Online Master's Students' Profile and Motives for Enrollment

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Abstract   This research addresses the profile and motives for enrollment of online master's students in three different fields of knowledge (humanities, social sciences and experimental sciences) at an online university. The data has been collected through an ad hoc questionnaire; the sample, obtained of 253 UNIBA master's students, has been analyzed using a descriptive methodology and a factor and comparative analysis of the investigation dimensions. The results include the different access profiles of the students that have been identified based on a set of sociodemographic variables. Furthermore, the differences between their motives for enrolling and the latent factors that can be identified. These results are discussed, and compared to traditional, face-to-face, master's degrees, which have had an extremely increase on enrollment in the last few years. The importance of guidance and tutoring are examined as tools to guarantee quality standards and support student's perseverance and overall success.

Keywords   Online University, Sociodemographic Profile, Motivation, Master's Students

1. Introduction

During this next academic year, we'll be celebrating the 20th anniversary of the Bologna Declaration [1]. As Rodríguez [2] or Vázquez [3] have pointed out, over these two decades universities have been deeply transformed and this process of change is ongoing. It is essential that we now stop and take the time to see where we are on that path to renewal. One major change has been the great number of virtual education options that have appeared (educational programs and online campuses). These have brought about a major shift in our understanding of what a university is -and they will continue to do so [4, 5, 6]. Online education has deeply transformed what, how, when, where and even who is studying.

Online education options have appeared in many forms, from exclusively online universities to traditional brick-and-mortar institutions developing online tools (with very different formats, from specific degree programs to new online centers) [7]. The case we've studied is a traditional university that has created an independently managed online platform that has carried over most of the elements of the conventional university, including, to a large extent, faculty [8,9]. Professors need to adapt to a new online setting and the new ways of interacting with students. They can find this challenging given the need to provide timely responses (speed of interaction), the content of those communications (personable tone, intelligibility…) and adjusting to each student's pace (given the far greater personalization of the learning experience) [10,11,12].

There is no doubt that online education is a growing trend all over the world, and that master's programs are an area that has seen some of the greatest growth in recent years [13,14]. They are considered an essential tool in the implementation of a knowledge-based society, given their role in professional development and skill building.

In absolute terms, online master's programs have seen the greatest growth of all international higher education options [15,16]. Spain is, furthermore, one of the European countries with the highest percentage of master's students, according to recent OCDE data [16]: 14.3% of all Spaniards between the ages of 25 and 64 have a master's degree. Since its implementation, the number of available master's has seen significant growth and enrollment has been multiplied by 1000 from the academic year 2006-07 to 2015-16 [17]. During 2016-17 187000 students were enrolled in a fully accredited master's program, which was almost 4000 more than the previous year.

It is therefore of key importance to study the profile and motivation of students in these programs, and how this may vary across different modalities of education and fields in order to support higher education planning and policies at every level. Many countries are making research about these new educational realities a priority, such as England, where draws on an annual survey of postgraduate academic experience; *The Higher Education Academic* (UK), where

analyzes the motivations and expectations of applicants and satisfaction with the academic experience of enrolled students [18]; or the United States, where the *Master's Completion* project, published by the Council of Graduate Schools (USA) is based on a broad survey of master`s student's adjustment and perseverance [19]. Apart from these initiatives, there is also other more specific research that can be used to draw preliminary conclusions.

Applying to master's programs may be driven by several different motivations. Among these, the most universal ones stem from structural changes in the job market and the wider economy, which values life-long learning as a guarantee of timely and relevant skills [20,21,22]. Every study highlights the value of postgraduate qualifications in a changing and increasingly competitive job market as a major motivation for enrolling in such programs. Llanes-Ordóñez, Figuera-Gazo, Jurado-de los Santos, Romero-Rodríguez and Torrado-Fonseca [23] studied education master's students' motivations in Spain and found that the financial crisis had driven an increase in applicants and had affected students' goals: defending their position in the job market (for active professionals) or breaking into it (unemployed or recent graduates). The importance of an educational program's usefulness has also been seen in other countries. For example, Chalela, Valencia and Arango [24] surveyed 728 undergraduate students in Colombia and found that 88.5% were mindful of the impact of educational achievement on their future job prospects.

Apart from seeing education as a means to specific ends, applicants also have other relevant motivations and expectations when choosing to apply to a specific master's program. Figuera, Buxarrais, Llanes and Venceslao [25] studied motivation among social and legal sciences students in face-to-face education programs and found many intrinsic motivation factors for applying to a master's program, such as access to an educational experience, increasing or updating their knowledge and skillset and, for some, developing the option of going on to study for a PhD. Watkins [26] and Coterill-Walker [27] distinguish motivations related to personal development (intrinsic) and professional development (extrinsic). In their analysis of postgraduate education, Pereda [11] or Zahran [28], identify elements linked to self-development (professional skills) and instrumental goals (professional improvement or promotion). Other noteworthy motivations include gaining the option of switching professional fields or even starting a career from scratch (given that many master's programs cross the boundaries between fields and often have broad enrollment requirements). Although this may be less frequent, postgraduate educational experience may enable students to change tack in mid-career (particularly in social and legal sciences, arts and humanities).

Pereda [11] points out that master's students can be people whose background is in that same field, or on the contrary, people who are attempting to initiate a major professional change. These different motivations for enrolling in a master's program and the different personal and situational profiles will lead to highly divergent ways of "being" in the master's program [11] and will also impact student's ultimate degree of satisfaction [29, 30, 31]. The importance of this information becomes clear when we look at dropout rates: global Spanish data (2009-10 cohort) indicates an attrition rate of 24.9% (19.3% in the first year).

Published research has identified differences according to discipline or field of study [29,32], and the fact students may be pursuing a professional-skills- or a research-focused curriculum within a given field [33,25] and according to modality (online vs. face-to-face). Figuera and cols. [25] found significant differences in the profiles of applicants according to type of master and their reasons for applying. This research separated the three types of master's programs that are currently offered: research-oriented, focused on professional skills, and master's programs that are required to be licensed to practice in certain professions. The importance of analyzing students' motivations satisfaction is directly proportional to how well the program fits students' original motivation. This finding highlights the importance of analyzing student's motivations and expectations and if they are likely to be met by the master's program as it is currently taught.

There is also a link between type of master, age and career background. People who enroll in research-oriented master's programs tend to be older, with a well-established career, seeking to update their knowledge. These students tend to be more satisfied with their educational experience than other profiles. Applicants to master's programs that are a licensing requirement for certain professions tend to be younger and have limited professional experience; their primary goal is getting a better job [25].

When it comes to online education, there are other factors that need to be kept in mind when studying program applicants. This type of education has brought about significant changes, broadening the range of applicant profiles even further. There are a number of explanations for this: the ease with which this type of education transcends national borders -and overlooks cultural and contextual issues-, the removal of geographical and timetable-related barriers, providing the added value of being able to access education in another country, at a prestigious institution [4,12]. Analyzing who applicants are is essential to ensure a good fit between the program being offered and their reasons for applying and subsequent satisfaction.

This article attempts to describe the profile of online master's program applicants, and their reasons for choosing that program. The questions that are addressed are: What are the profiles and motivations of students who enroll in these programs? Can student's profiles be considered independent from the program they are applying to? How are these variables associated?

2. Materials and Methods

Quantitative, descriptive data were gathered from an *ad hoc* questionnaire, used to collect information from online master's program students. The objectives of this research are: (O1) Analyze enrolling students' profile, distinguishing each type of program; and (O2) inquire into the motivations that lead to choice of program and how they relate to students' profiles.

2.1. Participants

The study population consists of currently enrolled students of officially accredited master's programs at Centro Universitario Internacional de Barcelona (UNIBA) -Spain-. These programs are in three different areas of higher education: social sciences (master's in Psychopedagogy, Teaching of Spanish as a Foreign Language), humanities (master's in Advanced Spanish and Latin American Literature and Land Planning and Environmental Management), and experimental sciences (master's in Renewable Energy and Energetic Sustainability). The final sample was 253 students out of a total of 595 enrolled students (sampling error 4.8%), from five different master's programs offered by UNIBA: Spanish as a Foreign Language (30%), Advanced Spanish and Latin American Literature Studies (12.8%), Renewable Energy and Energetic Sustainability (8.8%), Land Planning and Environmental Management (19.2%) and Psychopedagogy (29.2%). Sample distribution can be seen in the table below (Table 1).

Table 1. Population and sample distribution across participating master's programs

	Population	Sample	Percentage
Spanish as a Foreign Language	87	75	86.21
Advanced Spanish and Latin American Literature Studies	82	32	39.02
Renewable Energy and Energetic Sustainability	66	22	33.33
Land Planning and Environmental Management	180	48	22.75
Psychopedagogy	180	73	40.56
Total	595	253	42.52

2.2. Data collection instrument

The questionnaire was administered online after finishing their master's program at the end of the 2016/17 academic year. It is an adaptation of the "Social Sciences Master's Students Analysis" questionnaire [23]. Analyzed dimensions are a) sociodemographic data, b) prior academic and professional experience, c) type of master's program, d) motives for choice and career management; and, lastly, e) academic satisfaction (as a measure of academic fit). In this article the study will be analyzing student backgrounds and motives for choosing to enroll in a specific program.

In order to measure motives, a ten-item scale was developed that evaluates the weight of different issues in that student's choice (e.g. "finding a better job", "professional specialization", "switching to a new professional field", "redefining career") using a scale from 1 (not at all) to 5 (very much); reliability analysis of this scale indicates that internal consistency is adequate (Cronbach α = 0.71).

3. Results

In this article we are presenting an analysis of data from five master's taught at UNIBA: a) first of all, the different profiles that have been seen, according to a set of sociodemographic variables (age, sex, type of enrollment, employment, source of funding for education or family situation) and differences between master's programs; and b) secondly the enrollment motivation survey scores will be analyzed according to program and underlying motivational factors.

Analyzing the general profile data, we find that UNIBA students have an average age of 37 years, almost 70% are women and a large majority work in a job related to the program they have enrolled in and are paying for their own tuition; 80% have left their parent's home and live independently and 50 percent have at least one child. As for location, 55,4% are international students, which in this case means they are studying from a location outside Spain.

In Table 2 we can see that these profiles vary from one master's program to another. Psychopedagogy students are the youngest (average age 32). This is related to circumstances of application (recent graduates or no work experience) and to parenthood. As for sex, the areas of study that see the greatest proportion of male students in undergraduate programs also have more men enrolled in master's programs, as is the case with Renewable Energy and Energetic Sustainability. Although most students are located abroad, this varies between programs. The Spanish as a Foreign Language program has the highest proportion of Spanish students. There are, on the other hand, similarities; in most programs the proportion of students who are employed is more than 75%, and they are studying subjects that are related to their work. Their gainful employment enables them to pay for their own tuition.

The second objective addresses the motivations for choosing specific master's and examines if there are differences between programs. Overall, UNIBA students are not seeking a radical change of track in their career or a change of field; on the contrary, they see their choice of a master's degree as a way to develop their professional skills or acquire further educational experience.

Table 2. Analyzed master's programs student profiles

Master's programs	Sample	Age	Women	Recent graduates or no work experience	Hold a job related to degree	International students	Self-funded tuition	Live independently	Have children
	(n)	Average (SD)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Spanish as a Foreign Language	75	39.8 (10.98)	84.0	22.7	77.3	27.1	70.7	84.5	56.2
Advanced Spanish and Latin American Literature Studies	32	39.0 (10.91)	68.8	28.1	83.9	53.3	81.3	79.3	38.7
Renewable Energy and Energetic Sustainability	22	35.3 (8.42)	27.3	18.2	90.9	82.4	72.7	72.7	50.0
Land Planning and Environmental Management	48	39.1 (9.44)	37.5	14.6	91.1	90.7	85.4	84.8	59.6
Psychopedagogy	73	32.9 (8.26)	84.9	26.0	88.2	57.1	60.3	75.0	37.3
Total	253	37.2 (10.15)	68.8	22.1	85.5	55.4	72.3	80.2	49.4
Significant differences		0.00 (*)	0.00 (**)	0.09 (**)	0.22 (**)	0.00 (**)	- (ª)	-(ª)	0.03 (*)

(*)Kruskal-Wallis nonparametric average comparison test (sig. $p < 0.005$)
(**) Chi-squared independence test (sig. $p < 0.05$)
(ª) Test assumptions were not met.

Table 3. Reasons for enrolling in each master's program: average and standard deviation.

	Spanish as a Foreign Language	Advanced Spanish and Latin American Literature Studies	Renewable Energy and Energetic Sustainability	Land Planning and Environmental Management	Psychopedagogy	Average differences test (K-W)
	Average (SD)	Average (SD)	Average (SD)	Average (SD)	Average (SD)	Sig ($p < .05$)
Change professional field	2.7 (1.29)	2.9 (1.23)	3.1 (1.06)	2.7 (1.25)	2.9 (1.20)	0.54
Redefine career	2.4 (1.34)	2.8 (1.31)	2.5 (1.14)	2.5 (1.32)	2.4 (1.28)	0.61
Improve professional situation	3.5 (0.86)	3.5 (0.81)	3.6 (0.73)	3.6 (0.87)	3.8 (0.55)	0.59
New educational experience	3.6 (0.69)	3.9 (0.3)	3.6 (0.80)	3.8 (0.62)	3.8 (0.46)	0.11
Expand network of contacts	2.9 (1.11)	3.1 (1.03)	3.3 (0.84)	3.4 (0.89)	3.1 (1.02)	0.11
Stay in the job market	3.4 (0.95)	3.2 (1.08)	3.6 (0.73)	3.6 (0.76)	3.7 (0.69)	0.07
Better salary	3.3 (1.04)	3.3 (1.08)	3.4 (0.91)	3.6 (0.68)	3.5 (0.77)	0.74
Expand professional skills	3.9 (0.29)	3.9 (0.30)	3.8 (0.53)	3.9 (0.24)	3.9 (0.30)	0.62
Increase educational assets	3.9 (0.25)	3.9 (0.34)	3.7 (0.55)	3.9 (0.31)	3.9 (0.26)	0.18
Stay active	3.4 (0.99)	3.7 (0.69)	3.5 (0.74)	3.9 (0.50)	3.7 (0.58)	0.02
Access PhD program	2.9 (1.14)	3.6 (0.84)	2.9 (1.32)	3.7 (0.75)	3.2 (1.03)	0.00

After having checked test assumptions, a nonparametric average comparison test was used (Kruskall-Wallis) to identify statistically significant differences in prevalence of each motive for enrolling between different master's programs. In the last column we can see that the difference between two of the analyzed items (staying active and accessing a PhD program) is, in fact, significant ($p<0.05$). Professionally oriented master's programs (such as Teaching Spanish as a Foreign Language or Renewable Energy and Energetic Sustainability) enroll few students interested in going on to a PhD program, unlike the Advanced Spanish and Latin American Literature Studies and Land Planning and Environmental Management programs, which have a much larger proportion of students interested in a doctorate.

In order to identify latent dimensions and homogeneous groups of variables that will enable us to interpret our data, exploratory factor analysis was performed using principal component extraction and Kaiser Varimax rotation. Kaiser-Meyer-Olkin and Bartlett test assumptions were met for factor analysis (KMO=0.761; χ^2= 981.531; d.f. = 55; p=0.00). This analysis led to a four-factor model which explains 69.78% of total variance.

Table 4. Factor analysis (rotated components)

	Component			
	1	2	3	4
Stay in the job market	0.841			
Better salary	0.737			
Improve professional situation	0.708			
Expand network of contacts	0.651			
Stay active		0.743		
New educational experience		0.710		
Access PhD program		0.640		
Expand professional skills			0.861	
Increase educational assets			0.840	
Redefine career				0.879
Change professional field				0.726

Factor 1 includes items linked to extrinsic, instrumental, motivations, namely the need to ensure a return on educational investment by enhancing future earning potential and chances of overall professional success.

Factors 2 and 3 cover rather more intrinsic motivations, namely developing a skill set and acquiring knowledge. Factor 2 items are more related to personal development, whereas factor 3 items are linked to professional assets.

The fourth and last factor in this model is clearly related to career change and includes just two items.

Finally, average scores using this four-factor model were compared to identify statistically significant differences between groups defined using our initial sociodemographic variables. One-way ANOVA and Student t-test for independent samples were used, after checking relevant test assumptions.

Statistically significant differences were seen ($p<0.05$) between sociodemographic variables and factor 2 items. Clear differences appear if we look at students' levels of intrinsic motivation:

- With the highest scores, we find students enrolled in research-oriented programs (Advanced Spanish and Latin American Literature Studies) or master's that can lead to a PhD or provide a new educational experience (Land Planning and Environmental Management or Psychopedagogy).
- Secondly, we find men who are based abroad as having particularly high intrinsic motivation scores, whereas Spanish women tend to report much more instrumental reasons for applying.
- Finally, the lowest scores on this factor are seen among full-time employed students whose jobs are in fields related to their chosen program and who can afford to invest in their own tuition. Their main motivation is reported as preserving their position in the job market and enjoying a new educational experience.

4. Discussion and Conclusions

The results from this research have allowed us to describe the profile of online master's students. The data from this sample points to a woman over the age of 37, with professional experience in the field of her chosen program, who has her own home and, in 5 out of 10 cases, has children. Except for gender, which is found to have a similar proportion compared to traditional classroom master's programs, the rest of the sociodemographic variables studied here present results that are remarkably different from what is seen in brick-and-mortar institutions. In Spain, available data confirm the trend towards enrolling in master's programs straight after graduation, which leads to much lower average ages and previous work experience. The most recent report from the Spanish Ministry of Education and Science [17] indicates that 65% of master's students are under the age of 30 and that it is becoming rarer for them to have worked full-time before enrolling. It should be pointed out that these data differ from what was found by Figuera and cols. [25], who report a much more diverse student body in face-to-face master's programs. Those results are in line with the findings of Oguz, Chu and Chow [33] who highlight the differences between students enrolled in distance learning and traditional classroom programs.

How students fund their education emerges as a particularly interesting factor. 7 out of 10 students pay for their own tuition. In face-to-face master's programs (mainly in public universities) there is greater diversity of sources of funding, as grants and scholarships support a significant number of students. As for international

students, many of these are funded by scholarships from their home countries.

Where the study definitely see greater diversity in online programs is in nationality. 55,4% of students in this sample live abroad, mostly in Latin America. Spanish students are also much more evenly spread all over the country, compared to face-to-face programs. This is surely a result of the far more geographically accessible nature of online education. As Bermúdez and cols. [4] and Sánchez and cols. [12] have found, an institution's prestige and the enriching nature of transnational education are assets that will weigh on potential enrollees' choice of program.

The motivations for enrolling that are reported by online program students are more homogeneous that what is seen in face-to-face master's students [25,11]. In all cases, though, students value the impact further education has on their professional development (factor 3) and personal development (factor 2).

This analysis of student profiles seems to confirm that online education has broadened access to higher education. However, data also point to some added difficulties with this type of master's program, namely, time management [7]. As we have pointed out in our analysis of enrollee profiles, most students are adults who hold a full-time job and are parents. Those responsibilities impinge on the time available for study and on the quality of that time [11], adding to students' stress levels. Chu and Orguz [34] point out the impact of these situations: quality of academic work may decrease, and progress may be delayed, generating frustration and anxiety in students, affecting their motivation and making dropping out an increasingly attractive option. Sure enough, data from other studies, such as Watkins [26], confirms that time scarcity due to role overload was a decisive factor in students who abandon a master's program.

Developing an information and orientation program before actual master's enrollment is essential to ensure students will make a realistic decision and be able to commit to that educational program. Orguz, Chu and Chow [33] and Chu and Oguz [34] have documented the benefits of student planning and adaptation. They state that the best antidote for attrition is thoroughly informing students before they enroll to ensure that they have realistic expectations regarding the demands of that specific program in terms of knowledge, skills and workload. This will enable them to effectively plan ahead.

Students diverse backgrounds and locations can also be a challenge for an online master's program. Globalization has increased student mobility and diversity may extend to issues such as differing academic backgrounds, levels of readiness for postgraduate study and personal and professional identities [35]. The academic cultures prevailing in each country can be a major challenge, not just because they hail from different places, but also because their previous academic experience may have taken place exclusively in a bricks-and-mortar setting. Managing diversity in such a context will affect students, professors and the organization itself [35].

There are a number of published research papers that document the importance of student autonomy in preventing drop out and achieving academic success [7]. Borges [36] has pointed out that students in the era of autonomous learning need to be proactive and self-motivated. This is even more relevant to online education, which relies on students' ability to manage their educational process. Students' diverse backgrounds [37] created the term "digital autonomy" to describe the importance of forging bonds of social interdependence. This is why a tutor/mentor figure – i.e. someone who will guide and be available for students throughout their educational process -is essential, and should be a part of every master's program, particularly in online learning settings. This faculty member will be tasked with motivating students, getting involved in their learning process, encouraging critical thinking and enthusiasm for the learning process [38] as well as helping out with professional development [39] and facilitating students' integration into the educational community [40]. This action should be developed on three levels, as stated by Garrison, Anderson and Archer [41]: social presence, which refers to the quality of social interaction in online learning environments, teaching presence, which involves developing tasks that create learning opportunities, and cognitive presence, which involves the process of building knowledge.

The results presented in this article improve our knowledge and understanding of the profiles and motivations of students who enroll in online master's programs. There are clear differences in student profiles and motivations depending on the type of program involved (online vs. face-to-face). This information is key in order to plan for the challenges ahead and create the necessary orientation and support resources that will enable quality education, student perseverance and overall student success. Future research should further analyze motivations for enrollment, academic satisfaction and professional outcomes of education.

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