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Article

Motivation of students in graduate programs: an analysis from differences in profiles in the field of Administration

A motivação dos estudantes de programas de pós-graduação: uma análise a partir das diferenças de perfis na área de administração

La motivación de los estudiantes en los programas de postgrado: un análisis basado en las diferencias de perfiles en el ámbito de la Administración

Ana Maria Carneiro – Universidade Estadual de Campinas | Campinas | São Paulo | Brazil. E-mail: anamacs@unicamp.br | Orcid: https://orcid.org/0000-0001-6688-1881

Adriana Bin - Universidade Estadual de Campinas | Campinas | São Paulo | Brazil. E-mail: adribin@unicamp.br | Orcid: https://orcid.org/0000-0001-9774-2753

Luciane Graziele Pereira Ferrero - Universidade Estadual de Campinas | Campinas | São Paulo | Brazil. E-mail: lucianee@unicamp.br | Orcid: https://orcid.org/0000-0001-7892-4113

Cristiano Morini - Universidade Estadual de Campinas | Campinas | São Paulo | Brazil. E-mail: cmorini@unicamp.br | Orcid: https://orcid.org/0000-0003-2868-3280

Abstract: Knowledge about students' motivation in graduate programs is little explored in the literature. This article aims to analyze the profiles and motivations of students in the field of Administration, with emphasis on a graduate program in Brazil. By a six-year longitudinal analysis of a program from a public institution in the state of São Paulo, Brazil, using multiple correspondence analysis, the results show the existence of three clusters that group characteristics related to the reason for choosing the institution and the course, academic experience, professional experience, and sociodemographic characteristics. The analysis of the students of the program shows distinct profiles among master's and doctoral students and highlights challenges to be faced by the managers of the program. It also opens a longitudinal follow-up research agenda on satisfaction with the program and skills development using questionnaires applied at different stages of the students' trajectory. The methodology used can be adapted and used in other graduate programs, and the insights are potential sources of comparative analysis with similar programs, aiming at actions that can increase the appeal to students.

Keywords: program evaluation; student profile; expectations.

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Resumo: O conhecimento sobre a motivação dos estudantes para programas de pós-graduação é um aspecto pouco explorado na literatura. Este artigo tem como objetivo analisar os perfis e as motivações dos estudantes na área de Administração, com ênfase em programa de pós-graduação no Brasil. Por meio de uma análise longitudinal de seis anos de um programa de uma instituição pública do estado de São Paulo, Brasil, utilizando a análise de correspondência múltipla, os resultados mostram a existência de três clusters que agrupam características referentes ao motivo de escolha da instituição e do curso, experiência acadêmica, experiência profissional e características sociodemográficas. A análise dos discentes do programa mostra perfis distintos entre os estudantes de mestrado e doutorado e evidencia desafios a serem enfrentados pela gestão do programa. Também abre uma agenda de pesquisa de acompanhamento longitudinal sobre a satisfação com o programa e desenvolvimento de competências por meio dos questionários que são aplicados em diferentes fases da trajetória dos estudantes. A metodologia utilizada tem potencial para adaptação e utilização em outros programas de pós-graduação, bem como os *insights* são fontes potenciais de análise comparativa com outros programas semelhantes, visando ações que possam aumentar a atratividade de estudantes.

Palavras-chave: avaliação de programa; perfil do estudante; expectativas.

Resumen: El conocimiento sobre la motivación de los estudiantes de programas de postgrado es un aspecto poco explorado en la literatura. Este artículo tiene como objetivo analizar los perfiles y motivaciones de los estudiantes en el área de Administración de Empresas, con énfasis en los programas de posgrado en Brasil. A través de un análisis longitudinal de seis años de un programa de una institución pública del estado de São Paulo, Brasil, utilizando análisis de correspondencias múltiples, los resultados muestran la existencia de tres grupos con características relativas al motivo de elección de la institución y del curso, experiencia académica, experiencia profesional y características sociodemográficas. El análisis de los estudiantes del programa muestra perfiles diferenciados entre los estudiantes de maestría y doctorado y pone de relieve los desafíos que debe enfrentar la gestión del programa. También abre una agenda para la investigación longitudinal de seguimiento de la satisfacción con el programa y el desarrollo de competencias a través de cuestionarios que se administran en diferentes etapas de la carrera de los estudiantes. La metodología utilizada tiene potencial para ser adaptada y utilizada en otros programas de postgrado, y las percepciones son fuentes potenciales de análisis comparativo con otros programas similares, con vistas a acciones que puedan aumentar el atractivo de los estudiantes.

Palabras clave: evaluación de programas; perfil del estudiante; expectativas.

1 Introduction

Since the late 1960s, graduate education has been considered one of Brazil's most successful experiences in higher education and the science and technology sector (Balbachevsky, 2005). According to a review of national literature on master's and doctoral students from 1995 to 2015, conducted by Silva & Bardagi (2015), less than 10% of studies are dedicated to analyzing the profile of graduate students. This can also be found as an investigation gap in international graduate research (Posselt; Grodsky, 2017).

Few studies (Guerin; Jayatilaka; Ranasinghe, 2015; Lamas; Rezende; Mendonça, 2021) address graduate students' motivations. The study by Elatia *et al.* (2020), for example, focuses on the evaluation of the attributes of graduate students, contributing to a longitudinal evaluation.

This article aims to analyze the motivations and profiles of students in a graduate program with master's and doctoral degrees and their developments for the management of the program. The study derives from a more comprehensive research project monitoring the trajectory of students in the graduate program of an administration course at a public university in the state of São Paulo, Brazil. The students' experience is followed from application in the selection process to the post-defense period.

The focus on the administration area is justified in terms of the large number of programs in Brazil (the fifth largest area) and the rapid change in programs due to the growth of the professional master's degree in recent years. According to data from Coordination for the Improvement of Higher Education Personnel (CAPES), the state of São Paulo has 45 graduate courses (including master's and/or doctorate and/or professional master's and/or doctorate) evaluated and certified in the area of Public and Business Administration, Accounting Sciences, and Tourism (as defined by CAPES).

Of these, only ten are outside the Metropolitan Area of São Paulo, and only four are located in the inland São Paulo (where the analyzed program is located).

The chosen program was the Graduate Program in Administration (PPGA), which has been in force since 2017. Until 2022, it had 123 admissions (69 master's and 54 doctoral students), of which 27 defended (20 masters and seven doctors) and two evaded. The analysis developed in this article was derived from the perception of differences in the profiles and motivations to pursue the PPGA among master's and doctoral students since 2017.

This difference appears in Balbachevsky's (2005) and Festinalli's (2005) studies, who pointed out that masters of all areas of knowledge usually focus on non-academic markets. On the other hand, more recent data from the Employment Panel of CGEE (2021) show a different situation. In 2017, of the total number of masters and doctors in Administration with formal employment, 51% of masters and 86% of doctors worked in Teaching. However, this analysis does not include masters and doctors without formal employment, a situation more common among masters (33%) than among doctors (19%) and which can mean an entrepreneurial trajectory, non-formal academic ties by participation in research projects, continuous studies (of masters in the doctorate), working abroad, or even unemployment.

Thus, the original contribution of this study lies in the discussion about the profiles and motivations of graduate students, with emphasis on programs in the area of Administration. Such discussion reflects aspects related to students' access to graduate school and the contribution of graduate school to students' development, both in terms of skills and professional insertion. The article also shows and evaluates the internal differences within the same program — an uncommon approach in the literature — and the challenges these differences pose to program management. The analysis of motivations is also justified by the recent decrease in the number of graduate students in Brazil (Marques, 2022).

The article is structured as follows. After reviewing the literature on the subject, the PPGA and the methodology used will be presented. The longitudinal research design follows the cohorts formed by the enrolled classes per year of entry into the program and uses primary (questionnaires) and secondary data. Then, the results and discussions will be presented. The results were obtained from data processing with multiple correspondence analysis (MCA) associated with Hierarchical Clustering on Principal Components. The last section presents the final remarks and limitations of the research.

2 Literature review

Studies on higher education are considered a quite consolidated area of knowledge. There are many topics in this area, with emphasis on:

> Equal opportunities, social inequalities, stratification and diversity, investments in social policies, strategic decisions regarding the training of professional staff and the development of science, technology, and innovation in the globalized world," as pointed out by Neves, Sampaio & Heringer (2018, p. 33, free translation).

However, concerning students, research is much more developed at the undergraduate level than at the graduate level (Posselt; Grodsky, 2017).

The available research on graduate students is recent and concentrated in specific fields of knowledge, such as Health (Ferreira *et al.*, 2015; Ferreira; Morrayre, 2013; Louzada; Silva Filho, 2005; Mendes; Venceslau; Aires; Prado Júnior, 2010; Teixeira *et al.*, 2017; Viniegra *et al.*, 2019); Sciences, Technology, Engineering, and Mathematics (STEM) (Crede, 2011; Head *et al.*, 2021; Maclachlan, 2006; Mendes, 2017; Moreira; Velho, 2012); Education (Abramowicz *et al.*, 2009); Law (Marks; Moss, 2016); and Administration (Mccray; Joseph-Richard, 2021; Meurer; Costa, 2020; Oliveira; Tenorio, 2020; Stewart Williamson; King Junior, 2017).

One can list at least three predominant themes in these studies. The first addresses the factors that influence the completion of the course, such as guidance (Bryson; Kowalske, 2022; Costa, Sousa; Silva, 2014; Denis; Colet; Lison, 2019; Duke; Denicolo, 2017; Ismail; Majid; Ismail, 2013; Leite Filho; Martins, 2006; Pyhältö, Vekkaila; Keskinen, 2015), the sociodemographic characteristics of students (parental education, race/skin-color/ethnicity, gender, nationality) (Posselt; Grodsky, 2017), and the integration of students into the course (Castelló *et al.*, 2017; Devos *et al.*, 2017; Hay; Samra-Fredericks, 2016). The second theme brings together studies that analyze the profile of students who graduated with subsequent professional development (Louzada; Silva Filho, 2005; Mendes; Venceslau; Aires; Prado Júnior, 2010; Oliveira; Tenorio, 2020; Viniegra *et al.*, 2019). Finally, there are several studies on the quality of life and mental health of graduate students (Imeri *et al.*, 2021; Levecque *et al.*, 2017; Malagris *et al.*, 2009; Mccray; Joseph-Richard, 2021; Teixeira *et al.*, 2017; Radons, Cunha; Lucca, 2017).

On the other hand, there is little research analyzing the profiles and motivations that lead individuals to enroll in graduate school (Artes, 2013; Posselt; Grodsky, 2017; Williamson; King Junior, 2017), given that greater attention is paid to graduates, to the detriment of entrants. Next, we rescue the themes of the students' profile and motivations for entering graduate school.

2.1 Profile of graduate students

In Brazil, information on the sociodemographic profile of graduate students is scarce because the data are not part of the higher education census, and the National Council for Scientific and Technological Development (CNPq) and CAPES databases have little information on the main sociodemographic characteristics. Comparing data from the National Household Sample Surveys (PNAD) from 2004 and 2014, Gonçalves et al. (2019, p. 194, free translation) observed that "although there was an increase in

the rate of Black people with graduate degrees, from 0.12% (2004) to 0.24% (2013), the growth was even greater in the rate of White people." Those who attended master's and doctoral courses in 2013 represented 1.09% of the total White population and 0.36% of the Black population. In São Paulo, these percentages are 1.37% and 0.39%, respectively.

Regarding gender, Santos (2020), analyzing the data of PNAD Contínua 2018, found that "the number of men and women who decide to attend graduate studies is very low" (Santos, 2020, p. 28, free translation). However, women's participation increased from 3.2% in 2016 to 5.3% in 2018 (SANTOS, 2020). To try to understand the factors that lead to the decision to pursue graduate school, the author compared the profiles of female graduate students with those of female undergraduate students regarding sociodemographic variables of PNAD-2015. First of all, Santos (2020) showed that the profile of the two groups is quite similar and that:

> A woman with a graduate degree is mostly White, does not live with her mother or with a spouse or partner, is not married, was not born in the federative unit she currently lives, has no child, receives more than five minimum wages, and is aged from 25 to 30 years old" (Santos, 2020, p. 31, free translation).

After using the probit regression analysis, the statistically significant variables were income (an increase in income raises the probability of doing graduate school by 23%) and self-declaring White (12% reduction in probability). This last result could be explained by affirmative actions in higher education or by failures in self-designation of color.

According to Venturini and Feres Júnior (2020), affirmative actions have been established at least since 2002 to combat inequalities in access to graduate school. Artes (2018), using data from the 2010 Demographic Census, discusses gender and race inequality by the gender parity indices (IPG)—woman/man ratio—and race (IPR)—Black/White ratio. Among undergraduate students, the IPG was 1.33, and the IPR was

0.40, showing a predominance of Women and White people. Among graduate students, the IPG was 1.05 (parity situation within the margin of error), and the IPR was 0.34, showing greater racial inequality.

In Brazil, there are some studies on the profile of graduate students in Administration (focusing on graduates) about gender and/or racial inequality. Still, there is no convergence, probably due to the sample difference. Oliveira and Tenório (2020), in research with 629 graduates of private higher education institutions in Rio de Janeiro and Belo Horizonte, found that most graduates were male (70%), with a mean age of 37 years old, and, among the masters, 57% had previously done specialization courses. Meurer and Costa (2020) conducted a nationwide study with 1,816 business students, with 51% female, 70% White, and 52% aged up to 33 years old.

Thus, despite the growth of access of Black people and women to graduate school in Brazil, some concerns arise if we compare it with the international literature regarding lack of diversity in certain areas (Head *et al.*, 2021), such as business (Stewart *et al.*, 2008), in which Administration is inserted, and with its effects on social stratification (Posselt; Grodsky, 2017), on socialization, satisfaction, and completion of studies (Ellis, 2001).

2.2 Motivation of graduate students

Regarding motivation, Jayatilaka e Ranasinghe (2015) broadly reviewed studies, separating the results by field of knowledge. In Business, the main reasons for entering graduate school were:

> Entry into academia; professional development and improvement; entering a new career; personal enrichment; preparation for teaching; promotion to consulting services; obtaining advanced knowledge for entrepreneurship; progress within the current organization; and job stability (Guerin; Jayatilaka; Ranasinghe, 2015, p. 6).

In the analysis that Lamas, Rezende & Mendonça (2021) developed based on questionnaires applied to students from various areas and on the use of exploratory factor analysis, five main reasons emerged: support from family and friends; intrinsic motivation in search of knowledge; influence of teachers; previous research experience; and career progression. In all areas, one of the recurring motivations is the expectation of better remuneration associated with the title of master or doctor.

Concerning the professional master's degree, according to the study by Lamas, Rezende & Mendonça (2021), the highest expectations of Administration courses students are in professional training. The expected professional developments (obtaining higher wages, improving administrative practices at work) and the lowest are related to the development of research and entry into the teaching career. In Giuliani's (2010) study, also with students of a professional master's program in Administration, the result was the opposite. The students' motivations were mainly to carry out academic teaching activities and research and not to act in the business market.

Raman and Pramod (2021) examined the employability of graduates in Administration. The authors analyzed MBA programs in Administration at the highest-ranked universities in India. They argue that a major aspect of Administration education is creating leaders for the corporate world. In Brazil, the MBAs represent *lato sensu* graduate programs (professional or specialization degrees), while the master's and Ph.D. programs are called *stricto sensu*.

In a complementary way, Andrade, D'Ávila & Oliveira (2004) and Ribeiro (2005) discuss the motivations for graduate studies in Brazil from the perspective of the skills required from graduates for insertion in the labor market. According to the authors, a social demand exists for masters and doctors "outside and beyond academia." Thus, although there is a historical concentration of masters and doctors in the education

sector (CGEE, 2016) and a graduate model that strongly stimulates this trajectory, other areas also create a space for action, whether associated with research or not.

This discussion refers to the institutionalization of graduate studies in Brazil in the 1960s. Initially, Opinion 977 of 1965 of the Council of Higher Education, known as Sucupira Opinion, regulated that graduate schools should train two types of professionals: highly qualified researchers and specialists (Festinalli, 2005; Mattos, 2020). The first type would be the one ideally offered by the doctorate, and the second, the master's degree. However, as Baeta Neves (2020) points out, the master's degree did not acquire a more professional character and a final stage of training, becoming associated with a teaching career qualification and a prerequisite for the doctorate. The main factors that contributed to this adaptation were, on the one hand, the design of the career and the process of teacher recruitment in public universities, which demanded masters for the beginning of the career and doctors for the highest positions. On the other hand, this was reinforced by the centralized evaluation process of CAPES. According to Baeta Neves (2020, p. 25, free translation):

> In practice, the debate on the particularities of training and research in graduate studies in the different fields and the distinction between master's and doctoral degrees gave way to the formal debate on the teaching career. Career entry changed at public universities, which began requiring doctoral degrees and research experience. The implications of this new situation for the understanding of the master's degree, however, are not yet perceived.

In this sense, there is a broad understanding that graduate education should have a dual role, which involves training researchers and teachers for public and private higher education institutions and training qualified professionals to work in other sectors and institutions (Balbachevsky, 2005). This second role on professional performance, although it can also be explored within programs with academic guidance, justified the creation of—and still justifies the existence of—professional master's degree courses in Brazil in the 1990s and more recently of the professional

doctorate (Festinalli, 2005; Giuliani, 2010; Machado, Santos; Quaresma, 2014; Ribeiro, 2005).

However, as discussed by Machado, Santos and Quaresma (2014, p. 957), such division does not exist in some countries. It is common to understand the master's degree from its professionalizing nature with a research aspect, without weakening the professional aspect to the detriment of research, so that "the master's degree intertwines the professional and research aspects." In this same sense, according to Mattos (2020), the two types of programs should be integrated into a single type that combines the excellence of academic and research training with a more explicit professional orientation. Moreira and Velho (2012) defend a similar point, reinforcing that, since the 1990s, countries with scientific prominence have already oriented their graduate education to various types of professional performance, seeking to meet broader demands of society beyond academia. On the other hand, there are interesting experiences of professional masters, such as the one presented by Gomes and Elizalde (2014), for Costa Rica, where this modality emphasizes applied research oriented to the solution of problems in specific areas, with significant differences compared to the academic master's degree.

According to data from GEOCAPES, professional master's and doctorate courses correspond, respectively, to 12% and 1% of the total *stricto sensu* graduate courses accredited in Brazil. The field of Administration, due to its applied nature, occupies the 3rd position in the number of professional courses, behind Education and Public Health: they are 29% of the total number of professional master's courses and 2% of professional doctorate courses, largely concentrated in the state of São Paulo. This is the result of a trajectory that has been outlined since the 1990s, as presented by Cirani, Silva and Campanario (2015), who emphasized the high growth rate of the number of professional master's degree courses in the graduate program in the field of Administration, compared to the academic master's and doctorate, from 1998 to 2011.

It is possible to argue that, despite the growth and consolidation of professional master's degrees in Administration, the boundaries between them and academic courses are still very tenuous. Although the professional master's degree emerged with a proposal for diversification by CAPES (Balbachevsky, 2005), according to Festinalli (2005), there was not enough differentiation from the academic title, given that some criteria remained similar, such as the expected profile of graduates, aimed at both the market and academia and the evaluation indicators of CAPES. This leads to doubts in students' expectations. In the following section, we focus on the academic program in Administration, the object of study in this article.

3 The Graduate Program in Administration of the University of Campinas

The Graduate Program in Administration (PPGA) of the University of Campinas aims to train masters and doctors to contribute at a high level to national and international scientific production, research development, and higher education. Therefore, it is structured to offer a solid theoretical basis, critical and innovative capacity, committed to scientific and technological development, aiming at the demands of society.

The PPGA has specific objectives: (a) to contribute to the advancement of frontier knowledge in the field of Administration; (b) to develop methods and tools applicable to management practices, entrepreneurship, and sustainability; (c) to train researchers with advanced scientific knowledge in Administration; (d) to train students with different organizational approaches and integrated business vision in competitive and cooperative environments; (e) to contribute to the development of the regional environment and integrated into the relevant national and international debates.

Regarding the profile of graduate students, the program proposes to train masters and doctors capable of (a) academic performance in teaching, research, and extension in Administration and related areas; (b) conduction of applied activities of

organizational research, decision-making, sustainability, and entrepreneurship; (c) action in strategic areas, which involve high-complexity problem-solving.

The master's course UNICAMP offers 15 subjects with four credits each; three subjects are mandatory, and 12 are elective, six of them in each of the two lines of research. A total of 26 credits are required to complete the course and the thesis defended before an examining board. The doctoral course shares the same catalog of elective subjects as the master's degree, plus three specific disciplines. Classes take place in the morning, afternoon, and/or evening periods, according to the subjects offered in a given semester. A total of 38 credits are required to complete the course and the dissertation defended before an examining board.

In 2022, PPGA had 24 full professors and three collaborators. Four professors make up the Program Committee, including the coordinator. The selection process takes place annually and is organized in two stages for the qualified candidates. The first stage, of eliminatory and classificatory character, consists of the evaluation of the candidate's performance in the ANPAD Test. It is a proficiency test applied nationwide since 1987 by the National Association of Graduate Studies and Research in Administration. It has 220 graduate courses in Administration and Accounting Sciences in its selection processes. Applicants are called to the second stage of testing after achieving the minimum required score on the test, at the rate of two applicants per place. The second and last stage of the selection process, of a classificatory nature, consists of the oral argument of the candidate. After the argumentation, candidates receive a grade with a score from 0.0 to 10.0, considering a weighted mean of the values assigned to the following criteria: general grade in the ANPAD test; curricular analysis; performance in argumentation and relevance; alignment of the pre-project and research project with the PPGA research lines.

4 Methodology

This is a longitudinal research design to follow the students of the Program based on four types of questionnaires: application questionnaire (oriented to those enrolled and accepted during the selection process), mid-term questionnaire (to be completed by students during the courses), exit questionnaire (to be completed at the time of dropout or disconnection for another reason); and questionnaire for alumni (to be completed by graduates periodically). The data analyzed in this article were obtained from the application questionnaire, oriented to those enrolled and accepted during the selection process of the PPGA. The questionnaire was developed based on a systematic literature review and other international questionnaires for similar purposes, as exposed in Carneiro *et al.* (2019). The pre-test was done with the selected team of researchers and students. The questionnaire, approved by the Research Ethics Committee, was developed and applied in Brazilian Portuguese.

Table 1 shows the number of master's and doctoral students who answered the questionnaire, excluding incomplete answers. These students are Program entrants from 2017 to 2022.

Table 1 – Number of respondents enrolled per admission year and corresponding percentage of the total

Year of admission		**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Application Questionnaire	Master's degree	5	5	10	10	12	5
	% responses	100%	100%	92%	62%	70%	100%
	Doctorate	5	6	6	6	8	11
	% responses	100%	88%	100%	86%	100%	100%

Source: Prepared by the authors.

The answers about expectations and motivations regarding the program were analyzed, such as continuing studying to pursue an academic career; improving professional insertion in the field of Administration in the private sector; improving professional insertion in the field of Administration in the public sector; creating a network with professionals in the field of Administration; expand knowledge about a

specific branch of Administration; migrate professionally to the field of Administration; earn better wages and job promotions; open one's own business; and get a research scholarship.

Notably, concerning the reason for choosing the program, the questionnaire was based on and reinforced positive aspects of the variables. No negative aspects were used, for example, "chose the program because no other choice was available"; "because of unemployment." Moreover, variables related to completion of a specialization course, scientific initiation, experience with entrepreneurship (understood as company partnership), and type of professional performance at the time of application to the selection process were used. Responses on sociodemographic characteristics were also analyzed: color/race, gender, age, per capita family income, and parental education level. Table 2 presents the list of variables used and their respective acronyms.

Multiple Correspondence Analysis (MCA) was used in association with Hierarchical Clustering on Principal Components (HCPC) to analyze graduate students' profiles and expectations. This association can be used in the Humanities and Social Sciences to study a group of individuals with diverse qualitative characteristics (Hjellbrekke, 2018). MCA allows one to describe and visualize categorical variables of a set of individuals I and variables K, represented as a cloud of individuals in a low-dimensional Euclidean subspace (Husson; Josse; Pagés, 2010; Di Franco, 2016). After visualization and description of the diversity of individuals, the MCA was used as preprocessing before hierarchical and partitioned grouping.

Using Ward's method of ascendant hierarchical clustering (Ward Junior, 1963; Greenacre; Blasius, 2006), a hierarchical tree was constructed on the first principal components of the MCA to preserve the main information, eliminate noise, and make robust clustering (Husson; Josse; Pagés, 2010). Then, a k-means partitioning was applied in the results of ascendant hierarchical clustering, as proposed by Husson;

Josse; Mazet (2016), by the HCPC function of the R FactoMineR package. The effect of this implementation is validated by the ratio between inertia and total inertia (Husson; Josse; Pagés, 2010; Greenacre; Blasius, 2006). Finally, the clusters are represented in the factorial map of the MCA (Di Franco, 2016; Kassambara, 2017) using the R/RStudio.

Table 2 – Variables considered in the analysis and their acronyms

Parameter	Acronym
Level: master or doctorate	Level
Previous completion of a specialization course with at least 360 hours	Specialization
Previous participation in a company partnership	PartnerInCompany
Age of admission to the program	AgeAdmis
Current work performed in public administration, companies, international bodies, non-profit entities, or natural person	CurrentWork
Expectation regarding the program: continue studying to pursue an academic career	AcadCareer
Expectation regarding the program: improve professional insertion in the area of Administration in the private sector	PrivateAdm
Expectation regarding the program: improve professional insertion in the area of Administration in the public sector	PublicAdm
Expectation regarding the program: seek professional contacts in the area of Administration	ContactsAdm
Expectation regarding the program: expand knowledge about a specific branch of Administration	AdmBranch
Expectation regarding the program: migrate professionally to the area of Administration	AdmMigrate
Expectation regarding the program: earn better salaries and job promotions	Promotions
Expectation regarding the program: open one's own business	OpenBusiness
Expectation regarding the program: get a scholarship	Scholarship
Color/Race	ColorRace
Gender identity	GenderId
Number of minimum wages per person in the household	MWPerPerson
Higher education level of parents	HighEducParents
Previous experience of scientific initiation	ScientInit

Source: Prepared by the authors.

As the number of elements in the sample is 74 students (considering the complete answers), it is not possible to extrapolate the results obtained when new students join the program starting in 2023. However, the resulting clusters characterize this sample of students from 2017 to 2022. They are valid for exploratory analysis by multiple correspondence analysis of the data of the analyzed classes over five years. In the next section, the results are presented.

5 Results

The analysis results associated with HCPC show the existence of three clusters (Figure A-2 and Figure A-3 of the Appendix). Cluster 1 corresponds to 49% of the respondents and is characterized by having mostly master's students (63.6%); most did not do scientific initiation (68.2%); held specialization degrees (68.2%); and worked in business activities (45.5%). It includes individuals who have been partners of companies (45.5%), the highest percentage among the three clusters. Regarding sociodemographic characteristics, Cluster 1 comprises mostly White people (95.5%) and men (61.4%). Concerning parental education level, the most frequent is higher education (29.5%) or graduate degree (29.5%). Age at admission to the graduate program is the highest among the three clusters, with a median of 37 years old. The comparison between Clusters 1, 2, and 3 for these variables is presented in Table 3 (motivations for choosing the program, institution, and student experience) and Table 4 (sociodemographic variables).

Cluster 2, which corresponds to 28% of the respondents, is characterized by having mostly doctoral students (52.0%); most did not do scientific initiation (68.0%), nor did they attend 360-hour specialization courses (64.0%); they were not partners of companies (96.0%); and most did not work at the time of admission to the program (56.0%). In sociodemographic terms, Cluster 2 is composed mainly of White people (64.0%), but it is the cluster with the highest percentage of Black/Mixed-race people (36.0%), mostly women (64.0%). Concerning parental education level, the most

frequent are complete high school (40.0%) or higher education (48.0%). The age at admission is the lowest among the three clusters, with a median of 28 years old.

Cluster 3 corresponds to 23% of the respondents, being the smallest of the three clusters, and is characterized by having mostly doctoral students (60.0%); most did not attend scientific initiation (75.0%) but did 360-hour specialization (55.0%); some were partners of companies (40.0%); and their most frequent work is in public administration (40.0%). In sociodemographic terms, Cluster 3 mostly comprises White people (90.0%) and men (75.0%). Concerning parental education level, the most frequent is higher education (40.0%). The age at admission to the program is intermediate, with a median of 32 years old.

Concerning the expectations regarding the program, Cluster 1 highlights the high expectation to expand knowledge about a specific branch of Administration (93% high expectation) and the lowest expectations to migrate professionally to the field of Administration (52% low expectation), open one's own company (73% low expectation), and get a research scholarship (75% low expectation).

In Cluster 2, we highlight the highest expectations to continue studying to pursue an academic career (100% high expectation), improve professional insertion in the field of Administration in the private sector (80% high expectation), improve professional insertion in the field of Administration in the public sector (64% high expectation), create a network with professionals in the field of Administration (92% high expectation), expand knowledge about a specific branch of Administration (96% high expectation), earn better wages and get promotions (88% high expectation), and get a research scholarship (76% high expectation).

In cluster 3, the absence of expectation to migrate professionally to the field of Administration (100% did not have this expectation) and to obtain a research scholarship (80% did not have this expectation) stand out.

It is possible to observe that Cluster 1 students, more characteristic of PPGA master's students, have a more professional orientation, while Cluster 2 and 3 students have a more academic orientation. This more professional orientation is revealed precisely in the search for the program after a period of professional insertion (8 years, on average). These individuals see in PPGA an opportunity to expand their training and to obtain a better insertion in the market, including associated gains. This professional orientation is also revealed by the lack of prior scientific initiation, which is more common for those with an academic perspective during undergraduate studies. Scientific initiation in Brazil is a stage of entry of the student, still undergraduate, in the research activity.

No public universities in the PPGA region offer professional master's degrees. These have been offered in private colleges or universities, where tuition is paid. Thus, it can be observed that although students search for a more professional orientation, the academic master's degree in a public university meets the objectives of those belonging to Cluster 1. Note that the professional master's degree in Brazil has also not advanced towards a differentiating role compared to the academic master's degree, as previously discussed.

On the other hand, Clusters 2 and 3 reveal a more academic interest and trajectory. Cluster 3 differs for this interest occurs later in individuals, after a period of professional experience. In other words, they are students who had finished their undergraduate studies, worked, and then started pursuing a master's or doctoral degree after this first professional experience, seeking to complement their training and, if possible, pursue an academic career. As can be seen, many individuals in Cluster 3 hold a specialization degree. The predominant employment relationship in public administration suggests a different trajectory from the other clusters.

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Table 3 – Comparison of motivation variables, students' experience, and their categories among clusters

Parameter	Category	*Cluster 1*	*Cluster 2*	*Cluster 3*
Level	Master's degree	63.3%	48.0%	40.0%
	Doctorate	36.0%	52.0%	60.0%
Academic Career – expectation	High/Very High	84.1%	100.0%	95.0%
	Very Low/Low	15.9%	0.0%	0.0%
	I did not have that expectation			5.0%
Private Administration – expectation	High/Very High	68.2%	80.0%	45.0%
	Very Low/Low	29.5%	20.0%	20.0%
	I did not have that expectation	2.3%		35.0%
Public Administration – expectation	High/Very High	40.9%	64.0%	35.0%
	Very Low/Low	52.3%	12.0%	20.0%
	I did not have that expectation	6.8%	24.0%	45.0%
Administration Networking– expectation	High/Very High	52.3%	92.0%	55.0%
	Very Low/Low	45.5%	4.0%	30.0%
	I did not have that expectation	2.3%	4.0%	15.0%
Administration Branch – expectation	High/Very High	93.2%	96.0%	80.0%
	Very Low/Low	6.8%	4.0%	15.0%
	I did not have that expectation			5.0%
Migrate to Administration – expectation	High/Very High	34.1%	40.0%	
	Very Low/Low	52.3%	16.0%	
	I did not have that expectation	13.6%	44.0%	100.0%
Promotions – expectation	High/Very High	54.5%	88.0%	70.0%
	Very Low/Low	40.9%	8.0%	30.0%
	I did not have that expectation	4.5%	4.0%	
Open business – expectation	High/Very High	20.5%	36.0%	5.0%
	Very Low/Low	72.7%	28.0%	5.0%
	I did not have that expectation	6.8%	36.0%	90.0%
Research Scholarship – expectation	High/Very High	18.2%	76.0%	
	Very Low/Low	75.0%	16.0%	20.0%
	I did not have that expectation	6.8%	8.0%	80.0%
Specialization	Did not attend	31.8%	64.0%	45.0%
	Attended	68.2%	36.0%	55.0%
Scientific Initiation	Attended	31.8%	32.0%	25.0%
	Did not attend	68.2%	68.0%	75.0%
Company Partnership	Was never a partner	54.5%	96.0%	60.0%
	Has already been a partner	45.5%	4.0%	40.0%
Current Work	Public Administration	18.2%	8.0%	40.0%
	Does not work	20.5%	56.0%	25.0%
	Business Activities	45.5%	28.0%	15.0%
	Non-profit organizations	15.9%	8.0%	20.0%

Source: Prepared by the authors.

Table 4 - Comparison of sociodemographic characteristics of the clusters

Parameter	Category	*Cluster 1*	*Cluster 2*	*Cluster 3*
Color/Race	White	95.5%	64.0%	90.0%
	Did not report color/race	0.0%	0.0%	10,0%
	Black/Mixed-race	4.5%	36.0%	0.0%
Gender identity	Man	61.4%	36.0%	75.0%
	Woman	38.6%	64.0%	25.0%
Per capita income (minimum wage)	Mean	4.7	3.9	5.7
	Median	4.5	3.0	4.5
Age at admission	Mean	36	29	35
	Median	37	28	32
Higher education level of parents	Graduate studies	29.5%	8.0%	25.0%
	Higher education	29.5%	48.0%	40.0%
	High school	20.0%	40.0%	35.0%
	Middle school	20.5%	0.0%	0.0%
	Other	0.0%	4.0%	0.0%

Source: Prepared by the authors.

Finally, Cluster 2 represents a minority group of individuals who sought a more linear path between undergraduate, master's and, in some cases, doctoral degrees. A substantial part of the cluster did not attend a specialization course, were never partners in companies, and were not working at the time of application to PPGA. Therefore, they are naturally younger students than those in the other two clusters and have a lower per capita income. The distinct sociodemographic profile of Cluster 2 is noteworthy because it has 36% of individuals who declare themselves Black and Mixed-race (in contrast to 95.5% of self-declared White individuals in Cluster 1 and 90% in Cluster 3) and 64% of women.

The qualitative variables considered in the analysis are in Figure A-1 of the Appendix, which presents the relative contribution of each of them to the composition of the clusters.

5 Final remarks

This article analyzed the profiles and motivations of students in a graduate program with master's and doctoral degrees, bringing conceptual, methodological, and empirical contributions. From the conceptual perspective, the text reviews studies that focused on the motivations of graduate students, with emphasis on the business area. Methodologically, the contributions relate to the longitudinal follow-up of incoming students, which is rare. These procedures allow for a better analysis of students over time, which is particularly relevant for a program that completed its first evaluation cycle in 2020 and still has the challenge of consolidating its profile and vocation. Nevertheless, it is also a relevant contribution to already consolidated programs, whether in Administration or other fields.

Finally, the findings of this article allow us to discuss the motivations and the expected effects of graduate school, bringing inputs to program management. As previously discussed, the results of the analysis show the existence of three clusters: Cluster 1, with a more professional orientation, lower gender and race diversity, and older individuals at admission to the graduate program; Cluster 2, composed of individuals with a more linear and continuous academic trajectory between undergraduate, master's, and doctoral degrees, higher gender and race diversity, and younger individuals at admission to the program; and finally, Cluster 3, with a more academic orientation, although late, given the students' previous professional experience, and with lower gender and race diversity.

It is not possible to know whether the existence of these diverse profiles is the result of a relatively recent history of PPGA, whether it is characteristic of a graduate program in a highly applied area — which attracts individuals seeking further professional and academic training — or even a mix between these perspectives. However, regarding implications for the management and operation of PPGA, these

are questions that can help rethink the program's selection process, as well as its pedagogical practices and curricula.

If PPGA aims, in the medium term, to accommodate diverse profiles, it will be necessary to consider the use of the ANPAD test as an eliminatory and classificatory factor of the selection process. The test tends to favor those with more formal administration knowledge, either by temporal and/or thematic proximity to the undergraduate and/or master's degree area. Moreover, it is important to consider findings that using tests of this nature does not predict students' performance during graduate programs (Posselt; Grodsky, 2017). One must also weigh the elements considered in the curricular analysis since scientific initiation and previous publications may favor a more academic profile, while work experiences favor a professional one.

Another relevant aspect of the selection process concerns diversity. Poor gender and race diversities in the program, observed in Clusters 1 and 3, may be related to biases in the selection process or the profile of individuals seeking the program. This result is consistent with Rosemberg (2013), who confirms the existence of inequality of access, permanence, and success in the education of people with profiles of lower access to economic resources, low parental education level, those from rural areas, Black and Indigenous people, or people coming from the North, Northeast, and Central-West Brazil. In this sense, as a research agenda, it is worth comparing the profiles of the candidates who were not chosen with those of the registered ones outlined here.

Still, on this topic, it is worth mentioning that it is not only important to expand gender equality efforts in the selection and admission of candidates but also to ensure that educational institutions allow the experiences and treatment given to women to be similar to that given to men.

In addition to affecting the selection process, the discussion about the PPGA's identity also refutes its curricular structure and pedagogical practices. Although the expectation of academic career follow-up is evident in all three clusters, there is also

significant motivation of students to work in private and public administration, to create professional networks in the field of Administration, and to expand their knowledge about a specific branch of Administration.

In this sense, considering the research results and the literature review, the program has some future possibilities. A possible transition from the current PPGA academic master's degree to a professional master's degree may be on the agenda. Given the profiles and motivations of an important part of the master's students who combine academic and professional interests and who choose to reconcile graduate studies with a full-time or part-time job, the professional master's degree could be a more attractive choice. However, this depends on the very consolidation of this model as a differentiated option compared to the traditional academic master's degree so that the master's degree can mean a final stage of training and not just an intermediate stage before reaching doctorate status (Cirani, Campanario; Silva, 2015; Giuliani, 2010; Festinalli, 2005; Balbachevsky, 2005).

Alternatively, the program could remain academic, combining excellence in academic and research training with more explicit professional guidance, as suggested by Mattos (2020), Moreira and Velho (2012), and Giuliani (2010). This alternative bears implications for the curriculum and also for the final product. For example, it is important to merge more theoretical content with more practical content in the disciplines, as well as to stimulate more academic work (such as article production), more cross-sectional work (less content and more problem-solving activities), and more applied to the practices of public and private administration, emphasizing the professional character. In this same rationale, skipping the master's degree, i.e., the direct doctorate option, may prove relevant for those interested in an academic career.

In this context, the research agenda this study suggests is to expand similar studies, considering other courses and institutions. This is because the collection and monitoring of student data, from the moment of choosing the course and throughout

its trajectory, brings important inputs for the attraction, recruitment, and retention of students, ensuring their satisfaction and thus contributing, to some extent, to the completion of the master's and doctorate, in addition to the success of the program (Posselt; Grodsky, 2017).

Complementarily, this type of effort allows for a broader understanding of the different factors that influence the application, selection, enrollment, and completion of graduate education, which include age, previous education, socioeconomic profile, gender, and race, among other aspects (Posselt; Grodsky, 2017). As stated by Guerin *et al.* (2015), all these elements can help graduate programs consolidate or even reformulate their identity over time in a process of coevolution involving students' profiles and motivations, the labor market, and educational institutions themselves.

Regarding research limitations, it is important to reinforce the impossibility of generalizing the results found so far to future PPGA classes. A retrospective study by Hortale *et al.* (2014) showed, for instance, differences in the motivation to pursue Fiocruz's graduate programs among the different cohorts of graduates from 1984 to 2007 due to the specialization of the research lines that the program was acquiring. Another limitation is the option to construct a questionnaire highlighting positive aspects of the students' choice.

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Contribuição dos(as) autores(as)

Ana Maria Carneiro: Conceptualization, Investigation, Methodology, Supervision, Writing – original draft, Writing – review & editing

Adriana Bin: Conceptualization, Investigation, Methodology, Writing – original draft, Writing – review & editing

Luciane Ferrero: Investigation, Formal Analysis, Methodology, Visualization, Writing – original draft

Cristiano Morini: Investigation, Writing – review & editing.

Translation to English

Sabrina Leitzke – Tikinet

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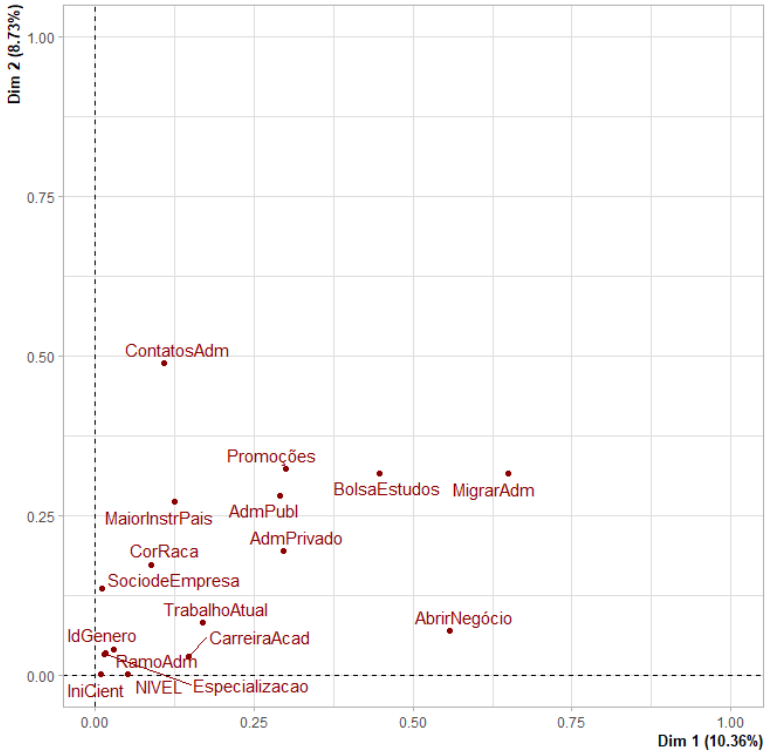
APPENDIX A - MULTIPLE CORRESPONDENCE ANALYSIS – MCA

Multiple Correspondence Analysis (MCA) detects and represents underlying structures in the dataset with qualitative and quantitative variables. From this correspondence, the data are represented as points in a low-dimensional Euclidean space, usually two or three, which result from the composition of the variables under analysis.

Figure A-1 shows the projection of the cloud of qualitative variables used in clustering. The dotted lines correspond to the lines x=0 and y=0. In both dimensions, the variables closest to 1 represent those that had a greater contribution to the separation of students between the three clusters.

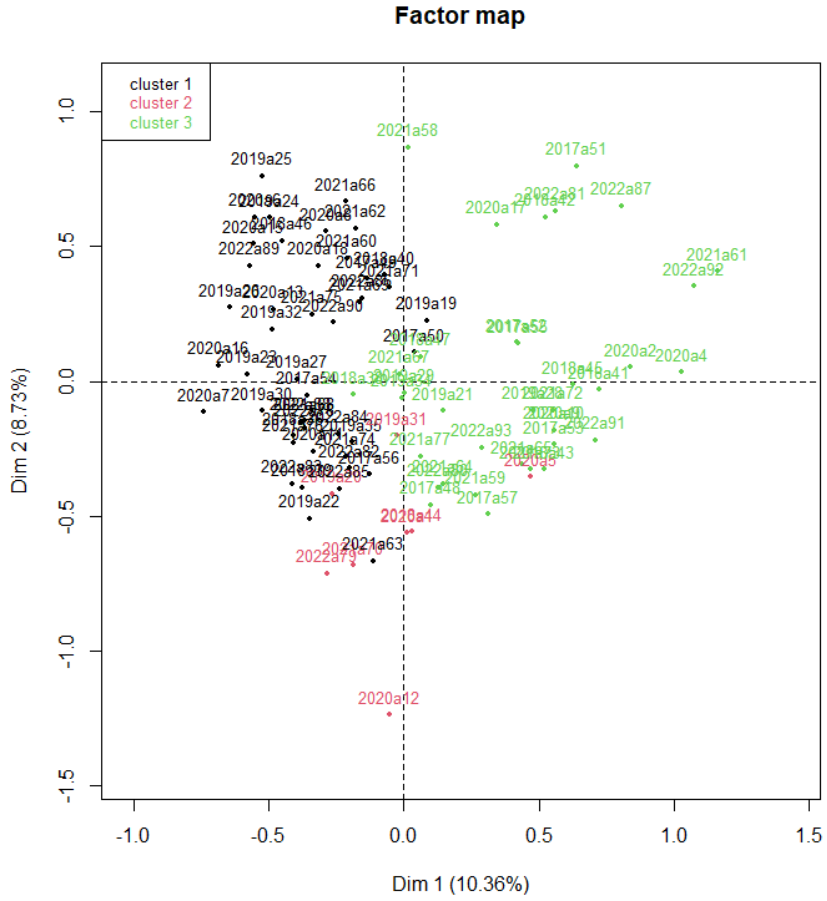
Figure A-1 – Graph of the qualitative variables considered in the analysis and their relative contribution to clustering



Source: Prepared by the authors using R/RStudio.

Figure A-2 shows the two-dimensional projection of the cloud of the students analyzed in the clustering. The added percentages of the dimensions on the x and y axes represent cloud variability, which can be represented in the two-dimensional projection. Clusters are identified by colors (black, red, and green).

Figure A - 2 – Factor map with students' presentation in clusters



Source: Prepared by the authors using R/RStudio software.

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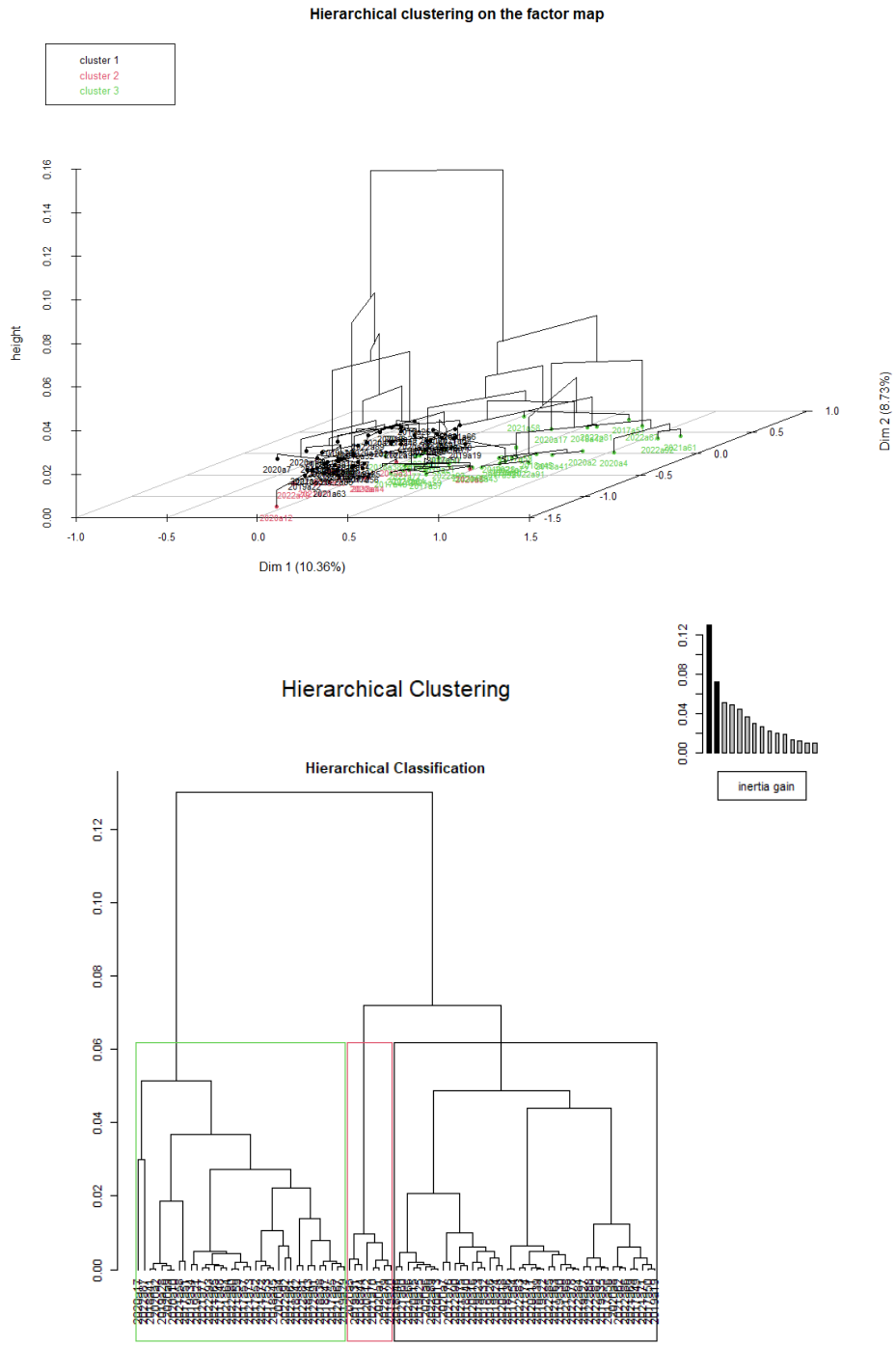
Figure A-3 shows the dendrogram of the hierarchical clustering in 3D, along with a new view of Figure A-2, with the projection of the students analyzed in the Euclidean plane, categorized in the three clusters.

Figure A-3 – Dendrogram of hierarchical clustering in 3D



Source: Prepared by the authors using R/RStudio software.