (30.8%)* z=3.2	4 (7.7%)
Education	37 (48.7%)	30 (39.5%)* z= 2.1	21 (27.6%)	21 (27.6%)	9 (11.8%)	7 (9.2%)
Economics	11 (26.8%)	13 (31.7%)	17 (41.5%)	7 (17.1%)	4 (9.8%)	7 (17.1%)
Law	6 (37.5%)	1 (6.3%)* z= -2.2	4 (25.0%)	4 (25.0%)	2 (12.5%)	1 (6.3%)
Type of enrolment						
Part-time	47 (51.6%)** z= 3.5	26 (28.6%)	23 (25.3%)	22 (24.2%)	14 (15.4%)	7 (7.7%)
Full-time	23 (26.1%)** z= -3.5	29 (33.0%)	29 (33.0%)	27 (30.7%)	16 (18.2%)	12 (13.6%)
Work modality						
Individual	56 (38.4%)	54 (37.0%)** z= 3.5	45 (30.8%)	34 (23.3%)	27 (18.5%)	16 (11.0%)
Team	14 (35.9%)	3 (7.7%)** z= -3.5	12 (30.8%)	15 (38.5%)	4 (10.3%)	3 (7.7%)
Funding						
Contract within the university	8 (36.4%)	3 (13.6%)	9 (40.9%)	9 (40.9%)	2 (9.1%)	2 (9.1%)
Grant	10 (21.7%)** z= -2.9	10 (21.7%)	18 (39.1%)	9 (19.6%)	10 (21.7%)	11 (23.9%)* z= 3.3
Contract outside the university	44 (59.5%)** z= 4.5	24 (32.4%)	19 (25.7%)	12 (16.2%)** z= -2.9	11 (14.9%)	4 (5.4%)* z=-2.0
No income	8 (23.5%)** z= -2.2	15 (44.1%)	5 (14.7%)	19 (55.9%)** z= 4.1	6 (17.6%)	2 (5.9%)

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Note. z: corrected standardized residuals. * p< .05. ** p <.001.

Discussion and conclusions

In this study we addressed the problem of dropping out of doctoral studies from the students' perspective. Results enabled us to draw the following conclusions. First, it is worth highlighting that approximately a third of the sample stated that at some point of their doctoral studies they had intended to drop out. Although this proportion might seem lower than the dropout rates reported in the international literature (Ali & Kohun 2006; Gardner 2009a, b; Lovitts 2001; Lovitts & Nelson 2000), it is very high if we consider that these students were still enrolled, and therefore real drop-outs were not included. The students who expressed an intention to drop out were mainly women who had opted to study part-time, and were in the youngest group of students.

Second, even though motives for considering dropping out were similar to those described as relevant in international research (Ali and Kohun 2006; Fuentes *et al*. 2015; Gardner 2009a, b; Lovitts 2001; Lovitts and Nelson 2000; Manathunga 2005), some interesting nuances can be highlighted from our results, such as a higher presence of difficulties in achieving a balance between work or personal life and doctoral studies, and problems with socialization. There was also less emphasis on aspects such as difficulties in managing stress and emotions, or a perceived lack of research skills. Although these last motives have been classified as personal in the past (Gardner 2009a, b; McAlpine *et al*. 2012; Pyhältö and Keskinen 2012), a detailed analysis of students' comments indicates that this interpretation is clearly restrictive. Instead, these difficulties could better be attributed to inconsistencies between institutional procedures and resources, and students' needs and abilities. This is seen, for example, in students' references to incessant, excessive bureaucratic procedures as a cause of stress, or to a lack of training that meets their needs as an explanation for their perceived lack of research skills (Ali and Kohun 2006; Lovitts and Nelson 2001; Spaulding and Rockinson-Szapkiw 2012).

Contrasting the motives that students considered to be key to their intention to drop out with the conditions of their research activity, also offered a complex picture of the relationship between personal and institutional factors. In this sense, the higher risk of dropping out among part-time students for motives related to difficulties in work, life and study balance calls the attention on the demands of studying a doctorate in this type of enrolment. The relationship found between perceived difficulties in socialization into the researcher community and the

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predominance of individual work points in the same direction. Many studies have highlighted the perception of incompetence and isolation that students experience when they have to face challenges involved in working in a doctoral thesis alone (Ali and Kohun 2006; Bain *et al*. 2010; Pyhältö and Keskinen 2012). Judging from our data, students linked these feelings with a lack of socialization and integration into the community, not only in the relationship with thesis supervisors but also those with other members of research teams, departments or doctoral programmes.

These students would not easily have the opportunity to act as *active relational agents,* to, in the words of Pyhältö and Keskinen (2012), create networks and be proactive in their relevant communities, which, ultimately would appear to be one of the most important goals of research training, and consequently of doctoral education.

Overall, our results have some implications for the design and conception of current doctoral programmes and some related practices. On one hand, it seems necessary to reflect on the conditions and requirements involved in studying a doctoral degree as a part-time student. Although there is wide variation, in most of the Spanish doctoral programmes that we consulted, changes and adjustments are limited to increasing the time that students have to complete the programme, while the rest of requirements remain the same (publication and scientific communication requirements and monitoring or follow-up forms and documents, among others). These situations can be more of hindrance for students who work in a non-academic context, who might need specific support to understand and respond to these demands. It is also important to develop systems to help these part-time students take advantage of training courses and modules since research has shown they support completion and can provide a sense of community (Humphrey 2012; Pilbeam, Lloyd-Jones and Denyer 2013). On the other hand, there is a need to analyse how the integration of doctoral students into research teams is conceived and promoted in the social sciences. According to our results, this lack of integration not only refers to individual participation in isolated tasks, but has institutional implications (Pilbeam, Lloyd-Jones and Denyer 2013). It calls for the design of educational procedures aimed at facilitating students' academic and personal integration into the researcher and disciplinary community in order to prevent what McAlpine and collaborators (McAlpine *et al.* 2012) call a *culture of institutional neglect.*

We are aware that our study has several limitations. The first main limitation is related to the nature of the data, which refer to the *intention to drop out*, rather than dropping out itself.

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Our students had considered giving up their studies, but they were still enrolled. This was the only plausible way to obtain data on dropping out from the students' perspective, since Spanish universities do not keep records of people who have definitely dropped out of doctoral studies; they continue to be a silent minority of students (Lovitts 2001; Lovitts and Nelson 2000).

Second, it is difficult to determine the representativeness of the sample. Data on doctoral degree enrolment at Spanish universities are presented in an aggregated form every year (MEC 2015). As we do not have access to dropout rates, but only to the number of theses that have been defended, we cannot calculate the real population of students who are active and enrolled on new programmes. However, the approach through doctoral schools enabled us to access students from most of the Spanish universities. Among those that agreed to participate were the universities with the highest number of doctoral students. The high response rate, due probably to the multistage data collection procedure, supports the validity of the data collected.

Finally, it is clear that to better understand motives for dropping out and the interrelation between personal and institutional aspects, it would be useful to have diverse, qualitative data to compare students' perceptions with contextual characteristics of programmes and departments. This is our intention in the second phase of the broader project of this study. However, due to the lack of recent and extensive studies on the topic, we consider relevant and necessary to first establish an initial outline of the situation in order inform future analyses. We hope this effort to make students' perceptions and voice visible contributes to increasing interest in research on the motives underlying intentions to drop out at different points of a doctoral degree, and to the improvement of doctoral education.

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