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Editor's Word

Dear reader, we are delivering the fourth issue of 2021. First, I would like to congratulate the authors of the papers published in this issue and thank all those who submitted their papers but unfortunately did not get approved.

The invited editorial is by Professor Gary Hecht. He is a Full Professor at the Department of Accounting, University of Illinois at Urbana Champaign (UIUC). Gary was the director of the online Master's program in Accounting and is both a distinguished expert in Managerial Accounting and an outstanding researcher. He brings to us Brazilians, together with Abracicon, on behalf of its president Maria Clara Bugarim, high-quality online courses, which will be available to students, accountants, and accounting professionals with Portuguese subtitles. The first course to be delivered will be Accounting Data Analytics. He describes how the course was envisioned and developed at UIUC, and I expect it will be highly appreciated in Brazil. Congratulations to Abracicon and the University of Illinois for the partnership and for granting us this opportunity for growth.

Now, focusing on the papers approved through blind review, the first paper, in the field of Education, was written by Cristiane Krüger, Graziele Medianeira Cavalheiro, Vinícius Costa da Silva Zonatto, and Fabíola Kaczam, and is intended to analyze the relationship between entrepreneurial intention and motivation to learn among students attending the Accountancy program at the Federal University of Santa Maria. The results revealed that the students' motivation to learn, behavioral perception, and entrepreneurial intention are moderate, while personal attitude and subjective norm present a high ratio. Furthermore, there was no significant correlation between the constructs "motivation to learn" and "entrepreneurial intention".

The second paper, written by Eduardo Mendes Nascimento, Edgard Bruno Cornacchione Jr., and Marcia Carvalho Garcia, also in the Education field, is intended to identify and analyze the influence of levels of demand, control, and support on the self-reported stress of faculty members teaching in the Accountancy programs of Brazilian Higher Education Institutions (HEI). The results show that support and control significantly decrease the professors' perceived stress. The demands the HEI impose contribute to compound stress though. The results also show that age, positive mental health perception, job satisfaction, and satisfaction with students negatively modulate professors' stress. Being a woman, teaching in the morning shift, and being hired by a public HEI, on the other hand, increase the respondents' perceived stress.

The third paper, again in the field of Education, is intended to verify differences between students from the Y and Z generations attending graduate Accounting programs regarding work values considering socio-demographic characteristics. The results reveal that the female students assigned greater importance to job stability and financial independence than male students. Likewise, significant differences were found between the groups that composed the variables "financial responsibility at home", "teaching experience", "mother's educational level", and "financial support during the graduate program". This paper was written by Rayane Camila da Silva Sousa and Romualdo Douglas Colauto.

The fourth paper, written by Monize Ramos do Nascimento, Raissa Aglé Moura de Sousa, José Alves Dantas, João Tupinambá Gomes Neto, and Wellington Alves de Oliveira is from the field of Financial Accounting. Its objective is to investigate evidence of earnings management through the disclosure of adjusted profit (net profit minus extraordinary items) by Brazilian banks, considering that managers can exercise discretion when disclosing earnings to improve their remuneration or influence investors. Empirical tests revealed a positive association between extraordinary items and net profit, without the effects of adjustment of extraordinary items, confirming the hypothesis that these entities use adjusted profit disclosure as a mechanism for managing investor expectations, smoothing the recurring portion of profits.

The fifth paper, written by Alison Martins Meurer and Flaviano Cost, is a paper in the Education field and focuses on behavior. Its objective was to identify the factors that characterize the Impostor Phenomenon among graduate students attending business programs. The indicators show two dimensions: one factor characterizing falsehood and underestimation feelings, and the other related to luck or chance. The results also indicate that impostor feelings in the business field are more frequently related to falsehood and underestimation than to attributing success to luck or chance.

The last paper, written by Moara Hirt, Edvalda Araujo Leal, Taís Duarte Silva, and Isolfi Vieira Rocha Neto, intends to identify the learning strategies adopted by college students entering an Accounting Sciences program and their perceptions regarding their use. Learning strategies are classified into cognitive, metacognitive, or lack of strategies. Metacognitive learning strategies were the most frequently adopted, indicating that students know that studying is associated with good performance, and distractions may impact their learning. Additionally, professors play a role in academic performance, as students believe that professors are more experienced and can support their learning process.

Finally, I always like to inform you that REPeC is a publication not only linked to education, but to several fields, as shown in its objectives: Financial, Management, Public, Auditing, and Taxes, among others.

Without further ado, I thank all the researchers who submitted their papers to REPeC, in addition to the referees, always very collaborative. Congratulations to those who had their papers approved, as the demand is considerably high and the road to the final publication is very challenging.

I would also like to finish this message by wishing all researchers, readers, reviewers, and their families a peaceful end of the year and a happy, prosperous, and healthy New Year!

Academic Greetings.

Gerlando Lima, Ph.D.

Editor in Chief

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Accounting Analytics – Leveraging New Opportunities

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Analytics is a word I had always heard, but it was in 2013 after I joined the faculty at University of Illinois at Urbana-Champaign when it really came to light for me. The department chair at the time, Jon Davis, assigned me to a course that needed revision. The course focused on risk identification, measurement, and management. He suggested that I incorporate more analytics in the course. So, I got to work, focusing on business decision-making under uncertainty and ambiguity, and the various tools used to create and analyze information to facilitate that decision-making.

After a couple of years of further enhancements of that course, Jon suggested that we needed to develop a "specialization" – a group of elective courses that students complete as part of their accounting graduate degree. All of a sudden, we needed three new courses. I dove into readings, attended multiple conferences, and developed a plan and documentation to secure approval for the new specialization. All the while, I was a bit skeptical. Wasn't this analytics stuff just accounting? Just with bigger data sets and more technology? This idea was validated, as one of the conferences I attended was the American Accounting Association's "Accounting *Is* Analytics" series. Much of the rest of the time, I thought that we should just teach students basic research fundamentals: to be inquisitive, to ask the right questions, and the use of statistical analyses.

I still hold those perspectives; however, I also know they are incomplete. And this first became clear to me after we looked across campus to collaborate with others in developing the new specialization. The Department eventually hired a new faculty member – Robert Brunner, an astrophysics data scientist – to develop two of the three courses in the new specialization. One course focused on technology and Python programming. The other course focused on machine learning and statistics. The third course – my course – followed those first two: data analytics applications in accounting.

As I planned and developed the course, my intention was to deliver the course I always wanted to take as a student myself. A "working" course, filled with experiential learning opportunities and representative of what real-world accountants did in practice (and would be doing in the future as responsibilities, technology, and data expanded). There was very little lecture – perhaps one in every four or five class meetings. The rest of the time was reserved for team-based projects involving uncertainty and ambiguity, data, and analysis of that data to facilitate a variety of business decisions. Thus, not only were the students learning and applying analytics-oriented tools and building skills to engage in data-driven decision-making, but also developing an "analytical mindset" that could be applied no matter how complex the business problem.

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Since then, the accounting curricula has expanded in terms of breadth and depth in our graduate accounting program and our MBA program. Other faculty have continued to develop the curriculum and have been recently recognized with an award from the American Accounting Association.[1] Online versions of coursework have been developed and offered as well.

While I was Academic Director of the online, iMSA Program, and more recently as Executive Director of Lifelong Learning, I know how challenging it can be for working professionals – especially those who have not been in school for a while – to "up-skill" in the area of analytics. Thus, we developed and are happy to offer a series of introductory courses.

Each course offers ultimate flexibility. The course is available continuously, completely online, and can be completed at the learner's own pace. There are some readings, but most content is in video form, led by Professor Ron Guymon. And the videos are extremely high quality! It includes interesting settings and examples, interviews with professionals, and technical demonstrations.

The first course focuses on how analytics is used in the various sub-disciplines in accounting (i.e., financial accounting, auditing, tax, managerial accounting, etc.). You will also learn about an "analytics mindset" and a framework useful for applying this mindset to address business problems. The other two courses delve further into the tools. In one course, you will learn to develop, use, and present data visualizations, and how such visualizations can be used to engage in one of the most important roles accountants play: communicating information. The third course explores the use of Excel to build models, conduct statistical analyses on large and varied datasets, and leverage Excel's programming language to "automate" such analyses.

As this course launches and is completed by learners, we will offer future coursework, including those that focus on other programming languages (i.e., Python, R, etc.), machine learning, and other innovative and disruptive tools. The current course and these future courses will expand your perspective and skills, ensuring you not only "keep up" with today's technology but are ready to leverage tomorrow's tools for future success!

1 Vic Anand, Josh Herbold, Jessen Hobson, and Kim Mendoza received the Ernst & Young Foundation-sponsored 2021 Innovation in Accounting Education Award from the American Accounting Association.

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Entrepreneurial Intention and Motivation to Learn Among Accountancy Students

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Abstract

Objective: To analyze the relationship between entrepreneurial intention and motivation to learn among Accountancy students at the Federal University of Santa Maria, Brazil.

Method: Grounded on the Theory of Planned Behavior, considering the theoretical framework addressing entrepreneurial intention proposed by Liñán and Chen (2009) and motivation to learn by Tho (2017). Therefore, this is a quantitative, descriptive survey. Data were obtained using the Entrepreneurial Intention Questionnaire (Liñán & Chen, 2009) and the Motivation to Learn Questionnaire (Tho, 2017). A total of 219 students were addressed. Data were tabulated and statistically analyzed.

Results: The results showed that the students' motivation to learn, behavioral perception, and entrepreneurial intention were moderate, while high ratios were found for personal attitude and subjective norm. Additionally, no significant correlation was found between the constructs of motivation to learn and entrepreneurial intention. In-depth analyses were performed using regression models, which revealed that entrepreneurial intention influences motivation to learn.

Contributions: This study contributes to a greater understanding of the behavioral aspects of Accountancy students, enabling and encouraging the development of behaviors driven to learn and perform entrepreneurial activities.

Keywords: Entrepreneurial behavior; teaching-learning in Accountancy; Behavioral Accounting.

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1. Introduction

Entrepreneurship is a mechanism that promotes innovation, behavioral development, and, consequently, economic development (Liñán, Rodríguez-Cohard & Rueda-Cantuche, 2011; Minello, Bürger & Krüger, 2017). In this aspect, Omri (2020) points out some contributions of entrepreneurial initiatives such as GDP growth, higher employment and income levels, and the general improvement of society's quality of life.

Liñán and Fernandes-Serrano (2014) refer to entrepreneurs as individuals with an innovative perspective who experiment with new techniques, introduce new products, and create new markets. These individuals differ from others due to their entrepreneurial behavior. Schaefer (2018) describes this behavior according to some individuals' particular characteristics when facing opportunities, which include perceiving, thinking, and acting in an entrepreneurial way. Ajzen (1991) argues that intention predicts such behavior.

In this sense, entrepreneurial intention indicates an individual's effort to engage in entrepreneurial behavior; the more committed an individual to a given behavior, the more likely this behavior will be accomplished (Liñán & Chen, 2009). According to the previous authors, various factors may affect entrepreneurial intentions, such as needs, values, desires, and beliefs.

In the educational context, teaching entrepreneurship is one of the main instruments to improve entrepreneurial intentions of potential and nascent entrepreneurs (Liñán, Rodríguez-Cohard & Rueda-Cantuche, 2011; Krüger, Bürger & Minello, 2019). Students exposed to an entrepreneurial education develop a stronger intention toward entrepreneurship and report more positive attitudes than their counterparts (Gieure, Benavides-Espinosa & Roig-Dobón, 2020).

Silva, Krüger, Minello, and Ghilardi (2019) state that Accountancy students present a strong entrepreneurial intention when they enter the program. This intention decreases significantly by the end of the program though. Therefore, considering this gap, the construct motivation to learn is included in this study because it may be related to this decrease; motivation can be crucial to succeed in the teaching-learning process (Gopalan, Bakar, Zulkifli, Alwi, & Mat, 2017).

Students highly motivated to learn tend to be more efficient in acquiring knowledge (Tho, 2017). Additionally, motivation to learn influences decision-making processes toward direction and focus (Cole, Harris & Feild, 2004), possibly necessary for behavioral aspects. Therefore, we ask: what is the relationship between entrepreneurial intention and motivation to learn among students attending an Accounting Sciences undergraduate program?

In response to this question, the primary objective was to analyze the relationship between entrepreneurial intention and motivation to learn among Accounting Sciences students enrolled in the Federal University of Santa Maria (UFSM). Complementarily, we sought to identify the profile of Accountancy students at UFSM; the motivation to learn of Accountancy students using the instrument proposed by Tho (2017); measure these students' motivation to learn using the instrument proposed by Tho (2017); measure the entrepreneurial intension of students using the instrument proposed by Liñán and Chen (2009); associate the constructs and the variables of motivation to learn and entrepreneurial intention of Accountancy students, and determine the influence of entrepreneurial intention on motivation to learn.

The relevance of this study lies in the need to understand the motivation to learn among Accountancy students and its relationship with entrepreneurial intention. According to Malacarne, Brustein, and Brito (2019), the educational system does not encourage entrepreneurship behavior among students, prioritizing training that prepares professionals to be employees. The authors consider it is challenging to promote entrepreneurship in higher education institutions.

Considering that education promoting entrepreneurship positively influences entrepreneurial intention. Hence, this study is motivated by the need to clarify what elements are the most influential in determining an individual's decision to initiate an enterprise, enabling the design of more effective educational strategies (Liñán, Rodríguez-Cohard & Rueda-Cantuche, 2011). Therefore, the focus is on Accountancy students because of the need to monitor the development of accounting enterprises, considering the training of these workers to identify opportunities and innovate (Silva et al., 2019).

This study's contributions can benefit students, professors, and society. Students may conceive and develop pro entrepreneurial behavior based on evidence and clarify their perspectives toward the job market. In turn, professors can understand the motivation to learn, which affects the acquisition of knowledge, favoring the development of teaching methodologies and focusing on the development of entrepreneurial behaviors.

2. Theoretical Framework

The theoretical framework includes basic themes for further analysis: entrepreneurial behavior and entrepreneurial intention, the teaching of Accountancy and entrepreneurial education, motivation to learn, and similar studies, presented in detail below.

2.1 Entrepreneurial Behavior and Entrepreneurial Intention

In general, behavior can be considered the way individuals act in the face of stimuli and the surroundings. Specifically, entrepreneurial behavior can be described according to particular characteristics some people present when facing opportunities, which are evident in the entrepreneurial manner they perceive, think, and act (Schaefer, 2018).

Entrepreneurial behavior can be learned (Krüger et al., 2019). In this sense, Krüger (2019) notes that one of the ways to develop entrepreneurial behavior is by providing education driven by entrepreneurship. To learn to be an entrepreneur, individuals need to be proactive, which is better predicted by entrepreneurial intention (Liñán, Rodríguez-Cohard & Rueda-Cantuche, 2011).

Entrepreneurial intention comprises the effort and willingness of individuals toward an entrepreneurial behavior in favorable conditions (Cantner, Goethner & Silbereisen, 2017; Souza, Santos, Lima, Cruz, & Lezana, 2016). Intentions are influenced by various factors, though they are voluntary and conscious (Hecke, 2011). Understanding intentions is particularly valuable when the focal phenomenon is rare, obscure, or involves unpredictable delays – as is the case of entrepreneurship (Krueger, Reilly & Carsrud, 2000). Therefore, the entrepreneurial intention has been supported by investigating cognitive factors that can motivate individuals to undertake an enterprise (Fayolle & Liñán, 2014; Krueger, 2017; Paiva, Andrade, Antonialli, & Brito, 2018).

Among the different theories addressing intention, the Theory of Planned Behavior (TPB) stands out (Santos, Moura & Almeida, 2018). The TBP identifies three attitudinal antecedents of intention that influence behavior (Ajzen, 1991). Considering that TBP intends to predict and explain human behavior in specific environments, it is possible to apply this theory's foundations to predict and explain entrepreneurial behavior, considering the intention to start an enterprise (Liñán & Chen, 2009). Hence, based on the TPB, Liñán, and Chen (2009) developed a model of entrepreneurial intention. Figure 1 presents this model.

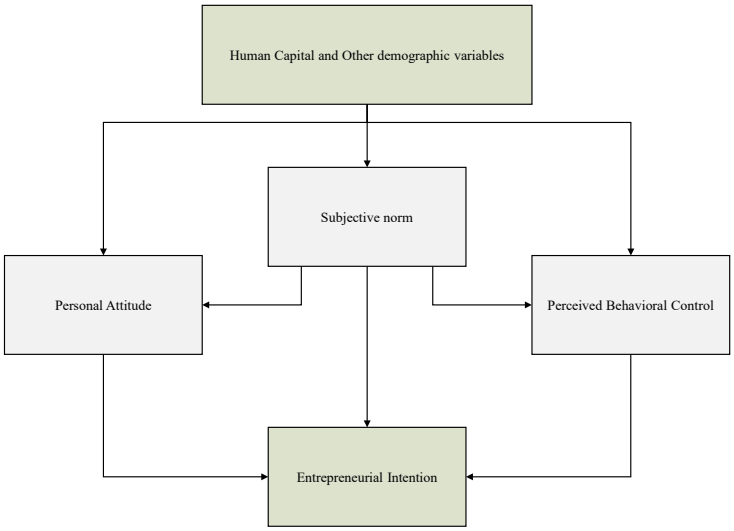

Figure 1. Model of entrepreneurial intention

Source: Adapted by Liñán and Chen (2009, p. 597).

Figure 1 shows that the first variable refers to one's attitude toward behavior; that is, it enables determining the favorable moment for a given behavior. The second variable is the subjective norm, that is, an individual's perception of the surrounding community determining one's behavior.

Next, the third variable reflects one's perception of individual control, leading individuals to adopt a given behavior. Therefore, three independent variables determine an entrepreneurial intention (EI) to adopt a behavior: personal attitude (PA), subjective norm (SN), and perceived behavioral control (PBC), in which the relationship between these three elements and intention grows proportionally, and in turn, predicts behavior (Ajzein, 1991).

Various studies have addressed entrepreneurial intention (Hecke, 2011; Liñán & Chen, 2009; Loiola, Gondimi, Pereira, & Ferreira, 2016; Mirjana, Ana & Marjana, 2018; Vieira & Rodrigues, 2014), among which Silva et al. (2019) stands out. The authors concluded that, in general, Accountancy students have a low intention to undertake an enterprise. Note that working students enrolled in the evening shift, who had already attended courses and training addressing entrepreneurship, more frequently intended to undertake an enterprise than their counterparts.

Therefore, a brief literature review concerning the teaching of Accountancy and entrepreneurial education is presented.

2.2 Accountancy Teaching and Entrepreneurial Education

Accounting education is an activity that teaches paths, methods, and techniques (Özpeynirc, Yücenurşen, Apakc, & Polatc, 2015). In addition to enabling individuals to acquire these skills throughout their professional lives, accounting education has in its essence the concept of continuous learning, through which individuals can be sufficient to meet expectations, following current development and updating knowledge (Özpeynirci et al., 2015).

The techniques educators use to teach accounting content in undergraduate programs vary, including group tasks, seminars, and activities to develop communication skills (Souza, Avelar, Boina, & Rodrigues, 2009). Marion (1996) notes that accounting teaching primarily highlights some technical aspects of the profession, such as bookkeeping, which lead students to believe that the profession is restricted to routine operations, full of details, blurring the importance of accounting in using the information contained in accounting reports to support decision-making processes. In this sense, Beck and Rausch (2015) underline that the accounting field demands better and more in-depth analyses and discussions to understand contexts, entailing the need to teach competent and active professionals.

Therefore, there is a need to develop the teaching of Accountancy directed to entrepreneurship. According to Iwu et al. (2019), entrepreneurial education teaches students to begin and run a business, promotes creative thinking, innovation, a sense of self-esteem and discipline, and seeks to prepare students to be entrepreneurs and contribute to the sustainable development of the economy.

These authors note that education for entrepreneurship enables the acquisition of entrepreneurial knowledge, attitudes, skills, and behavior (Iwu et al., 2019). From this same perspective, Jena (2020) states that education for entrepreneurship promotes the students' subjective norms and entrepreneurial intentions, improving their skills and knowledge. Therefore, education for entrepreneurship in the accounting field is an efficient method to prepare students to transition from college to the job market (Reyad, Al-Sartawi, Badawi, & Hamdan, 2019). These authors consider that the emphasis is not only on acquiring knowledge but also on developing skills and competencies.

Based on the relevance of promoting entrepreneurial behavior in the professional training of accountants and considering the gap in the study by Silva et al. (2019), this study focused on the entrepreneurial intention of Accountancy students and its relationship with motivation to learn. The topic motivation is detailed below.

2.2.1 Motivation to learn

Regarding the learning outcome, studies show that the students' ability to identify, assimilate, and apply knowledge and motivation to learn is essential (Tho, 2017). Motivation in the context of learning is conceived as an internal source that improves, maintains, or mediates cognitive development (Barak, Watted, & Haick, 2016).

The motivation and learning process are deeply connected, in which motivation is the core of a human being's aspirations and achievements. Hence, motivation is crucial for academic success, and without a fighting spirit, nothing is possible, nor within the educational milieu or real-life (Gopalan et al., 2017). Motivation to learn influences decision-making processes concerning direction, focus, and effort applied to a learning activity (Cole, Harris & Feild, 2004).

In this sense, Nguyen and Nguyen (2010) note that motivation to learn improves the students' knowledge and skills because students highly motivated to learn have more efficient strategies and are more committed to accumulating knowledge and skills.

Several theories address motivation to learn. Cognitive theories concerning motivation to learn highlight the study of beliefs, values, and emotions because these are thought to mediate behavior and strongly influence the motivational process (Lourenço, & Paiva, 2010). Therefore, the TPB by Ajzen (1991) and the entrepreneurial intention proposed by Liñán and Chen (2009) are included. Thus, according to the theoretical framework addressed here, this study's objective is to test the following hypothesis:

H_1: There is a significant positive relationship between entrepreneurial intention and motivation to learn among the Accountancy students at UFSM.

2.2 Similar Studies

This section presents studies that are similar to this one. The objective is to facilitate understanding of the constructs and support further analyzes and discussions.

Hecke (2011) validated the model proposed by Liñán and Chen (2009) in the Brazilian context. The author applies the model to Business administration and Accountancy students in Curitiba. The study's objective was to verify whether entrepreneurial intentions differed between the students. Regarding the results, the author noted a need to include more courses to promote the students' entrepreneurial intention.

Loiola et al. (2016) analyzed the effect of variables concerning the perception of context in the college and family environments and the effect of motivational and attitudinal variables on the entrepreneurial intentions of college students. Approximately 3,000 students participated in the study. As for the results, the authors clarified that motivation to learn is the variable that influenced entrepreneurial intention the most, followed by entrepreneurial learning, and at a lower degree, risk perception (Loiola et al., 2016).

Mirjana, Ana, and Marjana (2018) verified the determinants of entrepreneurial intentions according to the TPB among undergraduate students in Slovenia. The study's objective was to explore the effect of personal attitudes toward entrepreneurship, subjective norm, and perceived behavioral control as the three antecedents of entrepreneurial intention recognized by TPB. The results revealed that an individual's entrepreneurial intentions are positively related to personal attitudes toward entrepreneurship; the subjective norm imposed by the external environment, and perceived behavioral control. Therefore, the authors consider that motivational antecedents can be good predictors of entrepreneurial intention.

Silva et al. (2019) analyzed the entrepreneurial intentions of undergraduate Accountancy students from a Brazilian Federal University and concluded that, in general, the students presented low intention to undertake an enterprise. Working students enrolled in the evening shift who had already taken courses addressing entrepreneurship showed stronger intentions towards entrepreneurism than their counterparts though.

Recently, Krüger, Borré, Lopes, and Michelin (2021) analyzed the relationship between the constructs: planned behavior and transformational and transactional leadership among undergraduate Accountancy students. No significant correlation was found between entrepreneurial intention and the types of leadership mentioned above.

Based on the gap of the study by Silva et al. (2019), this study focused on Accountancy students and their relationship with motivation to learn. After presenting the theoretical framework, this study's methodology is explained in detail.

3. Method

To accomplish the objective established for this study, a quantitative approach was adopted to address the problem; a descriptive approach to address the objectives, and a survey to address the theoretical procedures. A questionnaire composed of five blocks of statements was used to collect data. The blocks concerned Motivation to Learn (ML), Personal Attitudes (PA), Subjective Norm (SN), Perceived Behavioral Control (PBC), and Entrepreneurial Intention (EI).

The construct proposed by Tho (2017), composed of five statements, was used to measure ML; the Questionnaire of Entrepreneurial Intention (QEI), previously validated in Brazil (Hecke, 2011), was used to measure EI (Liñán & Chen, 2009). The QEI was developed to measure intentions and the remaining variables that influence it based on theoretical and empirical literature applying TPB to entrepreneurship (Liñán & Chen, 2009).

The QEI comprises four blocks with 22 statements distributed into PA, SN, PBC, and EI. The first three blocks focused on the students' behavioral attitudes and their perceptions regarding personal attitudes. The fourth block concerned entrepreneurial intention; that is, it is intended to capture the students' perceptions regarding entrepreneurial intention. The students answered the instrument according to a seven-point Likert scale for ML, ranging from 1 (strongly disagree) up 7 (strongly agree) and five points for QEI (1=never, 2=rarely, 3=sometimes, 4=often, and 5=always).

Additionally, the students initially answered seven questions related to support complementary data concerning enrollment, term, sex, age, whether the student had a paid job, whether the student had already attended a course addressing entrepreneurship, and whether the students or anyone in their families had performed an entrepreneurial activity. After the instrument had been organized and printed, the class schedules and respective classes were identified to ensure that students would answer the questionnaire only once.

Data were collected in August 2019 on the UFSM campus in Santa Maria. The questionnaires were applied in the classrooms after the professors teaching classes had provided their consent. The students were informed about the study's objective and asked to complete the questionnaire voluntarily and anonymously. The students had some time to complete the instrument, and the questionnaires were collected and later tabulated for analysis. In total, 221 questionnaires were collected.

Two of the questionnaires were removed from the sample because they were incomplete so that 219 questionnaires remained in the analysis. After tabulating and coding data, an electronic spreadsheet was prepared in Microsoft Office Excel®. Next, data were checked to verify potential typing errors. Finally, statistical tests were implemented to treat and analyze data, using Statistical Package for the Social Sciences (SPSS®), when data were quantitatively analyzed and explored based on the models proposed by Liñán and Chen (2009) and Tho (2017).

The minimum and maximum values, means, standard deviation, and variance were calculated for each construct and statement. To treat and analyze the variables that represent motivation to learn and entrepreneurship intention, the scale was standardized from 0 to 100%, which is classified under three categories: Low (mean from 0 to 33.33%), Moderate (mean from 33.34% and 66.66%), and High (mean from 66.67% to 100%) behavioral level (Lopes, 2016).

Next, internal consistency was measured using Cronbach's alpha to estimate reliability (Sampieri, Collado, & Lucio, 2013). The Spearman's Correlation Coefficient was used to establish an association between the students' motivation to learn and entrepreneurial intention to verify associations between two or more variables, identifying and clarifying the variables, the relationships of which will be explored (Moreira & Caleffe, 2008). Spearman's correlation was performed considering that the Shapiro-Wilk and Kolmogorov-Smirnov tests showed data were not normally distributed. The following classifications were adopted to interpret the correlations: coefficients of correlation <0.4 (weak correlation), >0.4 to <0.5 (moderate correlation), and >0.5 (strong correlation) (Hulley et al., 2003).

Then, motivation to learn and entrepreneurial intention were related through a regression model. The statistical regression test explains the variability of the dependent variable, considering the variability of the independent variables (Becker, 2015). The objective is "to predict a single dependent variable based on the knowledge of one or more independent variables" (Hair Jr., Black, Babin, Anderson, & Tatham, 2009, p. 154). Based on the details of the data treatment in this study, the analysis and discussion of results are presented below.

4. Analysis and Discussion of Results

This analysis and discussion of results are separated because of the specific objectives established. Initially, it presents the profile of the students addressed, and then, the descriptive statistics for the constructs addressed are presented along with the instrument and constructs' reliability. The QEI's and ML's constructs were then correlated. Finally, the regression analysis determined the influence of EI on ML, analyzing the relationship between EI and ML. The results are presented and discussed as follows.

4.1 Profile of the Accounting Sciences Students

The study sample was composed of 219 students from the Accountancy program (UFSM), attending the daytime and evening shifts. The respondents were officially enrolled in the program and attended the first to the tenth semesters. The number of students decreases over time (Table 1) because students either drop the program, fail, or change the shift (usually to the evening shift), which reduces the number of students per class. Silva et al. (2020) report this decrease, concluding that 31% of the students in Accountancy drop out of the program in Brazil.

The situation between having a job and the shift in which students are enrolled are detailed in Table 1.

Table 1
Students according to the semester and relationship between having a job and shift

Semester	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total
N. of respondents	32	26	21	22	18	23	13	25	24	15	219
%	15%	12%	10%	10%	9%	10%	6%	11%	11%	7%	100%

Shift	**Paid job**		**No paid job**		**Total per shift**	
	Number	**%**	**Number**	**%**	**Number**	**%**
Daytime	26	24.8%	61	55%	87	40.3%
Evening	79	75.2%	50	45%	129	59.7
Total	**105**	**100%**	**111**	**100%**	**216**	**100%**

Source: developed by the authors.

Table 1 shows that most respondents were enrolled in the evening shift (approximately 60%). As for a job contract, most students did not work (51.4%). The analysis between the shift in which students were enrolled and whether they had a job contract shows that most students in the evening shift, 79 (75.2%) worked, which is opposed to the results for the daytime shift, in which most students (≅ 55%) did not work (Table 1). These results indicate that the evening shift enables students to work full-time, which expands their jobs options. Note that three students did not answer the questions concerning the program's shift and job.

Regarding the respondents' sex, approximately 52% (113 students) were male, and 48% (106) were female. Regarding the students' age, most were aged between 18 and 23 (56.6%, 124 students), followed by students aged between 24 and 29 (21%, 46 students). This result shows that most of the Accountancy students addressed in this study are young; hence, they had recently graduated from high school.

Next, we verified whether the students had attended a course or short-duration training addressing entrepreneurship. Most reported they had participated in any course addressing entrepreneurship, approximately 66% of the sample (145 students). Finally, at the end of the block addressing the students' characterization, there was a question asking whether the respondent or any family member had performed or were performing an entrepreneurial activity. Of the 219 respondents, 131 answered affirmatively, representing approximately 60% of the sample.

In general, the sample corresponds to male individuals aged between 18 and 23, attending the evening shift, not working, who had never participated in a course addressing entrepreneurship but were, themselves or a family member, performing an entrepreneurial activity. After characterizing the students' profiles, we present the descriptive statistics and reliability.

4.2 Descriptive Statistics and Reliability

Table 2 shows the respondents' descriptive statistics to analyze the dimensions predicted in the original models: ML, PA, SN, PBC, and EI.

Table 2
Descriptive statistics

Co.	Items	Minimum	Maximum	Mean	Ratio		Standard deviation	Variance
	General	5.00	35.00	23.4703	66.09	Moderate	6.07392	36.892
MA	Male	6.00	35.00	22.0708	61.97	Moderate	6.15386	37.870
	Female	5.00	35.00	25.0476	70.73	High	5.60113	31.373
	General	5.00	25.00	18.0776	71.16	High	4.64308	21.558
AP	Male	7.00	25.00	18.5841	73.27	High	4.68799	21.977
	Female	5.00	25.00	17.4857	68.69	High	5.00	25.00
	General	5.00	25.00	18.9178	74.66	High	4.18852	17.544
NS	Male	5.00	25.00	18.8584	74.41	High	4.55496	20.748
	Female	5.00	25.00	19.0381	75.16	High	3.75173	14.075
	General	6.00	30.00	16.6895	54.10	Moderate	5.38725	29.022
PC	Male	6.00	30.00	16.8850	54.78	Moderate	5.16297	26.656
	Female	6.00	30.00	16.3333	52.87	Moderate	5.45729	29.782
	General	6.00	30.00	17.3151	56.26	Moderate	6.91271	47.786
IE	Male	6.00	30.00	18.1150	59.02	Moderate	6.97541	48.656
	Female	6.00	30.00	16.3905	53.07	Moderate	6.76600	45.779

Legend: Co. = Construct
Valid N: General 219, Male 113, Female 106.

Source: Developed by the authors.

Table 2 shows that a minimum of 5 and a maximum of 35 points were obtained for the ML construct. A minimum of 5 and a maximum of 25 points were obtained for PA and SN, while a minimum of 6 and a maximum of 30 points were obtained for PBC and EI. This difference in the minimum and maximum values of the constructs: motivation and intention were due to the different scores obtained in the Likert scale and the number of variables for each construct.

Table 2 shows that the SN construct presented the lowest standard deviation and variance, revealing uniform answers. The opposite occurred for EI though, which obtained the highest standard deviation and variance between the answers, indicating that the students were not unanimous regarding their intention to undertake an enterprise, which is reinforced by the scores, which, together with the PBC, were the lowest ones.

Regarding the respondents' sex, women presented a higher ratio concerning motivation to learn, while men presented a moderate ratio. Porto and Gonçalves (2017) also verified that women are more motivated and academically engaged than men.

Both sexes presented a high ratio for PA and SN. Men showed the highest mean for PA (personal evaluation regarding entrepreneurship), while women presented the highest mean for SN (they were more frequently influenced by reference people such as parents, siblings, and spouses). PBC and EI showed moderate ratios, while men presented the highest mean for both constructs, which means they are more likely to perform an entrepreneurial activity and believe in their potential (Liñán & Chen, 2009).

Cronbach's alpha was used to estimate the responses' reliability, and a general Cronbach's α = 0.914 was found, indicating that the values resulting from the questionnaire are reliable. Additionally, the reliability of each construct was analyzed: ML (.866), PA (.896), SN (.778), PBC (.903), and EI (.955). Note that all the constructs presented acceptable values higher than 0.7; hence, they are reliable, presenting good internal consistency. Next, we verified the scores concerning having a job and the QEI constructs and ML, presented in Figure 2.

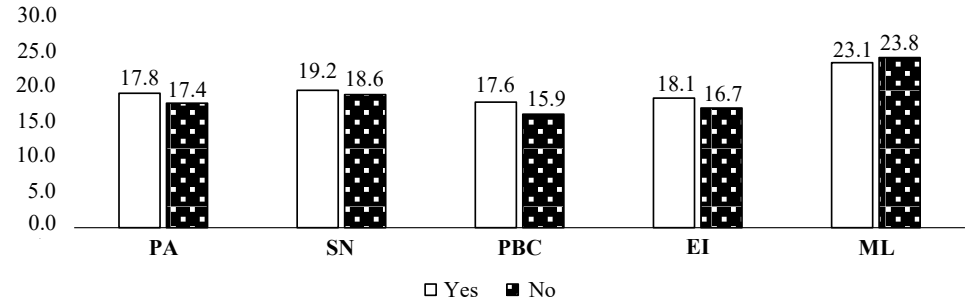

Figure 2. Professional experience according to construct

Source: developed by the authors.

Figure 2 shows that working students present a stronger intention to undertake a business than non-working students. Silva et al. (2019) consider that this difference is due to their professional experience and Krueger et al. (2000) corroborate the perception that prior professional experience can encourage entrepreneurial intentions. On the other hand, working students presented a lower ML than non-working students, which may be explained by the fact that non-working students have more time to dedicate to their studies, which interferes with their motivation to learn.

Hence, lack of time among working students might interfere with their ML. Note that most of the working students attend the evening shift, showing that they work during the day, which restricts their time to study. Later, we compared the scores obtained in the constructs QEI and ML by the students who attended a course addressing entrepreneurship versus those who did not. The results are presented in Figure 3.

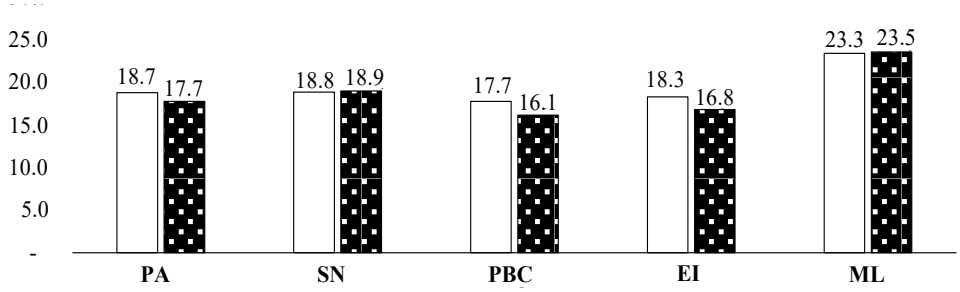

Figure 3. Knowledge regarding entrepreneurship according to construct

Source: developed by the authors.

Greater knowledge regarding the different aspects of entrepreneurship can contribute to more realistic perceptions regarding entrepreneurial activity, indirectly influencing intentions (Liñán & Chen, 2009). As Figure 3 shows, entrepreneurship knowledge obtained higher scores in the PA, PBC, and EI constructs; that is, the students with some knowledge of entrepreneurship presented stronger entrepreneurial intent, considering these three dimensions.

These dimensions are related to personal convenience, easiness, or difficulty in becoming an entrepreneur (Liñán & Chen, 2009). In a previous study, Silva et al. (2019) found that students who attended a course addressing entrepreneurship presented behavior more directed to entrepreneurship, a result that is corroborated by this study's findings.

Note that this difference was not verified for the SN dimension; the results in this dimension were lower among those who attended a course/training addressing entrepreneurship (Figure 3). This dimension is considered an extrinsic factor because it corresponds to social pressure students perceive and influences their decision to assume a behavior that is consonant to the perception of reference people in their lives, that is, what these people think of their choices (Liñán et al., 2011). Likewise, prior knowledge regarding entrepreneurship did not result in students without such knowledge scoring higher in ML. Therefore, having attended a course or training addressing entrepreneurship does not result in higher means for SN or ML. Following, we correlate the constructs.

4.3 Association between Entrepreneurial Intention and Motivation to Learn

Considering data were not normally distributed, Spearman's correlation was used to measure the association between the constructs. The conversion proposed by Hulley et al. (2003) was adopted in this study, in which coefficients of correlations <0.4 present a weak correlation, between >0.4 and <0.5 present moderate correlation, and >0.5 reveal a strong correlation. Table 3 shows the associations between the ML and QEI constructs.

Table 3
Correlation between the constructs

	ML	PA	SN	PBC	EI
ML	**1**				
PA	.055	**1**			
SN	.087	.269**	**1**		
PBC	.014	.574**	.297**	**1**	
EI	.079	.789**	.232**	.646**	**1**

** Correlation is significant at 0.01 (bilateral). Valid N (list wise) 219.

Source: developed by the authors.

The values presented in Table 3 indicate that the association between QEI and ML was not significantly correlated. Motivation to learn can be understood as a desire to learn the program's content. Students with higher levels of ML are more likely to seek more efficient learning strategies to facilitate the acquisition of knowledge (Tho. 2017), which is possibly associated with aspects of QEI, such as PA, PBC, SN, and EI.

Significant correlations at 1% were found though; hence, there is a 99% chance of association only between the QEI dimensions. PA, which explores one's perception regarding the personal convenience of being an entrepreneur (Liñán & Chen, 2009), presented different correlation levels with the remaining constructs.

Association with SN, which refers to a perception of whether "reference people" would support the decision to become an entrepreneur or not (Ajzen, 2001), presented a weak correlation (0.269). In contrast, a strong correlation (Hulley et al., 2003) was found between PA and PBC (0.575), which corresponds to one's self-perception of how easy or difficult it is to become an entrepreneur (Liñán & Chen, 2009), and between PA and EI (0,789), which indicates one's effort toward an entrepreneurial behavior (Liñán & Chen, 2009).

Based on the classification proposed by Hulley et al. (2003), the constructs SN, PBC, and EI were weakly correlated with each other, SN with PBC (0.297) and SN with EI (0.232). Liñán and Chen (2009) note that SN would exert some influence on PA and PBC, arguing that when individuals feel that "reference people" support their decision to become an entrepreneur, they feel more capable of performing it satisfactorily; PBC and EI (0.646) appeared strongly correlated (Hulley et al., 2003).

These results are similar to those found by Silva et al. (2019), who investigated QEI dimensions among the students attending the Accountancy program at UFSM in 2018. The authors reported a strong association between PA and EI, while SN and EI were weakly correlated.

Verification of correlations showed no statistically significant association between QEI and ML. Next, we present the regression analysis, considered an extension of the correlation analysis. It is intended to analyze the predictability and explanation of the variables based on the establishment of the dependent variable and independent variables (Hair Jr. et al., 2009).

4.4 Relationship between Entrepreneurial Intention and Motivation to Learn

Regression analysis is presented in this subchapter. Regression analysis is a statistical technique that enables exploring the relationship between a dependent variable and an independent variable (simple regression) or several independent variables (multiple regression) (Hair Jr. et al., 2009), identifying the significance of explanatory variables, and relating the dimensions to the variables, which are Profile, QEI, and ML.

Initially, the regression analysis considered an index defined by the sum of all dimensions (PA, SN, PBC, EI) to be the explanatory variable and ML the dependent variable. A low value (0.13) was found though when analyzing the quality of the regression model through R2 (Coefficient of determination) for the ML model, meaning that the model presents low explanatory power.

Adjusted R2 (Adjusted Coefficient of determination) considers the number of independent variables included in the regression equation and sample size (Hair Jr. et al., 2009). Note that adjusted R2 was smaller than the coefficient of determination (R2), which can be explained by the inclusion of variables that presented little explanation power or predictability. On the other hand, the standard error of the estimate (SEE) refers to the expected distribution of predicted values that would be observed if multiple samples of data were drawn (Hair Jr. et al., 2009).

Table 4 presents the coefficients for the ML model.

Table 4
Coefficients of the ML model

Model		Non-standardized Coefficient		Standardized Coefficient	t	Sig
		B	Standard Error	Beta		
ML	(Constant)	16.649	1.408		11.828	.000
	QEI	.039	.023	.113	1.672	.096

Source: developed by the authors.

When all the variables in a regression model are standardized (standardized coefficients), Beta assumes value 0 (Table 4), enabling researchers to directly compare the relative effect of each independent variable on the dependent variable (.113). The coefficients showed a positive correlation between the variables (Table 4). While Test 1 is a statistical test of the additional contribution of a variable to the precision of prediction above the contribution of variables already included in the equation (Hair Jr. et al., 2009) (Table 4). This regression model shows that QEI presented a significant relationship at 10% with ML; that is, there is a 90% chance that QEI (PA, SN, PBC, and EI together) influence ML.

To better understand this first result, the relationship between each dimension of QEI (PA, SN, PBC, and EI) and the profile variables, explanatory variables, with ML (dependent variable) was analyzed. Initially, we verified the relationship between PA and the profile variables (independent) with the dependent variable M.For the profile, the variables sex, age, paid job (Job), course on entrepreneurship (CDiscEmpr), entrepreneurial activity (AtivEmpr), and school term (Semester) were included. An R^2=.084 shows the model's low quality, which is a limitation. Next, Table 5 presents the coefficient of the model for the PA dimension and profile with ML.

Table 5
Coefficients of the model for dimension PA and profile

Model		Non-standardized Coefficient		Standardized Coefficient	t	Sig
		B	Standard Error	Beta		
PA and Profile	(Constant)	13.384	3.114		4.298	.000
	Semester	-.136	.143	-.074	-.954	.341
	Sex	2.655	.709	.266	3.743	.000
	Age	.232	.449	.039	.518	.605
	Job	.101	.744	.010	.136	.892
	CDiscEmpr	.027	.788	.003	.035	.972
	AtivEmpr	-.350	.743	-.034	-.470	.639
	PA	.129	.092	.100	1.390	.166

Source: developed by the authors

Table 5 indicates that the PA dimension and profile model was insignificant in predicting ML, except for the variable sex. It shows that these variables, except for sex, do not statistically explain ML. Note that PA refers to the degree to which an individual positively or negatively assesses his/her behavior (Liñán & Chen, 2009; Oliveira, Vieira, Laguía, Moriano, & Soares 2016). The regression analysis showed that this assessment of behavioral perception did not influence the respondents' motivation.

A regression analysis was performed to verify the relationship between SN and profile variables (independent) with ML (dependent). Regarding this analysis, the low R2 (.089) indicates the model's low quality; the higher the value of the Coefficient of determination, the higher the model's quality (Hair Jr. et al., 2009). Table 6 presents the coefficients for the regression model considering the SN dimension and ML profile.

Table 6
Coefficients for the model considering the SN dimension and profile

Model		Non-standardized Coefficient		Standardized Coefficient	t	Sig
		B	Standard error	Beta		
SN and Profile	(Constant)	12.687	3.127		4.057	.000
	Semester	-.159	.143	-.086	-1.110	.269
	Sex	2.528	.707	.253	3.577	.000
	Age	.228	.447	.038	.509	.611
	Job	.291	.750	.029	.388	.698
	CDiscEmpr	-.075	.783	-.007	-.095	.924
	AtivEmpr	-.376	.735	-.037	-.512	.609
	SN	.206	.118	.126	1.744	.083

Source: developed by the authors.

The model considering the SN dimension and profile with ML was significant (10%) only for SN and sex (Table 6). The remaining non-independent variables were not statistically relevant to predict ML. In this sense, there is a 90% chance of SN and sex to influence ML. The SN dimension reflects the perception of reference people, whether these individuals approve or disapprove of an individual's decision to become an entrepreneur (Liñán & Chen, 2009). The sample is homogeneous regarding sex, with men in a slightly larger number. Pansera, Valentini, Souza, and Berleze (2016) state that motivation is determinant for the level and quality of learning and that there is a similar motivational orientation between men and women. Still, observing the descriptive comparison between sexes, female students are highly motivated to learn, whereas male students are moderately motivated.

This dimension comprises the more social component of QEI as it incorporates the influence of reference people on an individual's decision concerning his/her professional career (Oliveira et al., 2016). It is in line with the result obtained, showing that family members, partners, friends, co-workers, and classmates influence the motivation to learn among the Accountancy students at UFSM.

Furthermore, the relationship between PBC and profiles variables (sex, age, whether the individual had a paid job, attended a course addressing entrepreneurship, or performs an entrepreneurial activity), independent variables with the dependent variable (ML). Similar to what was verified in SN and PA, R^2 presented a low value, showing that the model is of low quality. Table 7 presents the coefficients for the model concerning PBC and the variables profile.

Table 7

Coefficients of the model of PBC dimension and profile

Model		Non-standardized Coefficient		Standardized Coefficient	t	Sig
		B	Standard error	Beta		
PBC and Profile	(Constant)	14.781	2.912		5.076	.000
	Semester	-.150	.145	-.081	-1.035	.302
	Sex	2.600	.711	.261	3.660	.000
	Age	.191	.450	.032	.423	.673
	Job	.109	.747	.011	.146	.884
	CDiscEmpr	-.014	.790	-.001	-.018	.986
	AtivEmpr	-.400	.754	-.039	-.530	.597
	PBC	.067	.085	.058	.786	.433

Source: developed by the authors.

Table 7 shows that the relationships between the PBC and the profile variables with ML were not significant, except for sex. Hence, the model indicates a significant likelihood that only sex influences ML. The remaining profile variables and PBC do not appear statistically significant to explain ML variations. Note that the PBC dimension concerns behaviors individuals consider capable of controlling and mastering (Bandura, 1982).

Liñán and Chen (2009) consider that this perceived behavioral control includes not only a sense of power but also a perception that one can control behavior. The regression model presented for the PBC (perceived behavioral control) independent variables and profile with ML was not significant to explain the motivation to learn among Accounting Sciences students.

Next, we sought to verify whether there is a relationship between EI and the profile variables, explanatory variables, with the dependent variable with ML. Regarding the quality of the model, a low R^2 was found, showing that the variables have low explanatory power to explain ML. Table 8 presents the model's coefficients.

Table 8
Coefficients of the model for EI and profile

Model		Non-standardized Coefficient		Standardized Coefficient	t	Sig
		B	Standard error	Beta		
EI and Profile	(Constant)	13.369	2.869		4.659	.000
	Semester	-.145	.143	-.079	-1.019	.309
	Sex	2.689	.707	.270	3.803	.000
	Age	.190	.447	.032	.426	.670
	Job	.142	.741	.014	.191	.849
	CDiscEmpr	-.023	.783	-.002	-.030	.976
	AtivEmpr	-.132	.760	-.013	-.174	.862
	EI	.112	.060	.137	1.859	.065

Source: developed by the authors.

Table 8 shows that the EI dimension and profile model, related to ML, was significant only for EI and sex, showing positive correlation coefficients, revealing a relationship with ML. Furthermore, the model was significant at 10% of likelihood; hence, there is a 90% chance that EI and sex influence ML. The remaining profile variables did not appear statistically significant to explain ML variables.

Regarding EI, the more an individual intends to engage in a specific behavior, the more likely s/he will engage with this behavior in real life (Liñán & Chen, 2009). It reinforces the result obtained in the regression model, which showed that the behavioral dimension is related to entrepreneurial intention and predicts the motivation to learn of future Accounting Sciences students at UFSM.

The regression analysis between QEI, Profile, and ML revealed relationships between some of the QEI individual dimensions and one profile (sex) variable with ML. The significant explanatory relationships for ML occurred in the SN and EI dimensions, indicating that motivation to learn among this study's respondents is influenced/explained by social pressure to engage with behavior or not and reflects the effects of social values on individuals (SN) (Morales, Rebolloso, & Moya, 1994). Therefore, it shows the influence and importance of reference people for students and reflects on their motivation to learn.

It also indicates that these students' motivation to learn can be explained by the EI dimension, representing the objective an individual wants to achieve and the planning process that will make this objective, such as creating a business, a reality (Tubbs, & Ekerberg, 1991).

Therefore, ML can be explained by EI, considering that an individual's intention is intrinsically linked to his/her behavior; hence, any behavior is preceded by an intention (Krueger et al., 2000). Therefore, based on the previous discussion, the null hypothesis is rejected, and the alternative hypothesis is accepted; that is, there is a significant positive relationship between entrepreneurial intention and motivation to learn among Accounting Sciences students at UFSM.

It reveals the importance of promoting entrepreneurial intention among Accounting Sciences students, as it may influence their learning motivation. In general, these results contribute to a better understanding of the first model presented, in which a significant relationship was found between QEI (composed of PA, SN, PBC, and EI) and ML.

5. Final Considerations

This study's objective was to analyze the relationship between entrepreneurial intention and motivation to learn among 219 Accountancy students at UFSM. In general, the sample was composed of male individuals aged between 18 and 23, enrolled in the evening shift, with no job, who never attended a course addressing entrepreneurship, and who themselves, or someone in their families, had already performed entrepreneurial activities.

Next, we measured these students' motivation to learn according to the instrument proposed by Tho (2017). Motivation to learn corresponds to aspects that tend to influence the way students behave in the classroom, taking advantage of teaching conditions to acquire new knowledge (Tho, 2017). The students participating in this study presented moderate motivation to learn.

Next, we measured the students' entrepreneurial intention using the instrument proposed by Liñán and Chen (2009). We verified that the students obtained high ratios in personal attitudes and subjective norms, showing they are interested and have a good impression regarding being an entrepreneur, and also that reference people influence their decisions about becoming entrepreneurs. On the other hand, moderate ratios were obtained in behavioral perception and entrepreneurial intention. Finally, working students present stronger entrepreneurial intention, and are less motivated to learn, which is possibly explained by the fact that they have less time to dedicate to their studies.

Additionally, the constructs motivation to learn and entrepreneurial intention were associated. No statistical correlation was found between QEI and ML. However, a significant association was found between the QEI dimensions. A strong positive association was found between personal attitude and perceived behavioral control and between personal attitude and entrepreneurial intention, which indicates that students see entrepreneurship as a professional option. A weak positive association was found between subjective norms and entrepreneurial intention though, suggesting that whether reference people support their intention to create a business or not is weakly correlated with their entrepreneurial intention.

Finally, we determined the influence of entrepreneurial intention on motivation to learn. The regression models showed that entrepreneurial intention influenced motivation to learn via QEI. Further regression analyzes between QEI and Profile with motivation to learn revealed significant relationships for the subjective norms and entrepreneurship intention dimensions and the variable sex explaining the motivation to learn.

Hence, even though the constructs were not significantly associated with the themes, the regression analysis showed that entrepreneurship intention (the set of its dimension) is positively and significantly related to motivation to learn, mainly because of the subjective norms and entrepreneurial intention dimensions, reinforcing the influence of students' reference people and encouragement to entrepreneurship.

These contributions enable students to understand better their behavioral aspects, motivation to learn, and entrepreneurship intention. This understanding can enhance the promotion of entrepreneurship not only as a professional option but also encourages entrepreneurial behaviors. In addition to the students, this study can contribute to the professors teaching the program addressed here.

These results can support professors in acquiring knowledge regarding the students' entrepreneurial intention and motivation to learn, a factor that can improve more entrepreneurial teaching and improve the teaching-learning strategies. Another contribution refers to the possibility of replicating this study, analyzing entrepreneurial and motivational behavior among students from different programs and institutions.

This is a cross-sectional study so that a single period was analyzed, and only the students of the Accounting Sciences undergraduate program of a public higher education institution were addressed. Additionally, it was restricted to a quantitative approach in which data were collected and treated with statistical analyses, considering previously validated constructs. Additionally, the Coefficient of determination showed the model's low quality, which may restrict adequate inferences.

Future studies are suggested to replicate this study longitudinally, including more periods and considering other undergraduate programs from public and private institutions. A qualitative analysis of data is recommended, using different statistical tests to confirm or improve explanatory power. Additionally, other behavioral constructs can be considered, such as entrepreneurship and commitment.

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Stress Among Accountancy Professors: Modulation from the Perspective of the Demand-Control-Support Theory

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Abstract

Objective: To identify and analyze the influence of demand, control, and support levels on self-reported stress among professors in Accountancy programs at Brazilian Higher Education Institutions (HEI).

Method: A survey addressed the biopsychosocial condition of 614 professors, including stress perception measured by the Teacher Stress Inventory and demand, control, and emotional support measured by the Job Demand-Control-Support.

Results: Support and Control significantly ($p<0.01$) contribute to decreasing professors' perceived stress. The demands imposed by HEIs increase ($p<0.01$) stress levels though. Additionally, age, positive perception of mental health, and general satisfaction with the job and students are factors that negatively modulate professors' stress levels ($p<0.01$). Being a woman, teaching in the morning shift, and being a professor in a public HEI, on the other hand, increase the respondents' stress levels ($p<0.01$).

Contributions: Considering that an individual's ability to adapt is limited, this study enables unveiling the circumstances that can aggravate the effects caused by stress, considering increased physical and emotional demands, possibly leading to psychosomatic diseases.

Keywords: Education, Higher; Stress; Teaching; Mental Health; Accounting Sciences.

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1. Introduction

College professors constantly face the challenge of encouraging students to engage with the difficulties and facilities of disciplines by creating evaluation systems that meet the institution's requirements and also reflect the actual level of students learning, developing pedagogical practices and techniques that enable professors to interact with students and devising mechanisms to condone the students' idiosyncrasies. In addition, dealing with increasingly younger students (compared to professors' age) and diverse social contexts (Blevins-Knabe, 1992; Jardilino, Amaral, & Lima, 2010), ageism (Joye & Wilson, 2015), social role stereotypes (El-Alayli, Hansen-Brown, & Ceynar, 2018), and other variables that affect the professors' wellbeing (Goebel & Carlotto, 2019; Xu, 2019) are also challenging.

In this sense, regardless of its origin, persistent stress experienced in the work environment may cause cardiovascular diseases, neoplasm, and immunological disorders – especially when there is a genetic predisposition –, in addition to mental disorders (such as depression, low self-esteem, and Burnout syndrome, among others) (Maslach & Jackson, 1981; Landsbergis et al., 1993; Arnetz, 1996; Lipp, 2005; Castro, 2010). Additionally, the perception of stress is directly associated with an individual's resilience and the ability to adapt to stressful events. The individuals' ability to adapt is limited though.

Physical or psychological stress is not always negative, as stressors can also be interpreted as challenges. In many cases, stress promotes adaptation or the development of cognitive and behavioral faculties, while the individual remains in good mental and physical health, a phenomenon that is known as eustress (Selye, 1956, Nickel, 2004). Adaptation or learning is usually called coping strategies (Lazarus & Folkman, 1984).

Inability to develop physiological or cognitive skills to deal with stressors means an individual is distressed. In this condition, a professor cannot promote the students' learning with the expected level of quality. Hence, negative repercussions in the classroom often mean that one's ability as a professor has been compromised.

Teaching is an activity in which sharing, experimentation, and inter and intrapersonal relationships are paramount; hence, wellbeing should predominate for learning to take place (Pocinho & Perestrelo, 2011). Therefore, stress may either encourage professors to be more engaged in their profession or exhaust their psychophysiological resources to the point they experience burnout.

Another situation that stands out among some professors teaching in Brazilian higher education institutions is working a double shift. Many professionals teach in the evening shift while concomitantly performing a business activity during the day, in addition to being involved with research and extension activities and even administrative tasks (e.g., committees, coordination position, and others) (Santana, 2011; Nascimento, Aragão, Gomes, & Nova, 2013). Even though it is interesting that professors apply and update their knowledge, taking part in innovations that originate in professional experience, working in more than one job may aggravate the effects of stress, considering an excess of physical and emotional demands imposed by experiencing two different environments.

Therefore, the context (institutional, career, and relational) in which teaching takes place directly affects the quality of teaching in the Accounting field, resulting in more or less qualified and prepared future professionals. This context generates frustration in students when they realize that their training will not ensure personal satisfaction or financial remuneration according to expectations, mainly because their potential was not fully developed. Additionally, the market tends to undervalue (from the organizational and financial points of view) low-skilled workers and even seek professionals from other fields (when there are no regulatory restrictions) to meet corporate needs.

Given the previous discussion, there is a concern with identifying factors that may affect the performance of faculty members from Accountancy programs, and consequently, the program's quality. Therefore, we sought evidence to answer the following question: **What is the influence of demand, control, and support on self-reported stress of professors teaching in Accountancy programs from Brazilian higher education institutions?** In this sense, this study's objective was to find evidence that enables identifying and analyzing the influence of demand, control, and support levels on self-reported stress of professors from Accountancy programs from Brazilian HEIs. Additionally, we sought to verify the effect of socioeconomic variables on professors' stress.

This study's results are expected to improve understanding of professors' health-disease continuum caused by stressful events to enable the academic community to mitigate distress situations and promote personal and job satisfaction so that HEIs ensure faculty members properly perform their teaching and administrative activities. When these expectations are met, students benefit directly from an academic environment conducive to learning, that is, an enjoyable, stimulating, and friendly environment.

This paper is divided into five sections: introduction, literature review, methodological procedures, data analysis, and final considerations. Section 2 presents the literature review that supported this study. Section 3 includes the methodological aspects, such as sampling, instruments used, detailing the study variables, and analysis procedures. Section 4 reports the results and analysis, including a population description. Finally, section 5 provides some considerations regarding data, limitations, and suggestions for future studies.

2. Literature Review

The framework of studies addressing stress is based on Claude Bernard's work from the end of the 19th century. He developed studies on the adaptation of living beings, stating that only with a constant and stable internal environment would an organism find sufficient conditions to survive (Faro & Pereira, 2013). In addition to the biological aspects, Walter Cannon also described behavioral changes to deal with emergencies and restore balance, introducing the fight-or-flight response to deal with social or physical threats (Baptista, 2009). Later, Walter Cannon studied the specific mechanisms of response to changes in the external environment and their efficiency in maintaining stability, namely sensory mechanisms that communicate the body's state to the brain (Baptista, 2009).

From this relationship between the organism with the external environment and its adversities, Cannon developed the concept of homeostasis, which enabled him to study changes in the nervous and endocrine systems to regulate the metabolism in response to environmental changes and health deterioration when the system is deregulated (Quick, Spielberger, 1994). He verified that the body has a primary defense system for maintaining the baseline levels of physiological functioning, called homeostasis, which holds a state of balance, enabling the organism to adapt to constant changes in the external environment, directly or indirectly absorbed by the internal environment (Faro & Pereira, 2013).

> At the beginning of the 20th century, Harvard physiologist Walter Cannon expanded upon Claude Bernard's views of a flexibly stable *milieu interieur* […] in his investigation of the response of the sympathetic-adrenal medullary system to emergency situations. This system swiftly mobilizes the body's energy resources by increasing epinephrine (adrenaline), which in turn increases blood pressure, heart rate, and blood sugar, as well as hastening blood coagulation, clearing fatigue products from muscles, and decreasing digestion (Ganzel, Morris & Wethington, 2010).

Based on these findings, Selye (1956) verified a similar and consistent response pattern to events challenging the body's balance (homeostasis), regardless of how the challenge was imposed. The animals tested presented unspecific responses to challenges; whether the challenges were temperature increases or infectious or toxic agents, i.e., there was a universal response pattern he called general adaptation syndrome (Baptista, 2009). This response was composed of three stages: alarm, in which stressors are identified and a defense strategy is organized; the second response, resistance, is when the body implements changes necessary to deal and eliminate an agent; and finally, the last stage refers to exhaustion, when a stressor is not eliminated and may lead to death (Baptista, 2009).

Selye (1956) indicated that stress concerns an orchestrated set of endocrine responses activated to deal with the action of harmful stimuli that alter the homeostasis state. Based on this concept, initially conceived as a biological syndrome, Selye (1956) urged the scientific community to study adaptive responses. The interest was identifying the threshold between survival capacity and health decline according to the challenges imposed.

From a functional point of view, stress was biologically developed to rapidly activate and mobilize one's attention to perform a cognitive task that preserves life when a threat is identified. Therefore, the stress' primary role is to promote individuals' adaptation when facing a potentially threatening situation (from an organic point of view). Hence, stress is intended to preserve the organism's homeostasis, i.e., it concerns the organism's physiological effort in recovering internal balance, preserving life (Lipp, 2005; Ganzel, Morris & Wethington, 2010).

Therefore, stress is a human body's normal response that is fundamental and indispensable to survival, without which individuals would not be able to face situations of great danger (Meleiro, 2007). Hence, failure to enter an alert state caused by stress means inattention and potential motor paralysis when facing a situation of great danger, indicating a lack of response that would preserve life.

A paradox arises when we consider physiological and psychological adaptation though. When we think about stress as a means of survival when individuals are facing death, for example, the attack of a wild animal, the stress mode will speed up breathing while pupils and blood vessels dilate, showing that all this organic effort is intended to preserve the body so it can return to a state of balance (homeostasis).

Hence, the impact on biological functioning is confirmed, but the explanatory focus is primarily from the individual to the environment. Therefore, a fundamental concept of stress in psychology is that there is a specific relationship between the individual and the environment, making it essential to understand all psychological and social resources that mediate this contact (Faro & Pereira, 2013).

From this perspective, França and Rodrigues (2005, p. 30) consider stress as "the organism's state after adaptation struggle, which may deform response capacity, affecting one's mental and affective behavior, physical condition, and relationship with others." This definition leads Nickel (2004) to consider that these authors address stress both as a process, which consists of tension (a state in which individuals deviate from their natural relaxing level) whenever facing a threat or a challenge and as a condition, category in which responses are classified as eustress or distress. Hence, Nickel believes that eustress emerges when people respond well to a given demand, providing a positive response, leading individuals to offer more effective and creative responses. On the other hand, distress occurs when the response is negative, triggering an inadequate adaptive process, leading to exhaustion (Nickel, 2004).

Therefore, stress is a process that develops in stages. It is possible to experience temporary stressful events of low or high intensity, experience the resistance stage while dealing with the factor generating unbalance or be in an intense burnout state, which favors the emergence of diseases (Lipp, 2005). Rudow (1999) states that stress should be considered a relational process. From an explanatory perspective of individual differences, we need to understand the reason for varied responses to deal with stressors, such as psychological exposure to health risk or the intensity of adaptive responses. Therefore, the focus is on the particularities of the interaction between the psychological apparatus, social environment, and biological functioning, primarily seeking to clarify how it works and the extent to which it quantitatively and qualitatively differentiates an individual's adaptability (Faro & Pereira, 2013).

Thus, there is an inverted U-shaped relationship between exposure to stressors and adaptation, i.e., adequate amounts of exposure to a stressor (stimulation or challenge) lead to a moderate increase in health and improved physiological and mental functions. In contrast, high and persistent exposure to stressors is related to adverse health outcomes (Ganzel, Morris & Wethington, 2010). This relationship is shown in Figure 1.

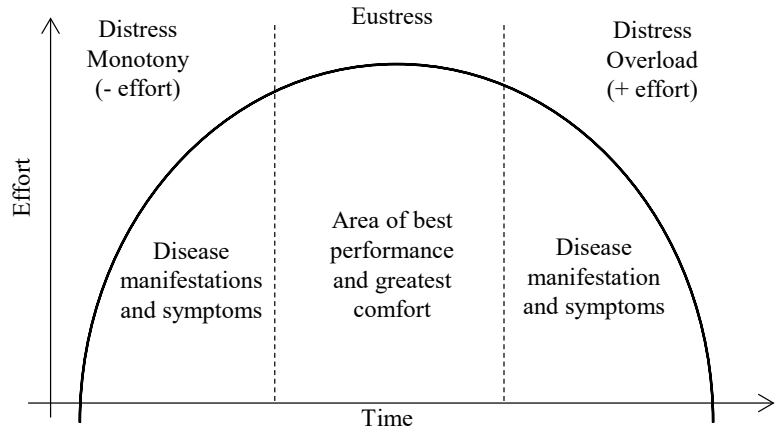

Figure 1. Stress Curve

Source: França and Rodrigues (2011, p. 42)

From the perspective proposed here, a stressor can be characterized according to its timing; individual perception (desirable or undesirable, beneficial or harmful); whether a given demand is self-imposed or not; and according to its source (e.g., friend, manager, police, or institutional standard, etc.) (Lazarus & Folkman, 1984; Le Fevre; Matheny & Kolt, 2003). As suggested by Ganzel, Morris, and Wettington (2010), modeling the stress process requires a much higher level of specificity of the underlying mechanisms of homeostasis and maintenance of the individual's psychobiological health.

Historically, the concept and measurement of health are based on the idea of lack of diseases. This focus on the pathological aspect likely emerged from the fact that, in the past, health was obtained by overcoming illness. However, in the mid 20th century, people realized that diseases no longer affect people the same way they did centuries ago, which motivated a new concept of health (Arnetz, 1996). According to Breslow (1972), this new perspective encouraged the World Health Organization (WHO) to define health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." (WHO, 2015a).

Even though this definition was not changed, it is constantly the object of criticism (WHO, 2015a) because of the use of the word "complete," considering that such plenitude, as argued by Dalmolin, Backes, Schaurich, Colomé, and Gehlen (2011), is utopic. The previously mentioned authors state that this conception, differently from what is currently constructed, suggests balance and the existence of a happy and productive life despite illnesses, disorders, or other conditions. From this perspective, health is a subjective assessment that exists beyond organic, natural, or objective evidence, nor is it associated with a balanced state, as it is an intrinsic judgment through which a person performs self-assessment, considering socio-cultural values and meanings assigned to the living process (Dalmolin et al., 2011).

From this perspective, the health-disease continuum depends more on structural evidence, i.e., external factors in the social environment, than on objective analyses or connections with different health determinants. However, it is specifically submitted to life and work, cultural, environmental, and familial conditions. Consequently, considering that many factors are combined to affect the lives of individuals and communities, the context in which people are inserted is vital to explain their health state or illness processes. Hence, understanding these two conditions (health and disease) goes through analyzing one's social, economic, and physical environment and individual and behavioral characteristics (WHO, 2015b).

These factors unfold into others, creating a complex relationship between the individuals and their social and physical environment, i.e., how variables such as income and social status, education, physical environment, social support networks, genetics, health service, and gender, among others, relate with health (WHO, 2015b). Hence, determinants and conditioning factors of the health-disease continuum are multifactor and complex. In summary, health and disease are processes considered on a continuum and are related to economic, social, and cultural aspects as well as to one's personal experience and lifestyle (Seidl & Zannon, 2004).

It is in this context that the model proposed by Karasek (1979, p. 287) is the most indicated for a college education context, considering that:

> The model postulates that psychological strain results not from a single aspect of the work environment, but the joint effects of the demands of a work situation and the range of decision-making freedom (discretion) available to the worker facing those demands. These two aspects of the job situation represent, respectively, the instigators of action (workload demands, conflicts, or other stressors which place the individual in a motivated or energized state of "stress") and the constraints on the alternative resulting actions. The individual's job decision latitude is the constraint, which modulates the release or transformation of "stress" (potential energy) into the energy of action. Thus, this is a stress-management model of strain, which is environmentally based. If no action can be taken (Zeigarnik, 1927), or if the individual must forego other desires because of low decision latitude (Henry and Cassell, 1969: 179), the unreleased energy may manifest itself internally as mental strain.

This model privileges three psychological dimensions: social support, control over one's job, and the psychological demand arising from work (Araújo, Graça, & Araújo, 2003). The authors explain that, based on a combination of these three dimensions, the model distinguishes specific work situations imposing different health risks. Karasek Jr. (1979) developed an inventory to assess these aspects: the Job Strain Model, later renamed Job Demand-Control-Support.

Initially, Karasek Jr. (1979) developed a scale to measure stress based on workers' perception regarding demand and control level, the American Quality of Employment Survey, with 49 questions. Later, using the Swedish version of the original questionnaire, Theorell et al. (1988) adopted a Likert Scale and reduced the instrument from 49 questions to 17, and included the support dimension (five questions for the demand dimension, six for the control dimension, and another six dimensions for the support dimension).

These scales enable classifying stress perception under four conditions: high demand and low control (high demand); low demand and high control (low demand); high demand and high control (active jobs); low demand and low control (passive jobs) (Karasek Jr. (1979). According to this model, high-demand jobs represent the highest risk for health outcomes (Macedo *et al.*, 2007).

Various studies use the model developed by Karasek Jr. (1979), including those in the education field. For example, Greco, Magnago, Prochnow, Beck, and Tavares (2010) found a positive association between the outcome and high demand at work (high psychological demand and low control) when compared to professors classified under low demand (low psychological demand and high control).

Other studies sought to identify the perceptions of college professors regarding stress levels and found significant results: more than 50% of the interviewed workers presented chronic stress levels (Gmelch; Wilke, & Lovrich, 1986; Blix et al., 1994; Carloto, 2004) – a context experienced in varied contexts, such as in Brazil. Garcia and Benevides-Pereira (2003) found that 1/3 of the sample experienced emotional burnout, 1/5 depersonalization, and 1/4 experienced decreased professional self-realization. Carlotto (2004) addressed stress among college professors from the burnout perspective and found high levels of burnout in the sample, providing additional information regarding burnout among college professors, reporting that the lower the level of autonomy or task identity, the greater the emotional burnout professors experience. Regarding the context of Brazilian college professors, Soares, Mafra, and Faria (2019) found that the mean score obtained was higher than those reported for most of the occupations they analyzed. It means that the results portray a harmful context among college professors in Brazil because stress weakens the body's defense system, activates mechanisms that trigger inflammation, or deactivates mechanisms that inhibit inflammation, undermining one's health conditions (Soares, Mafra & Faria, 2019).

A situation similar to that of the Brazilian context is also reported in other countries. For example, El-Ibiary, Yam, and Lee (2017) addressed professors from a Pharmacy program in the United States and verified that 41% of the professors were at the risk of burnout due to stress. Furthermore, the authors noted that the risk of burnout is greater among women, professors with fewer years of experience, those with young children, and working many hours a week. In another study addressing the American context, Blix, Cruzeiro, McBeth, and Blix (1994) verified that professors in their sample presented good adaptation to academic stress but perceived stressors in their work context for at least 50% of the time. Because of this constant state of alertness, professors reported burnout, stress-related health problems, decreased productivity, inability to deal with stress at work, and were considering changing jobs. However, Blix et al. (1994) argued that difficulty in dealing with anxiety could be modulated if professors could manage their demands.

These findings support Mcclenahan, Giles, and Mallett (2007), in which a sample from a university in the United Kingdom was addressed. These authors found moderate stress levels (mean of 36% of the scale) and verified that, as proposed by Karasek Jr. (1979), demands, control and support have a moderating effect, which corroborates studies reporting that high levels of stress perception and persistent stressors at work are linked to health problems and job dissatisfaction. Moeller & Chung-Yan (2013) also reached the same conclusions, reporting that greater perceived situational control allied with high social support improves the individuals' perceived ability to deal with stressors. Hence, while demand control and emotional support buffer job stress, demands exacerbate them. It is worth noting that Moeller and Chung-Yan (2013) conducted their study in Canada, and the level of the professors' self-reported stress was approximately 70% of the scale. Therefore, the theory proposed by Karasek Jr. (1979) finds evidence of its applicability even in different contexts, whether with high levels of stress (Moeller & Chung-Yan, 2013) or with low-stress levels (Mcclenahan, Giles & Mallett, 2007).

The results show that professors experienced depression, muscle pain, emotional burnout, insomnia, low self-esteem, and other psychophysiological problems associated with high-stress levels. This problematic situation affects many professors worldwide, and according to Karasek Jr. (1979), it is due to two main factors: excessive demand and a low degree of emotional support, and autonomy assigned to individuals to control demands. This phenomenon was called Demand-Control-Support Model.

The results previously reported show that comparatively (Soares, 2016, Soares, Mafra & Faria, 2019), the stress level found among professors is higher than in various professions, thus teaching is one of the professions at an increased risk of experiencing syndromes/disorders and other consequences of persistent stress. Furthermore, because of the high demand professors face and because teaching is a strictly relational activity (with students, colleagues, coordinators, leaders, and secretaries, among others), professors perceive high-stress levels, exhausting their physical, psychological and emotional resources to cope with stress. This situation may lead to diverse consequences, the less harmful of which would be withdrawing from activities, though it has the potential to compromise one's mental health, even leading to suicide.

Specifically, in the context of Accounting Sciences programs and the remaining programs in Applied Human Sciences, stress is considered a highly prevalent problem affecting professors (Farias et al., 2019). Because of various components (teaching, research, extension, student advisory, university management), the Brazilian college context is permeated by stressors that undoubtedly affect teaching experiences, which in turn may cause distress among professors experiencing acute stress (Ferreira et al. (2020), insecurity, and physical and mental exhaustion (Coutinho, Magro, & Budde, 2011). This situation deserves attention because the way professors perceive their jobs directly affects their performance at work and even their personal lives (Paiva & Saraiva, 2005; Petroski, 2005).

Regarding the previous discussion, Greco et al. (2010) note that even though teaching allows certain freedom and creativity (in the pedagogical sense and within the classroom), enabling greater control over some issues inherent to the job, professors have to concomitantly work with extra class activities, long work days, perform short-term tasks, and work in multiple jobs. The sum of these situations favors adverse effects on professors' health.

3. Methodological Procedures

The instrument used to collect data was composed of two blocks: descriptive variables and stress perception. It was applied online. The professors were contacted through their emails identified in the HEIs' institutional websites, and 614 professors from diverse Brazilian regions returned. The instrument was registered in the *Plataforma Brasil* under CAAE: [suppressed to ensure blind review]. The instrument's first part was composed of questions addressing the respondents' biopsychosocial profile and aspects related to their jobs, variables associated with stress (Gmelch, Wilke, & Lovrich, 1986; Gillespie et al., 2001; Calais, Andrade, & Lipp, 2003; Garcia & Benevides-Pereira, 2003; Kataoka et al., 2014; Saeed & Farooqi, 2014; Shen et al., 2014; Silva et al., 2014; Faro, 2015; Goebel & Carlotto, 2019, Xu, 2019; Layte et al., 2019).

The professors' perceived stress was determined with the scale proposed by Boyle, Borg, Falzon, and Baglioni Jr. (1995), the Teacher Stress Inventory (TSI), with 26 questions, divided into five dimensions rated on a five-point Likert scale and adapted to the Brazilian context by Silva Morgado and Gomes (2009). This instrument presented good validity considering theoretical surveys and also empirical goodness of fit (e.g., Griffith, Steptoe, & Cropley, 1999; Silva, Morgado, & Gomes, 2009; Klassen & Chiu, 2010; Boshoff et al., 2018; Clément et al., 2020), with a Cronbach's alpha above 0.8 in these studies. Hence, the result of the respondents' perception of stress is expressed by the following equation:

$$EE_i = \sum E_i \quad (1)$$

Where:

EEi is the score obtained by respondent *i*, in the aspects addressed in the questions concerning all the items of the Teacher Stress Inventory; and

Ei is the grade respondent *i* assigned to each of the items in the Teacher Stress Inventory.

To determine whether the professors' perceived stress could be mediated by demands control and emotional support, we opted for using the theory of Job Demand-Control-Support (DC-S) by Karasek Jr. (1979), though based on the short version developed by Theorell, Perski, Åkerstedt, Sigala, Ahlberg-Hultén, Svensson, and Eneroth (1988) and translated into Portuguese by Mello Alvesa, Chorb, Faersteinc, Lopesc and Werneckd (2004). The Brazilian version presented a minimum Cronbach's alpha of 0.67 (in the control dimension) and a high degree of validity for the Brazilian context, considering the large number of studies adopting this theory.

In the model proposed by Karasek Jr. (1979), stress is regulated by demand, the effect of which is mediated by its interaction with an individual's control over demand and social support received (the latter was added when the model was complemented). Hence, individuals working in environments characterized by high demand, low control, and low social support experience the highest stress level. The DC-S comprises 17 questions divided into three dimensions: demand, control, and support, rated on a Likert scale (never, almost never, rarely, sometimes, and often).

For this reason, and to enable the respondents to be classified in one of the model's vertices (low demand, active job, passive job, or high demand), and to analyze and include data in the model, all the dimensions were included in the model separately. Therefore, the equations expressed in 2, 3, and 4 were used to analyze the Demand-Control Model according to its vertices:

$$ED_i = \sum D_i \quad (2)$$

Where:

EDi is the score obtained by respondent *i*, in the questions addressing the Demand dimension; and

Di is the grade assigned by respondent *i* to the items in the Demand dimension.

The score of the dimensions Control and Support is given by:

$$EC_i = \sum C_i \quad (3)$$

Where:
ECi is the score obtained by respondent *i*, in the questions addressing the Control dimension; and
Ci is the grade assigned by respondent *i* to the items in the Control dimension.

$$ES_i = \sum S_i \quad (4)$$

Where:
ESi is the score obtained by respondent *i*, in the questions addressing the Support dimension; and
Ci is the grade assigned by respondent *i* to the items in the Support dimension.

Based on this proposal, a respondent reporting low demand (e.g., when the sum of the items in this dimension – Demand – totals up to 12 points, considering the total score is 25) and high levels of control and support (when the sum of the items in these two dimensions – Control and Support – is higher than 30 points, considering that each dimension can individually reach 30 points), would be classified under low demand, according to what is proposed by Karasek Jr. See Figure 1.

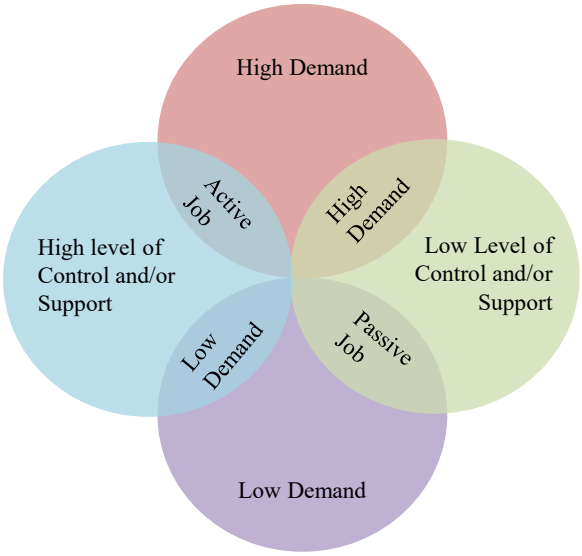

Figure 2. DC-S Classification

Source: based on Kasarek Jr. (1979).

Regarding the data analysis, we opted for a multiple linear regression model, as shown in equation 5, in addition to absolute and relative frequencies. After estimating the linear regression, we performed tests to verify problems related to heteroscedasticity, multicollinearity and specification error,

$$EE_I = \alpha + DCSX_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \cdots + \beta_k X_{ki} + e \quad (5)$$

Where:
EEi is the level of stress perceived by respondent *i*;
α is the model's constant;
DCS are the variables associated with Job Demand-Control-Support;
Bj (j=1, 2, .,., k) are the coefficients of each control explanatory variable;
Xj (j=1, 2, .,., k) are the explanatory variables;
i (i=1, 2, .,., k) represents each of the observations of the sample under analysis; and
e is the error term of the estimated model.

Regarding the analysis of differences between the groups' means, the Shapiro-Francia test was initially used to verify the distribution of the quantitative variables (p-value below 0.05). Then, the Mann-Whitney Test or Spearman Test was used for the quantitative variables that are not normally distributed when variables had two groups, and the Kruskal-Wallis test was used in the remaining cases (when at least one variable was qualitative and the other was quantitative). Finally, the Student's t-test was applied when the variables were normally distributed. Whenever the objective was to analyze an association between qualitative variables, ANOVA (Chi-square) was used to determine whether associations were statistically significant.

4. Data Analysis

Initially, we verified that the participants were 44 years old on average (77% were older than 37); most were male (57%); married or in a stable union (73%); with at least one child/dependent (70%); and an average family income of approximately R$10,800. Regarding the sample's professional profile, 52% worked one shift only, and the other half (48%) taught two or more shifts. Most respondents (62%) were hired by private HEIs and reported teaching was their vocation (78%). Regarding academic degrees, only 32% of the professors had a doctoral degree. In general, they presented an average of 14.4 years of teaching experience (the professors were 30 years old on average when they initiated their careers, a median equal to 29, and a standard deviation of 6.7). The faculty members of the Accounting Sciences Programs included professors from various fields of knowledge, considering the highest degree: Business Administration (23%), Accounting Sciences (45%); Law (3%); Economy (4%); Production Engineering (5%), and other fields (21%).

The professors' responses concerning their workload show that the respondents taught 16.1 hours/classes on average, most (50%) of the respondents taught only in the evening shift. A variation was found in this item due to the respondents' sex (women reported 17.2 hours/classes on average, while men reported 15.2, p-value=0.01). Those teaching only one shift spent 14.8 hours in a classroom, while those who taught two shifts spent 17.6 hours/classes a week. The respondents teaching three shifts spent approximately 17.5 hours/classes a week. These differences were considered statistically significant (p-value=0.01).

A difference was also found in the number of hours taught by the professors in private HEIs compared to other HEIs, a difference considered statistically significant (p-valor=0.00). These professors reported they spent 17.4 hours in a classroom, while a substitute teacher taught 16.5 hours/classes, and a public servant (tenured professor) spent 13.8 hours/classes on average. When asked whether they had another job, 55% of the respondents reported another job.

Regarding the respondents' perception regarding their physical and mental health, most considered themselves healthy; 78% reported their mental health was good or very good, even though their perception regarding their physical health was slightly inferior (72%). As for a negative perception, approximately 1/3 of the respondents reported their physical health was either very poor, poor, or fair. Another 1/4 of the respondents rated their mental health as either very poor, poor, or fair.

4.1 Respondents' Stress Level

The mean Cronbach's alpha obtained in this study was 0.945 (Table 1) for the 26 items, while for the six dimensions individually, the one with the lowest degree of internal structure was "Time/Resource Difficulties" and the one with the highest degree was the dimension "Student Misbehavior". The normality test indicated that the variables were not normally distributed (p-value<0.01).

Table 1 shows that the general level of moderate stress (variable produced by summing the scores of the dimensions presented by the Teacher Stress Inventory) of the respondents was 82 points, representing 63% of the maximum level measured by the instrument used. Additionally, the dimension that contributed the most to professors' stress levels was student misbehavior, and the one that contributed the least was the relationship with colleagues dimension.

Table 1
Professors' Level of Perceived Stress According to Dimension

	Data per Respondent							
Dimension	Score	Mean Score	Standard Deviation	Maximum Score	Minimum Score	Mean Rate	Cronbach's alpha	Normality test
Student Misbehavior	12.268	20.0	6.0	30.0	6.0	67%	0.895	0.00
Workload	12.022	19.6	5.5	30.0	6.0	65%	0.856	0.00
Professional Recognition	9.511	15.5	4.6	25.0	5.0	62%	0.818	0.00
Time/Resources Difficulties	9.365	15.3	4.6	25.0	5.0	61%	0.800	0.00
Relationship with Colleagues	7.097	11.6	4.0	20.0	4.0	58%	0.828	0.00
General Stress Level	50.261	82.0	20.6	130.0	29.0	63%	0.945	0.00

According to the literature, this level of self-reported stress is only below the level reported by Lorenz, Benatti, and Sabino (2010), in a study addressing the nurses of a Brazilian university hospital and that reported by Caeiro (2010) addressing primary school teachers in Portugal. These findings indicate a need for future studies to verify how the level of stress perceived by college professors compares with other professions. The high-stress level perceived by the sample addressed here is consistent with the studies conducted by Gmelch, Wilke and Lovrich, (1986); Blix et al. (1994); Carloto (2004), Moeller and Chung-Yan (2013), El-Ibiary, Yam and Lee (2017) Soares, Mafra and Faria (2019).

The Demand-Control-Support Model is a three-dimension model designed by Robert Karasek Jr. to assess the psychosocial aspects of work (Karasek Jr. 1979; Theorell et al., 1988; Melo et al., 2004). This model relates workers' levels of control and support with psychological demands arising from the workplace and the repercussions on workers' psychological and organic structure.

Psychological demands refer to situations from the work environment imposed on workers: intense concentration, work under time pressure, and the number of tasks to be performed (Reis et al., 2006). For this reason, control and support mediate stress individuals experience, working as instruments to balance or overcome distress. Control involves two groups of factors: 1) the use of skills: creativity, learning new things, different tasks, and the development of special skills; and 2) decision-making authority: freedom to decide on how to perform tasks, the possibility to give an opinion about work tasks, and to influence the managerial policy (Reis et al., 2006). The support dimension also presents two groups of factors intended to measure the relationship with co-workers: affectivity involving the relationship and support received; and the general situation of the work environment.

Karasek Jr. (1979) and Theorell et al. (1988) propose that demand and control-support levels are simultaneously assessed, relating these dimensions to assess levels/types of specific work situations. Different work situations emerge when levels of demand and control-support are combined: 1) high demand: combining high demand and low control-support; 2) active job: high demand combined with high control-support; 3) passive job: low demand is combined with low control-support; and 4) low demand: low demand is combined with high control-support.

Based on this theory, DC-S presented a general Cronbach's alpha of 0.785, the dimension with the lowest alpha was Control (0.615 – Table 2), and the highest was Support (0.887). Considering the responses of 614 professors, the normality test shows that the dimensions are not normally distributed (p-value<0.01).

Table 2
Levels of Demand, Control, and Support Presented by the Professors in each Dimension

Dimension	Score	Data per Respondent					Cronbach's alpha	Normality test
		Mean Score	Standard Deviation	Maximum Score	Minimum Score	Mean Rate		
Demand	9,038	14.7	2.1	20	7	74%	0.712	0.000
Control	12,125	19.7	2.3	24	6	82%	0.615	0.000
Support	11,505	18.7	3.5	24	7	78%	0.887	0.000

Note that the mean of the scores assigned to the dimensions was relatively high because the dimension with the lowest mean was "demand," with a mean of 14.7, representing 74% of the maximum score possible. As for the dimensions' factors, the item "How often do you work intensively (i.e., have to do much in little time)?" was the one the professors reported most frequently. In the Control dimension, the factor "Does your work demands many skills or specialized knowledge?" presented the highest mean. Finally, the item "I get along well with my superiors at work" obtained the highest mean in the Support dimension.

Regarding the prevalence of the type of Demand-Control-Support, Table 3 shows that 82% of the professors were classified under Active Job. The respondents identified many stressors in the academic environment but were not significantly affected due to the Control-Support level they enjoyed. These results indicate that the sample has not intensely suffered from stress arising from their jobs as college professors.

Table 3
Prevalence of the Type of Demand-Control Among Professors

Classification	General Frequency	
	General	%
Low Demand	74	12%
Active job	501	81%
Passive job	11	2%
High Demand	28	5%
Total	614	100%

4.2 Inferential Analysis

The regression model was estimated, as reported in the method section, to determine the effect of Demand, Control, and Support (DCS) on promoting (Demand) or modulating (Control and Support) professors' perceived stress (See Appendix 1). After estimating data, a test was performed to determine eventual restrictions concerning heteroscedasticity (White Test), multicollinearity (VIF), and specification error (Ramsey RESET). The model presented a heteroscedasticity problem (p-value of 0.0061). Therefore, the model analyzed is shown in Table 4. It was estimated according to the robust Stepwise method, assuming 5% significance. That said, the problem of multicollinearity was analyzed, which presented values below 1.26 (for the Support variable) and 1/VIF of 0.791134 (average VIF of 1.13). Finally, the specification error test indicated that the model (Robust Stepwise) presented this problem (0.0098). However, it was assumed that this issue emerges when using only significant variables in the model.

Table 4

Estimation of the Robust Model According to the Stepwise Method

Variable	Coefficient	Standard Error
Support	-1.24236***	0.20856
Demand	3.29505***	0.34544
Control	-0.86741***	0.29324
Family Income	-0.00046***	0.00011
Sex	4.42681***	1.46682
Teaching in the Morning shift	9.99983***	2.50788
Teaching in a Public HEI	3.21721**	1.50533
Perception of Mental Health	-2.73916***	0.94234
Satisfaction with Students	-2.39690***	0.81109
Job Satisfaction	-1.80456**	0.86285
Constant	102.37570***	8.60855
Prob> F		0.0000
R^2		0.3484
R^2 Adjusted		-

***p<0.01. **p<0.05 and *p<0.1

Thus, considering this study's sample, we verified that the theory proposed by Karasek Jr. (1985) presented a significant explanatory relationship with the professors' perceived stress (p-value<0.01). It means that demand had a positive effect (coefficient of 2.64) on stress, while the higher one's perception of Control (coefficient of -0.72) and, mainly, of Support (-1.40), the lower one's perception of stress, a result that corroborates Moeller and Chung-Yan (2013), Lima and Lima-Filho (2009), Katoaka et al. (2014), and Rodrigues, Hinojosa, and Ramírez (2014).

This result indicates that, when demands are combined with control and support, as defined in the model proposed by Karasek Jr. (1985), they have a similar influence on the stressor-tension relationship for the different types of stressors present in a university environment, such as students' misbehavior, workload, professional recognition, lack of resources, and relationship with colleagues, according to the dimensions of the Teacher Stress Inventory. The DC-S model proposes that when high demands are associated with high control-support (that is, active jobs), individuals are motivated to face the challenge of overcoming demands.

In effect, support-control works as a valve to relieve the pressure of demands, displacing obstacles (stressors) to motivate adaptation and keep an individual in eustress. Therefore, even though stress can contribute to distress and potential illness (Garcia & Benevides-Pereira, 2003; Murofuse, Andranches, & Napoleão, 2005), stressors might also work as motivators, as they are stimuli and cause an adaptation at another level, undoubtedly a superior state when an individual faces and overcomes a demand. Stressors, whether they are environmental, psychological, or contextual, have only the ability to trigger a stress response; that is, this response will be mediated according to each individual's ability to deal with new or adverse situations and coping strategies available or learned during their life history (Aragão et al., 2009).

If experience, previous knowledge, and deduction of circumstances are similar to those previously experienced, the discrepancy between what is observed or experienced and what is expected or planned will be reduced, eliciting compensatory responses specific to each stimulus and organism (Garcia, 2008). For this reason, based on the evidence presented here, the pertinent issue is that HEIs should ensure that professors perceive they do have control over their work environment and support to mediate their perceptions of stress experienced in the academic milieu, preventing chronic stress.

The results show that the professors' perceived stress was reasonable (note that the constant equal to 102.37 was also significant), and for this reason, they needed mediators so they would have the resources to maintain homeostasis. It is essential considering that changes in the role of professors, as noted by Byrne et al. (2013), added occupational stressors that were not traditionally characteristic of universities.

Regarding descriptive variables, the model indicates that Family Income is significant in decreasing stress perceptions. Hence, we need first to highlight that it should be understood as a predictor of social well-being, considering there were no other variables to capture the effect of this construct and that it indicates access to health, leisure, education, and security. Therefore, Family Income appears as a mediator of the respondents' perception of stress, considering its coefficient (-0,00046) and significance (p-value=0.000).

According to Faro (2015), the lower one's socioeconomic status, the greater an individual's vulnerability. On the other hand, the author notes that as income increases, the less one is exposed to stressful contexts, as more material resources minimize stressors associated with low quality of life and social adversities linked to poverty. Therefore, even though income does not entirely reflect the impact of socioeconomic status on stress, it represents an important variable in quantifying exposure and activation of adaptive psychosocial resources provided by financial status (Faro, 2015, Layte et al., 2019).

As for the fact that women have a higher perception of stress than men, some authors propose potential social and biological explanations. Gmelch, Wilke, and Lovrich (1986) and Calais, Andrade, and Lipp (2003) suggest that, from a social point of view, despite advancements in gender inequality, women still deal with more demands than men. Gmelch, Wilke and Lovrich, (1986) consider that women deal with family demands while their partners are not expected to heed these demands in the same proportion. Additionally, women perform more activities than men in HEIs. Note that the academic milieu is sensitively sexist, giving preference to men over women when distributing resources or even in the interpersonal relationship between professors and students (Gmelch, Wilke, & Lovrich, 1986).

Calais, Andrade, and Lipp (2003) report that, from a biological point of view, women are more sensitive to psychological problems related to depression, anxiety because of estrogen, which can produce neuroprotection to developmental disorders (e.g., schizophrenia) and degenerative diseases (e.g., Alzheimer), due to clinical functions, increasing their stress response.

Regarding those who teach in the morning shift, the survey reveals that these individuals are more sensitive to stress than professors teaching in other shifts. The influence of the circadian cycle may explain this. It generally peaks when waking up and decreases over the day until reaching its lowest level at night, resulting in greater sensitivity to stress in the morning (Dalri, 2013).

The model indicated that teaching in a public HEI was a situation that increased the professors' stress level when compared to other types of job contracts, in line with other studies (Gillespie et al., 2001; Kataoka et al., 2014). This fact possibly arises from the context of a teaching career (Moeller & Chung-Yan, 2013) in public HEIs. Even though these workers benefit from job stability, they are required to perform management and extension activities in addition to their roles as educators and researchers.

Regarding the respondents' mental health perceptions, this study shows that the more positive one's perception, the lower stress levels are reported. According to Lazarus and Folkman (1984), an individual's perception and cognitive interpretation when facing a given situation are crucial to triggering a stress response. Therefore, if an individual perceives that s/he has appropriate mental health conditions, s/he will be able to more efficiently mobilize energy to deal with occupational stressors.

The last variable analyzed, satisfaction, negatively mediated stress. Job satisfaction concerns how professors assess their jobs, making positive or negative assessments. Hence, one naturally expects this interaction to be one of the factors intensifying or alleviating stress (Gmelch, Wilke, & Lovrich, 1986). Gmelch, Wilke, and Lovrich (1986) highlight that the satisfaction of professors toward their students concerns an assessment of the level of appreciation they receive for the effort and investment applied to prepare classes. Hence, the more professors are satisfied with their students, the more appreciated they feel, which results from a feeling of being recognized for their efforts to improve the quality of teaching.

5. Final Considerations

This study's objective was to identify evidence concerning the effect of demand, control. and support on self-reported stress among professors from Accounting Sciences undergraduate programs from Brazilian Higher Education Institutions and their relationships with socioeconomic variables. Initially, the stress perception of professors who answered the questionnaire was moderate, considering the maximum level measured by the instrument (Teacher Stress Inventory); the mean score was 63%.

It is interesting to note that various demographic factors presented a significant association (p-value<0.1) between stress perception, when analyzed in isolation: age, sex, number of dependents, family income, type of HEI, years of experience as a professor, number of hours spent in a classroom, whether the individual has another job, perception regarding one's physical and mental health, and level of satisfaction with HEI, manager, students, colleagues, course, and remuneration.

This result confirmed what was expected: stress among professors is a complex phenomenon (Seidl & Zannon, 2004) and is a motive of great social concern. The reason is that when stressful events constantly permeate the academic environment, negative psychophysiological responses may be triggered among professors, affecting their performance and interaction with the organizational environment, consequently influencing the students' learning.

Regarding this study's primary objective, evidence supports a significant (p-value<0.01) and negative relationship between the level of stress and control and support perceived by professors. On the other hand, the more the respondents perceived demands in their workplace, the more positive their perception of stress (p-value<0.01).

The professors realize they face significant demands, as 81% were classified under Active Job; the respondents' mean score concerning the perception of demands was 14.7 (mean prevalence of 74% of the maximum score measured by the DC-S). Because of the regulating role control and social support in the work environment play, however, the respondents did not experience distress. This means that, even though the environment presents high demand levels, the professors tend to remain in a eustress state preserving their mental and physical health.

The fact is that, in general, professors enjoy a high level of autonomy (mean score of 82%) to plan their activities within and outside the classroom and perform daily tasks. Additionally, a perception that their work environment is a pleasant place permeated with good relationships with co-workers (including managers) explains the low level of emotional distress perceived. Therefore, the greater control one has over her/his work and support received, the lower the production of stress hormones, positively impacting the workers' mental and physical health.

Still, this study's results cannot be understood as if professors do not demand care, attention, or investment in the workplace. The fact that professors efficiently deal with academic stress shows a need to maintain and preserve this context. In this sense, it is worth noting that that 1/4 of the respondents perceived their physical and mental health to be somewhat inadequate, indicating potential emotional burnout. Stress disrupts internal homeostasis, demanding individuals to adapt. If one's adaptability is limited, if stressors are not suppressed, or if an individual is unable to deal with stress, physical and psychological burnout may result, and diseases manifest with the potential to be permanent or even fatal, also favoring the emergence of psychosomatic pathologies.

Considering the previous discussion and the importance of work for one's socioeconomic situation and well-being, the difficulties imposed by stress are painful, so mitigating stress is vital. Additionally, the quality of higher education depends in great measure on a high-quality faculty. Therefore, the various agents involved with teaching within higher education institutions (including professors) should seek mechanisms that enable positive coping with stressors, especially those inherent to the profession.

This study's limitations are based on two aspects: sample and data collection instrument. This first aspect is because there is no database in Brazil containing the data and characteristics of professors working in Accounting Sciences programs. Hence, it is impossible to determine a probabilistic sample to analyze how stress affects all the professors. Therefore, this study adopted a non-probabilistic convenience sample, which does not allow for the generalization of results. For this reason, we sought to reach as many respondents as possible.

The limitation concerning the instrument is associated with the fact that various measures (such as the stress inventory) are self-reported instruments, which can only provide an approximated perspective of the event, considering the questionnaire collects the respondents' perceptions. To mitigate the problem, validated tools were used to expand the reliability of data and its comparability.

Future studies are suggested to deepen knowledge regarding burnout and depression triggered by the persistence of academic stressors. Another possibility would be to investigate the stress reported by (cisgender and transgender) women teaching in Accounting Sciences programs. This study reports on something well documented: mental distress is higher among women than men and, for this reason, understanding how this situation occurs in universities could lead to coping strategies intended to mitigate the prevalence of this condition. Additionally, through a longitudinal study, the situation of most professors was classified under active job, so that it would be interesting to investigate how professors respond to adversities faced in their careers: moral harassment, lack of motivation toward their careers, coping strategies, and post-pandemic changes.

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Appendix 1

Model Estimation with all the Variables

Variables	Coefficient	Standard error
Support	-1.089650***	0.279717
Demand	3.250501***	0.365355
Control	-0.954328***	0.331342
Age	-0.023955	0.117079
Sex	4.600769***	1.548697
Married	4.168706	8.008532
Single	1.043083	8.175797
Divorced	5.268972	8.419474
Number of children	0.921707	1.142500
Dependents	-3.069958	2.556226
Teach at Evening	2.319385	1.745730
Teach at the Morning	10.606050	7.282451
Family Income	-0.000415***	0.000131
Teach in a Public HEI	3.430405*	1.820489
Doctoral degree	-0.131680	2.522063
Master's degree	0.437154	2.024721
Highest Degree in Accounting	1.969760	3.331775
Highest Degree in Business Administration	-0.119562	3.482935
Highest Degree in Economics	-0.681828	4.896584
Highest Degree in Law	0.761807	5.453118
Highest Degree in another field	0.801266	3.546956
Years of Experience with Teaching	-0.067370	0.134433
Perception Regarding Physical Health	0.234871	1.092445
Perception Regarding Mental Health	-2.761007**	1.124160
Use Chemical Substances	-1.067266	1.482670
Have a Severe Disease	2.021688	4.224041
Hours/Classes per week	0.099631	0.088608
Have Another Job	-2.438433	1.598887
Have a Management Position	1.322541	1.514128
Has a Vocation to Teach	0.128018	1.711714
Job Satisfaction	-1.682574	1.087556
Satisfaction with the HEI	-0.622341	1.120036
Satisfaction with the Manager	0.259252	0.887594
Satisfaction with the Students	-2.155764	0.898732
Satisfaction with Colleagues	-1.167080	1.120685
Satisfaction with the Courses	2.018349*	1.155641
Satisfaction with the Remuneration	-1.012969	0.821086
Constant	96.190250***	13.296200
Prob> F		0
R^2		0.3689
R^2 Adjusted		0.3284
***p<0.01, **p<0.05, and *p<0.1		

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The Y and Z Generations in Accountancy Graduate Programs and Work Values

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Abstract

Objective: This study's objective was to identify the differences in work values among Accountancy graduate students from the Y and Z generations considering the socio-demographic characteristics.
Method: 337 students regularly enrolled in Accountancy graduate programs in 2019 participated. This study used the *Escala Revisada de Valores Relativos ao Trabalho* – EVT-R [Revised Work Values Scale], Exploratory Factor Analysis, non-parametric tests, and pairwise comparison.
Results: Female students assigned greater importance to values concerning job stability and financial independence than male students. Likewise, significant differences were found between the groups in terms of having "financial responsibility at home", "teaching experience", "mother's educational level" and "financial supporting during the graduate program".
Contribution: This study enables a better understanding of the priorities of the Y and Z generations in the work environment. Understanding these values enables individuals to discuss choices, careers, motivations, and interests. These aspects are essential to promote job satisfaction, and consequently improve the performance of their employers.
Keywords: Work Values, Generations Y and Z; Graduate Programs; Accounting.

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1. Introduction

Work values are essential to developing studies addressing labor because work values reveal the individuals' preferences (Dose, 1997). The concept of work value has profoundly changed compared to other daily life values (Lévy-leboyer, 1994). The study conducted by the MOW International Research Team (1987) identified that people work for remuneration, social recognition, and interpersonal relationships while the main elements considered necessary in a workplace are autonomy, organization, pleasant social environment, freedom, and power (Blanch, 2007).

Work values are considered variables that influence the management of people and their behavior in organizations (Cammarosano, Santos & Rojas, 2014). The plurality of elements linked to these variables broadens studies addressing the effect of work values on the management of people, considering that values enable us to understand what workers deem essential in an organizational environment (Porto & Tamayo, 2008; Cammarosano et al., 2014). Therefore, this is a favorable scenario to understand behavioral aspects and subjective and productive work actions, enabling the development of strategies to select and retain people aligned to an organization's guidelines (Zanelli, Borges-Andrade, & Bastos, 2014).

Cavazotte, Lemos, and Viana (2012) note that work values may differ according to sociocultural context and socio-demographic profile. In this sense, one's generation, a demographic factor, also influences the workplace due to its characteristics and behaviors that impact group and interpersonal relationships (Cordeiro, 2012; Parry & Urwin, 2011).

Technological change has influenced the Y (1979-1992) and Z (beginning in 1993) generations, starting in the 2000s (Twenge & Campbell, 2008; Twenge, Campbell & Freeman, 2012). Individuals from the Y generation expect workplaces to differ from what their parents experienced. They seek to have their own business or change their current job for another that promotes greater quality of life or career advancement even if it implies a lower salary (Moreira & Araújo, 2018). The Z generation is more cautious and impatient due to the economic recession in which they grew up. The Z generation members' ambitions are directed to creating their start-up though, and they prefer horizontal organizations and desire to transform their hobby into work (Ozkan & Solmaz, 2015; Grubb, 2016; Revista Exame, 2017).

The insertion of the Y and Z generations in workplaces is one of the main challenges managers face due to the distinct characteristics they present in comparison to previous generations (Smola & Sutton, 2002; Twenge & Campbell, 2008; Furucho, Oswaldo, Graziano & Elias Spers, 2015). These characteristics can only be learned considering the beliefs, values, and priorities that make up each generation.

Understanding a generation's characteristics and values demands analyzing chronological dates, historical, cultural, and social factors. Sociological studies report differences between generations' classes, gender, ethnic-racial, and cultural aspects (Weller, 2010).

Mannheim (1993) adds that generations should be analyzed from a multidimensional perspective, considering their relationship with the social environment. Hence, studying work values is essential to understand how different generations relate in the workplace and how they develop their values (Comazzetto, Perrone, Vasconcellos & Gonçalves, 2016).

Recruiting people in the accounting field who fit the expectations of employers can be a significant challenge (Holt, Burke-Smalley & Jones, 2017; Almeida & Silva, 2018). Moreover, significant changes have taken place in the accounting field in recent decades, which allied to changes of standards, increased regulation, technological innovation, virtual competition, and occupational stress (Almeida, 2020) reinforce the need to understand whether new generations of students are prepared for the dynamics of the job market and also the need to reflect whether companies are aware of the expectations of these generations of workers. Therefore, this study's objective is to answer the following research question: **what are the differences in work values between Accountancy graduate students from the Y and Z generations, considering socio-demographic characteristics?**

Generally, people from the Y and Z generations enter a graduate program at the start of their adult life and professional trajectory. This stage of life is marked by challenges, opportunities, and high expectations toward accomplishments and establishing oneself in the world of work. These circumstances are believed to encourage students to prioritize work values that suit their characteristics and desires. Hence, identifying the differences in the Y and Z generations' work values while considering socio-demographic characteristics is important to understand their behavior in the workplace and choices, considering that work influences an individual's training and well-being (Cavazotte et al., 2012).

Regarding the research problem, this study considered the graduate program analogous to a professional environment because it is an environment permeated by tasks, goals, and requirements, the reward of which is a graduate degree. Studies addressing work values within graduate programs also enable individuals to discuss choices, careers, motivations, and interests. These aspects are critical to promoting job satisfaction and improving the individuals' professional performance.

Understanding the characteristics and values of new generations opens up the possibility of verifying whether the preferences of these groups are consistent with the undergraduate program and aligned with the job market's offers and requirements. Additionally, by understanding these values, professors can design practices that meet the expectations of new generations and encourage students to explore their careers.

2. Work Values and Generations Y and Z

Work values are conceptions related to goals or behaviors expected in the professional environment. These goals are ordered according to their importance like principles that guide an individual when assessing and making choices in a professional context (Ros, Schwartz & Surkiss, 1999). Roe and Ester (1999) note that work values motivate an individual's performance and, in the social sphere, indirectly influence and establish rules and shared goals that guide collective action.

Elizur (1984) states that work values are related to personal aspects, considering that values considered significant at a work setting generate financial reward or the attainment of prominent positions that influence personal life. Therefore, these values should be analyzed together to explain their importance in people's well-being. In the same sense, Ros et al. (1999, p. 54) state that work values are "expressions of basic values in the work setting."

Studies addressing work values seek to understand what is significant for individuals in the workplace (Porto & Tamayo, 2008). Not only individuals hold values though, but so do groups and collectives, that is, people belonging to the same group, geographical region, community, or culture (Roe & Ester, 1999). Hence, values explain societal changes, support the analysis of behaviors and characterize groups (Porto & Tamayo, 2003).

Considering that the individuals of the same generation compose a group of people born in the same era and share common characteristics and experiences, the conjecture is that these experiences affect their values, beliefs, and behaviors in both the personal and professional spheres (Hajdu & Sik, 2018). Furthermore, studies (Smola & Sutton, 2002; Parry & Urwin, 2011; Hajdu & Sik, 2018) show that the values of a generation tend to be influenced by the period in which this generation was born, by historical events and similar experiences (e.g., wars, social crises, natural disasters, and political and technological changes) in the first years of life, which make individuals similar among them but different from other generations.

The differences between generations in the modern work environment impose challenges to organizations related to leadership, commitment, interpersonal relationships, and performance, among others (Comazzetto et al., 2016). In organizations, attitudes and performance and the way employees relate to each other is influenced by their values, principles, and the way they think, which often are shared among the individuals of the same generation. Grubb (2016) defends that one must understand people to coordinate them well. For this reason, any individual in a multigenerational workplace should pay attention and try to understand these characteristics and attitudes.

Mannheim (1993) considers that studying generations is vital to understand the experience of historical situations, and mainly, how these situations and experiences were signified and interiorized by individuals. Mannheim's definition of generations(1993) focuses on the behaviors and manifestations of certain groups rather than trying to label them at one point in time.

The Y Generation specifically grew up in contact with technology and is more individualist. People from this generation were born virtually at the same time technological advancements and globalization took place. Such events influenced these individuals' characteristics, ideals, and behaviors (Santos Neto & Franco, 2010; Comazzetto *et al.,* 2016). Studies show that, in a work setting, people from the Y Generation are inventive, innovative, and confident; seek immediate professional success; frequently expect to be recognized, and crave for a job in which they obtain personal achievement in addition to remuneration. For these reasons, the Y Generation is more likely to give up an unsatisfying job (Santos Neto & Franco, 2010; Kowske, Rasch, & Wiley, 2010; Grubb, 2016; Comazzetto et al., 2016; Forbes, 2019).

Studies characterize the Z Generation as an expansion of the Y Generation (Santos Neto & Franco, 2010; Ozkan & Solmaz, 2015; Grubb, 2016). The Z Generation did not know the world without the Internet, computers, or mobile phones. Its behavior and mindset are entirely influenced by the instantaneous use of technology (Faber, 2011). For this generation, the concept of the world is detached from geographical boundaries, and technology is used as an extension of its self-expression (Faber, 2011; Grubb, 2016). Additionally, the youths of this generation are characterized by their great ease with social media, future-oriented values, being dynamic, adept at changes, and multitasking (Ozkan & Solmaz, 2015; Revista Exame, 2018).

The importance of understanding the differences between generational behaviors and beliefs encouraged different studies. For example, Cennamo and Gardner (2008) analyzed the differences between the Baby Boomers, X and Y Generations in terms of work values, job satisfaction, commitment, and intention to quit. A total of 504 employees of an organization participated in the study, and the results debunked the notion that the youngest generation (Y) values status, freedom, and social involvement more than their counterparts. In turn, baby Boomers assign greater importance to the organizational and extrinsic values than X and Y Generations.

Twenge et al. (2010) also analyzed the differences between Baby Boomers, X and Y Generations in terms of work values. The study addressed 16,507 high school students in the USA in 1967, 1991, and 2006 to consider the three generations. The results show that leisure values increased significantly over the years between Baby Boomers and the Y Generation; focus on work decreased, whereas status and money-related values achieved the highest levels for the X generation and even more for the Y Generation, compared to Baby Boomers.

On the other hand, the results reported by Kowske et al. (2010) show that Baby Boomers, X and Y generations are more similar than different regarding work values. Maloni, Hiatt, and Campbell (2019) analyzed the values desired by the Y and Z Generations and how professors and business recruiters understood these values. They found that these generations are similar in terms of work values, especially regarding financial return and job stability.

The results of studies addressing organizational values do not indicate consistent directions, reinforcing the need for empirical studies to address this topic. In this context, Mannheim (1993) suggests analyzing the actions of individuals from the same generation, which implies observing them from a macro perspective, considering the historical, political, and social context, and from a micro perspective, considering the knowledge an individual acquired throughout his/her development (Weller, 2010). Furthermore, personal characteristics such as age, gender, ethnicity, professional occupation, and social context tend to differentiate work values among individuals (MOW, 1987; Parry & Urwin, 2011; Cavazotte et al., 2012).

Cavazotte et al., (2012) state that socio-demographic characteristics affect work values, as well as the individuals' historical and social context. Schwartz (2006) considers that everything that affects one's life circumstances to which individuals have to adapt influences work values. Therefore, the hypothesis proposed in this study is: **there are differences in the work values held by Accounting graduate students belonging to Y and Z Generations when individuals' socio-demographic characteristics are considered.**

3. Method

This is a descriptive study with a quantitative approach. Its population was composed of 1,696 Accounting undergraduate students, and the final sample was composed of 337 students regularly enrolled in one of the Accounting programs in 2019. Data were collected in October and November 2019 online with an electronic instrument using the SurveyMonkey® software.

The instrument comprised two sections. The first addressed work values using the *Escala Revisada de Valores Relativos ao Trabalho (EVT-R)* [Revised Work Values Scale – WVS-R] developed by Porto and Pilati (2010), who authorized its use. It is composed of 34 work values. The respondents were asked to rate the importance of these values on a scale ranging from "1 – not important at all to 5 – extremely important". Figure 1 presents the items that composed the EVT-R.

ID	It is important to me to...
S1	Help others
S2	Collaborate with society's development
S3	Fight social injustice
S4	Show my skills
S5	Obtain financial stability
S6	Make money
S7	Comply with work standards
S8	Be able to support myself financially
S9	Respect the hierarchy
S10	Be appreciated for my work
S11	Succeed in my profession
S12	Be financially independent
S13	Be recognized for the satisfactory result of my work
S14	Be respected for my skills at work
S15	Be useful to society
S16	Supervise other people
S17	Have autonomy to perform my tasks
S18	Have social commitment
S19	Face constant challenges
S20	Be famous
S21	Be free to decide how to carry out my work
S22	Have better living conditions
S23	Have prestige
S24	Have a risky job
S25	Have a work environment where hierarchy is clear
S26	Have a creative job
S27	Have an innovative job
S28	Have an organized job
S29	Have a job that allows me to know new places
S30	Have a job that allows me to meet new people
S31	Have a job that allows me to express my knowledge
S32	Have a job that requires originality
S33	Have a socially recognized profession
S34	Compete with co-workers to achieve my professional goals

Figure 1. *Escala Revisada de Valor Relativo ao Trabalho (EVT-R)* [Revised Work Values Scale – WVS-R]

Source: Porto and Pilati (2010).

The second section addressed socio-demographic data. The study by Santos Neto and Franco (2010) was used to identify the cut-off period of the Y and Z Generations. It is an essentially Brazilian study and considers historical, political, and social elements that constituted these generations. The Y Generation includes people born between 1979-1992, and the Z Generation consists of those born after 1993. To ensure the participants' integrity and contribute to research that complies with ethical standards, this study was submitted to and approved by the Institutional Review Board CEP/SD, registered under No. 18268819.4.0000.0102.

4. Data Description and Analysis

4.1 Descriptive Results

The final sample was composed of 337 students: 246 from the Y Generation and 91 from the Z Generation; most were women (53.1%). Regarding ethnicity, most students reported being Caucasians (61.7%), followed by mixed-race (29.4%), Afro-descendants (5.9%), Asian descendants (2.7%), and Indigenous (0.3%). Table 1 presents information regarding the participants' profiles in the final sample.

Table 1
Respondents' Profile – Personal characteristics

Generation	**F**	**%**	**Teaching Experience**	**F**	**%**
Y Generation (1979-1992)	246	73%	Yes	185	55%
Z Generation (from 1993 on)	91	27%	No	152	45%
Gender	**F**	**%**	**Professional Experience**	**F**	**%**
Female	179	53.1%	Yes	303	90%
Male	156	46.3%	No	34	10%
Non-binary	1	0.3%	**Stage in the Graduate Program**	**F**	**%**
Rather not answer	1	0.3%	Taking classes	90	27%
Ethnic	**F**	**%**	I am about to present my pre-defense	72	21%
Asian descendant	9	2.7%	I have already presented my pre-defense	42	12%
Caucasian	208	61.7%	I am close to my final defense	56	17%
Indigenous	1	0.3%	I have already defended my thesis or dissertation	77	23%
Mixed-race	99	29.4%	**Financial Support during graduate program**	**F**	**%**
Afro-descendant	20	5.9%	Yes, during the entire program	104	31%
			Yes, during part of the program	57	17%
			No. I have never received financial support	176	52%

Note: F = frequency; % = percentage.

Source: study's data (2021).

Most respondents reported some teaching (55%) and professional experience (90%). Regarding the graduate program, 27% were taking classes, while 23% had already defended their thesis or dissertation. Additionally, most respondents (52%) reported never receiving any financial support. Table 2 presents the profile of the respondents considering the family context.

Table 2
Respondents' Profile – family context

Mother's education	**F**	**%**	**Father's education**	**F**	**%**
Did not complete middle school	64	19%	Did not complete middle school	77	23%
Completed middle school	31	9.2%	Completed middle school	37	11%
Did not complete high school	21	6.2%	Did not complete high school	27	8%
Completed High School	117	35%	Completed High School	105	31%
Higher education - College	52	15.4%	Higher education - College	51	15%
Higher education - Specialization	41	12.2%	Higher education - Specialization	27	8%
Higher education – Graduate degree	10	3%	Higher education – Graduate degree	11	3%
I do not know	1	0%	I do not know	2	1%
Financial responsibility at home	**F**	**%**	**Hours connected to the internet**	**F**	**%**
I am the only one responsible	77	23%	Less than 2 hours	17	5%
I am the primary provider but I receive some support	61	18%	From 2 to 6 hours	113	34%
I equally share responsibility with someone else	96	28%	From 6 to 10 hours	109	32%
I contribute with a small share	74	22%	From 10 to 16 hours	88	26%
No financial responsibility	29	9%	24 hours a day	10	3%

Note: F = frequency; % = percentage.

Source: study's data (2021).

As for the level of education, most of the respondents' mothers completed high school (35%). The same is observed for the fathers of most respondents; 31% reported high school was the highest educational level of their fathers. Furthermore, regarding financial responsibilities at home, most respondents (28%) equally shared financial responsibilities with another person, while (9%) reported no financial responsibility at home. Finally, even though the Y and Z Generations are considered hyper-connected to the internet (Grubb, 2016), only 3% of the participants remain connected 24 hours a day.

4.2 Analysis of Work Values Considering Socio-demographic Variables

Exploratory Factor Analysis (EFA) was implemented to verify the formation of factors from the EVT-R. Some criteria need to be verified to use the EFA: commonalities (above 0.50); KMO (above 0.70), Bartlett's sphericity test (p-value < 0.050), Measured Sampling Adequacy - MAS (above 0.7), and factor loadings (above 0.4) (Hair, Black, Babin, Anderson, and Thatam, 2009). The analysis of commonalities revealed that five variables (S1, S24, S28, S33, and s34) presented values below 0.5. For this reason, these variables were excluded for not having achieved the minimum acceptable parameter (Hair et al., 2009). The results showed a satisfactory KMO (0.886), Bartlett's sphericity test was significant (0.000), and MAS was considered excellent (between 0.824 and 0.946).

These results indicate that EFA fits the sample addressed in this study. Another criterion applied concerns the percentage of explained variance, which should be close to 60% (Hair et al., 2009). The EFA resulted in the formation of seven factors, which present items with a load greater than 0.4, which together explain 68.81% of the total variance explained. The method used to extract the factors was principal components with Varimax rotation. Later, reliability and internal consistency of the EVT-R were verified through Cronbach's alpha, which presented satisfactory values, above 0.7, in all the factors (Hair et al., 2009). Figure 2 presents the composition of factors, the name assigned to each, and the items composing it.

Factors	Description	Items
Factor 1 - Stimulation	Values related to innovation, challenges in life, and desirable changes.	S26; S27; S32; S30; S29; S31; S19
Factor 2 - Accomplishment	Values related to professional success, job satisfaction, satisfaction for the work performed, and competencies.	S13; S10; S11; S14; S4
Factor 3 - Safety	Values concerning financial return, job stability, and financial independence.	S8; S12; S5; S6; S22
Factor 4 – Universalism and Benevolence	Values that express concern with social aspects and with others.	S2; S3; S18; S15
Factor 5 - Power	Values related to social status, prestige, superiority, and influence over people.	S20; S23; S16
Factor 6 - Conformity	Values concerning hierarchy, acceptance of standards, work routine, and discipline.	S9; S7; S25
Factor 7 – Self-determination	Values concerning initiative, freedom of thought, and independence.	S17; S21

Figure 2. Composition and description of factors

Source: study's data (2021).

After verifying the formation of factors resulting from the values listed in the EVT-R, tests for differences between groups were performed to analyze differences in the respondents' work values. Hence, the normality test was performed to identify the statistical technique more appropriate for the sample under study. The normality of the factors formed by the EVT-R was verified using the Kolmogorov-Smirnov test. The test's results indicated that three factors were significant (p-value < 0.05). It means that these three factors were not normally distributed (Field, 2009). Even though three of the seven factors were not normally distributed, we opted for using the non-parametric test Kruskal-Wallis (K-W), considering that the entire data set is categorical, and three factors violated the assumptions of parametric tests.

The Kruskal-Wallis (K-W) test was used to check whether the respondents' work values and socio-demographic variables differed. Next, post-hoc, the Pairwise method was applied to compare all possible pairs within each group to control for Type 1 errors. Hence, the p-value is divided by the number of comparisons within each group, certifying that the Type 1 error is smaller than 0.05 (Field, 2009).

Each factor formed by the EVT-R was tested separately with the socio-demographic variables. The non-parametric tests for Factors 1 "Stimulation", 2 "Accomplishment", 3 "Safety", and 4 "Universalism and Benevolence" are presented in Table 3.

Table 3
Non-parametric test for Factors 1, 2, 3, and 4

NP test	Socio-demographic variables	Factors			
		S	A	S	UB
K-W	**Gender**	0.452	0.073	**0.001***	0.931
1 to 6 pairs					
Pairwise	(Female) and (Male)			**0.001***	
MR	*female*			187.44	
	male			148.06	
K-W	**Ethnicity**	0.398	0.477	0.624	0.723
K-W	**Mother's educational level**	0.468	0.375	0.727	0.531
K-W	**Father's educational leve**	0.594	0.128	0.781	0.398
K-W	**Financial responsibility at home**	**0.030***	0.424	0.679	0.785
1 de 10 pairs					
Pairwise	(I contribute w/ small share) and (primary responsible)	**0.037****			
MR	I contribute w/ small share	147.34			
	Primary provider but I receive some support	196.26			
K-W	**Financial support during graduate program**	0.512	0.482	0.101	0.421
K-W	**Hours connected to the Internet**	0.346	0.844	0.288	0.836
K-W	**Teaching experience**	**0.002***	0.882	0.279	0.289
1 pair					
Pairwise	(yes) and (no)	**0.002***			
MR	*yes*	183.56			
	no	151.28			
K-W	**Professional experience**	0.757	0.824	0.843	0.187
K-W	**Stage of the graduate program**	0.567	0.282	0.479	0.06

Note. (*) Significance at 5%;(**) adjusted significance; MR= *Mean Rank*; S = Stimulation; A = Accomplishment; S = Safety; UB = Universalism and Benevolence.

Source: study's data (2021).

The results of the K-W test indicated that the importance assigned to the values that composed Factor "Stimulation" is significantly different according to the level of "financial responsibility at home" and "teaching experience" of the respondents from the Y and Z Generations. The variable "financial responsibility at home" indicated significant differences between the group "I contribute with a small share" (MR = 147.34) and the group "I am the primary provider, but I receive some support" (MR = 196.26). As indicated by the Mean Rank, the respondents who reported being the main responsible for their home's expenses assigned greater importance to work values like innovation, life challenges, and desirable changes, which compose Factor "Stimulation".

Regarding the variable "teaching experience," the respondents with teaching experience (MR = 183.56) assigned greater importance to values associated with "Stimulation" at the work environment than those without teaching experience (MR = 151.28). In this same sense, Schwartz (2006) argues that educational experiences promote intellectual openness and flexibility, and these experiences broaden an individual's perspectives and guide toward stimulation values.

Additionally, the results showed differences regarding the importance assigned to work values composing Factor "Safety" regarding gender. Comparison between pairs showed significant differences between women (MR = 187.44) and men (MR = 148.06). It means that the female respondents assigned greater importance to values associated with financial return and job stability, which compose Factor "Safety," compared to the male respondents.

This result opposes the findings reported by Potrich, Vieira, Estivalete, and Andrade (2015), as they found no significant differences between gender and Factor "Safety." On the other hand, Estivalete, Lõbler, Andrade, and Visentini (2011) and Silva, Mendonça, and Zanini (2010) report that women tend to value financial stability, financial independence, and self-support, which concern Factor "Safety." These results may be linked to the increasingly important role of women in the family structure, as providers, or in composing family income.

The K-W test did not present significant differences for Factors "Accomplishment" and "Universalism and Benevolence." Table 4 shows the non-parametric tests for Factors 5 "Power," 6 "Conformity," and 7 "Self-determination."

Table 4
Non-parametric test for Factors 5, 6, and 7

NP Tes	Socio-demographic Variables	Factors		
		P	C	A
K-W	Gender	0.622	0.503	0.133
K-W	Ethnicity	0.359	0.392	0.923
K-W	Mother's educational level	0.315	**0.004***	0.902
1 to 28 pairs				
Pairwise	(Concluded H.E. - Specialization) and (concluded o H.S.)		**0.018****	
MR	*Concluded Higher Education - Specialization*		131.37	
	Concluded High School		191.83	
K-W	Father's educational level	0.729	0.377	0.847
K-W	Financial responsibility at home	0.358	0.714	0.239
K-W	Financial Support during graduate program	0.877	**0.001***	0.79
2 to 3 pairs				
Pairwise	(Yes. during part of the program) and (No. I have never received financial support)		**0.012****	
MR	Yes. during part of the program		144.74	
	No. I have never received financial support		187.55	
Pairwise	(Yes. during the entire program) and (No. I have never received financial support)		**0.007****	
MR	Yes. during the entire program		150.91	
	No. I have never received financial support		187.55	
K-W	Hours connected to the Internet	**0.045***	0.879	0.433
K-W	Teaching experience	0.961	0.332	**0.036***
1 par				
Pairwise	(yes) and (no)			**0.036***
MR	*yes*			179.07
	no			156.74
K-W	Professional experience	0.41	0.534	0.713
K-W	Stage of the graduate program	0.511	**0.019***	0.071
1 to 10 pairs				
Pairwise	(I am about to present my pre-defense) and (I am close to my final defense)		**0.009****	
MR	*I am about to present my pre-defense*		146.32	
	I am close to my final defense		203.84	

Note: (*) significance at 5%;(**) adjusted significance; MR= *Mean Rank*; P = Power; C = Conformity; A = Self-determination.

Source: study's data (2021)

The K-W test showed significant differences between the importance assigned to the values that compose Factor "Power" and "hours connected to the Internet." We verified no significant differences between the groups after comparing this variable between pairs though. It occurs because the comparison between pairs implies adjusting the p-value according to the number of comparisons within the group.

There were significant differences in the importance assigned to the values that compose Factor "Conformity," according to the "mother's educational level," "Financial support during the graduate program," and "stage of the graduate program." Significant differences of the variable "mother's educational level" were found between the group that "Completed higher education – Specialization" (MR = 131.37) and the group that "Completed high school" (MR = 191.83). This result shows that the respondents from the Y and Z Generations whose mothers completed high school only assigned greater importance to hierarchy and work values that compose Factor Conformity.

Ambiel, Ferraz, Pereira, Simões, and Silva (2019) noted that the support parents provide to their children's professional life differs according to the parents' educational and professional experience. Hence, parents with higher academic levels tend to help children choose their training path, often with the specialized support of psychologists to help them understand their career options and professional perspectives. Parents with lower educational levels do not seem to influence their children's professional choices or attitudes toward work though, because they often do not sufficiently understand the subject (Ambiel et al., 2019).

As for the variable "financial support during the graduate program," significant differences were found between the group who received financial support during part of the program (MR = 144.74) and the group who never received any financial support (MR = 187.55). In addition, the respondents who never received any financial support assigned greater importance to values associated with hierarchy and work standards, which compose Factor "Conformity," than the respondents who received financial during part of the program.

Another piece of information regarding the variable "Financial support during the graduate program" concerns significant differences between the group who received financial support during the entire program (MR = 150.91) and the group who never received any support (MR = 187.55). Likewise, those who never received any financial support during the graduate program assigned greater importance to values composing the "Conformity" Factor. Significant differences were found regarding the variable "stage of the graduate program" between the group "I am about to present my pre-defense" (MR = 146.32) and the group who "I am close to my final defense" (MR = 203.84). The respondents close to their final defense assigned greater importance to values related to hierarchy and work standards than those about to present their pre-defense.

Significant differences were also observed between the importance assigned to values that compose Factor "Self-determination" and the variable "teaching experience." These differences existed between the group with teaching experience (MR= 179.07) and without teaching experience (MR= 156.74). This result indicates that the respondents with teaching experience assigned greater importance to values concerning initiative, freedom of thought, and independence than those without teaching experience. Schwartz (2006) states that one's teaching experience promotes self-determination because the competencies necessary to deal with people through teaching promote values related to disposition and broaden expectations.

Therefore, the results confirm the hypothesis that work values differ according to an individual's socio-demographic characteristics. In this study, values differed according to gender, teaching experience, financial responsibility at home, mother's educational level, financial support during the graduate program, and the stage of the graduate program. All these characteristics impact some of the respondents' work values. Therefore, even though the study presents an intuitive hypothesis concerning Accounting graduate students from the Y and Z Generations, the results corroborate the studies addressing work values indicating that values differ according to individuals' circumstances of life (MOW, 1987; Schwartz, 2006; Parry & Urwin, 2011; Cavazotte et al., 2012).

Even though the Y and Z Generations have many similarities and share many behaviors (Kowske et al., 2010; Ozkan & Solmaz, 2015; Maloni et al., 2019), we should constantly assess differences between younger generations regarding work values. The reason is that understanding work values that change continually helps professors, graduate programs, and managers to understand the desires and preferences of these generations.

5. Conclusions

Work values reveal what is important for people and what motivates them. Additionally, values indicate behavioral changes and differences between groups in the work environment. Hence, this study's objective was to verify differences between the work values of Accounting graduate students from the Y and Z Generations, considering socio-demographic characteristics.

Students who identify themselves as female assigned greater importance to values concerning job stability and financial independence compared to students who identify with the male gender. This specific result corroborates other studies reported in the literature (Estivalete et al., 2011; Silva et al., 2010), showing that women tend to prioritize financial stability and self-support. The active participation of women in composing the family income and the space they have conquered in the job market may explain these findings (Estivalete et al., 2011). Likewise, significant differences existed between the groups that composed the variables "financial responsibility at home," "teaching experience," "mother's educational level," and "financial support during the graduate program."

The results show that socio-demographic variables cause significant variations in the work values of the Y and Z Generations. Even though the Y and Z Generations present similar characteristics (Ozkan & Solmaz, 2015; Maloni et al., 2019), there are differences when specific features are observed. These differences show how much the work environment is diversified and how life experiences impact work values, and consequently, the work environment.

This study's results show the relevance of academic studies addressing work values. Understanding the characteristics and work values of Y and Z Generations is the first step to understanding the varied work needs of these generations. Individual characteristics determine the opportunities and restrictions people face at work and their resources to deal with them. Finally, work values can influence skills development, opportunities, and even when to change jobs.

One of this study's limitations concerns a lack of studies discussing the generational topic together with work values, or work values in the field of Accounting Sciences, which hindered discussions and inferences of results. Additionally, future studies could investigate work values and how they interact with people's more specific characteristics, such as personality traits. These are also considered variables that can influence the individuals' choices and attitudes to the extent to which they predict work values.

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Earnings Management in Banks by Disclosing Adjusted Profit as Extraordinary Items

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Abstract

Objective: To investigate evidence of earnings management through the disclosure of adjusted profit (net profit minus extraordinary items) by Brazilian banks, considering that managers can exercise discretion when disclosing earnings to improve their remuneration or influence investors.

Method: Linear regression model estimates (fixed effects) were performed using quarterly data from 2016 to 2020 of 21 Brazilian banks listed in B3.

Results: Empirical tests revealed a positive association between extraordinary items and net profit, without the effects of adjustment of extraordinary items, confirming the hypothesis that these entities use adjusted profit disclosure as a mechanism for managing investor expectations, smoothing the recurring portion of profits.

Contributions: From a market perspective, this study contributes to alerting investors and regulators to consider adjustments in the disclosure of statements (Non-Gaap). As for international accounting standards, this study contributes to discussions regarding the IASB Exposure Draft ED/2019/7 - General Presentation and Disclosures by highlighting the practice of publicly-traded Brazilian banks in the disclosure of non-recurring items, which contributes to reducing information asymmetry in principal-agent relationships.

Keywords: Earnings Management. Banks. Extraordinary Items. Recurring Profits. Non-Gaap Measures.

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1. Introduction

This study investigates evidence of Brazilian banks' earnings management by disclosing adjusted profit (net profit minus extraordinary items). The assumption supporting this expectation is that managers can exercise discretion to manage and manipulate earnings due to incentives, such as achieving a better remuneration or even increasing the entity's market value (Cain, Kolev, & McVay, 2020). It may occur by classifying transactions that integrate net profit and which negatively impact an entity's performance, as extraordinary items; i.e., potential lack of neutrality (IASB, 2019). This study is inserted in the literature addressing non-GAAP financial measures – additional information not required by accounting standards – in the capital market, in which disclosing entities seek to influence investor expectations.

Earnings management has been the object of great interest in the accounting literature since the last years of the 20th century, as verified by surveys conducted by Schipper (1989), Healy and Wahlen (1999), and Dechow and Skinner (2000), significantly impacting the development of models to measure this practice – such as Jones (1991) and Dechow, Sloan and Sweeny (1995), for instance. The study conducted by Martinez (2001) in Brazil was a landmark, and the practice has gained relevance since then, as reported by Martinez (2013).

This type of research has addressed entities in the financial system, despite banks' regulated environment. The reason is that regulation is not sufficient to suppress the so-called agency conflicts and opportunities in the legislation or in the regulatory framework. These can be used in opportunistic and discretionary behavior, to manage earnings, involving both the smoothing of profits over periods and the intention to present better results and improve economic-financial indicators. In this context, the literature addressing earnings management in financial institutions has focused on the use of provisions for credit-risk associated losses (Alali & Jaggi, 2010; Curcio & Hasan, 2015; Dantas, Medeiros, & Lustosa, 2013; Kanagaretnam, Krishnan, & Lobo, 2010; Macedo & Kelly, 2016; Silva, Niyama, Rodrigues & Lourenço, 2018; Silva & Robles Júnior, 2018; Soedarmono, Pramono & Tarazi, 2017), and the fair value of financial instruments, including derivatives (Beatty & Harris, 1999; Beatty, Ke, & Petroni, 2002; Dantas, Galdi, Capelletto, & Medeiros, 2013; Dantas, Medeiros, Galdi, & Costa, 2013; Gabriel & Corrar, 2010; Shrieves & Dahl, 2003; Zhuang, 2016).

Even though the literature addressing earnings management is quite extensive, research assessing this practice through non-GAAP measures (especially the disclosure of revenue components as extraordinary items) to convey that such items will not recur in the future is still incipient. McVay (2006), Barua, Lin and Sbraglia (2010), Fan, Baura, Cready and Thomas (2010), Lopes, Pinheiro and Dias Filho (2014), and Li, Su, Dong, and Zhu (2018) are examples of studies addressing this aspect. The assumption underlying this relationship is that the content of disclosed financial information, including non-GAAP measures, influences the economic agents' decision-making and may implicate in wealth transfer. Therefore, entities would disclose such information in the number and quality necessary, considering that economic incentives are higher than otherwise (Suzart, 2015).

A potential lack of neutrality when addressing these items has drawn attention from the International Accounting Standards Board (Iasb), which has discussed this topic and shown a concern with the way entities disclose the information of unusual items. It varies significantly depending on the entity, while classification criteria are often unclear. For this reason, Iasb incorporated the Exposure Draft ED/2019/7 – General Presentation and Disclosures, reviewing the income statement model and forecast of disclosure of infrequent or non-recurring results. The purpose is to include this disclosure, which currently integrates non-GAAP measures, into accounting standards, with criteria to ensure a consistent and uniform pattern that enables comparisons over time and between entities.

This study serves to fill in a gap in the literature addressing earnings management in financial institutions by focusing on an alternative strategy to identify this opportunistic practice, i.e., using the classification of earnings components as extraordinary items. Even though it focuses on Brazilian banking entities, which present specific characteristics, this study contributes to creating expectations regarding the use of extraordinary items in other economic segments, considering that the response of other segments to the economic incentive of this practice may be similar. We expect to identify whether the financial statements of Brazilian banks present signs of bias when disclosing extraordinary items, which may compromise reliability and neutrality and induce stakeholders (especially shareholders, regulators, and creditors) to make wrong decisions. In addition, classifying certain items in the income statement as extraordinary conveys the message that they will not repeat in the following periods, influencing users' perception regarding what recurrent earnings would be.

Unlike the management of losses associated with credit risk or recognition of the fair value of financial instruments, for instance, investors may find it challenging to detect this type of earnings management (manipulation). It does not change net profit and can be a less costly form of earnings management (Barua, Lin, & Sbraglia, 2010). It is, therefore, a less obvious approach to earnings management in banks, in which managers would influence future earnings expectations without changing the measure of present earnings.

Empirical tests used the quarterly data (2016 to 2020) from 21 Brazilian banks publicly listed in *Bolsa Balcão (B3)*. The results revealed a positive association between extraordinary items and net profit before considering the reclassification of extraordinary items.

This evidence is compatible with assumptions of smoothing adjusted net profit – a proxy for what would be recurring earnings. It suggests that bank managers attempt to influence the expectations of users toward future earnings, using the "extraordinary items" classification to convey stability and predictability of the profits "ordinary" share", influencing expectations regarding future earnings, which is in line with existing literature. Additionally, this study's results reinforce the concern shown by Iasb with ED/2019/7 with the need to regulate the disclosure of infrequent or non-recurring events, establishing minimum criteria to ensure neutrality when disclosing statements.

2. Literature Review

2.1 Earnings Management in Financial Institutions

Considering that the objective of financial statements is to provide useful information to facilitate the efficient allocation of resources and stakeholders' decisions, managers have to exercise discretion and judgment to convey information regarding the companies' performance when there is asymmetry (Cohen & Zarowin, 2007). Discretion may be used to maximize value opportunistically though; that is, managers may have incentives to transmit information for their own benefit, choosing accounting methods and estimates that do not faithfully reflect underlying economic conditions, making room for earnings management (Araújo, Lustosa, & Paulo, 2018; Watts & Zimmerman, 1986).

Schipper (1989) defines earnings management as a purposeful intervention in the process of developing external financial statements to obtain a particular benefit. Alternatively, Healy and Whalen (1999) consider earnings management when managers make judgments based on the reports and structuring of transactions to change financial statements. Finally, Martinez (2013) explains that earnings management is intended to change the stakeholders' perceptions of an entity's activities or achieve a given outcome in agreements linked to the disclosure of accounting information.

The managers' opportunistic actions to the detriment of shareholders/investors may arise from conflicts of interest between agents (managers) and principals (shareholders/investors), explained by the Theory of Agency, the focus of which is to determine a more efficient contract to guide the principal-agent relationship (Eisenhardt, 1988). Jensen and Meckling (1976) predicted that agents are more likely to behave in line with the principal's interests by establishing an outcome-based contract, considering that the rewards for both agent and principal depend on the same actions. As a consequence, outcome-based contracts would be more effective in inhibiting managerial opportunism.

Dittmann and Maug (2007) state that to decrease the impact arising from agent-principal conflict of interests, shareholders started offering remuneration packages to managers, usually driven by results, to encourage the desired outcomes. Agents have preferences and tend to seek personal benefits, however, instead of effectively working to improve a company's value (Jensen & Meckling, 1976). Managers may use accounting information to manage earnings and achieve their desired compensation, achieving the performance the principal expected, only as of the result the management produced.

Earnings management in financial institutions may take many forms. For instance, through the provision for credit risk losses (PCL), by measuring the fair value of financial instruments and recognizing it as the period's revenue or as other comprehensive earnings, or by directly manipulating profits. This type of entity has an incentive to manipulate earnings because accounting profits convey information to investors and play an essential role in assessing an entity's performance and accounting-based contracting (Warfield, Wild, & Wild, 1995).

Various empirical studies sought evidence for earnings management in banking entities. For instance, Curcio and Hasan (2015) found evidence that it is an important factor affecting decisions concerning the provision for credit risk losses in European Union banks and other countries outside the European Union. Dantas, Medeiros, and Lustosa (2013) found that PCL is used to manage earnings. In the same line, though focusing on the presence of foreign capital, Macedo and Kelly (2016) report evidence that the level of profit has influenced PCL.

More recently, Silva and Robles Júnior (2018) confirmed the relevance of PCL, mainly in the results of financial institutions, because this provision works as a source that decreases credit portfolio and directly impacts these entities' results. Dantas, Medeiros, Galdi, and Costa (2013) also approached management in banks, seeking to verify whether there is discretion in recognizing and measuring derivative financial instruments for earnings management. They found that banks use this practice to smooth results, and it more frequently occurs among private institutions with smaller asset sizes and lower capitalization levels.

In turn, Koch, Waggoner, and Wall (2018) examined the impact of recent guidelines from banks in the United States to offset incentives in the banks' efforts to create countercyclical capital buffers to absorb losses during periods of economic weakness. The results suggest that earnings-based accounting guidelines create earnings management incentives consistent with countercyclical capital buffers. However, the parties that encourage payment of compensation in the form of equity-linked instruments may encourage senior managers to lower capital buffers during periods of higher earnings.

These are some examples of studies addressing earnings management in financial institutions, with studies more frequently exploring provisions for credit losses, an interest that is explained by the fact that these represent the main accruals in banks (Kanagaretnam, Lim, & Lobo, 2010), but also involving other types of operations or information.

2.2 Earnings Management through Adjusted Profit

Earnings management involving adjusted profit smoothing may include recognizing extraordinary items to influence earnings distribution (Lopes, Pinheiro, & Dias Filho, 2014). It appears, based on a preliminary analysis of the financial statements disclosed by Brazilian banks, that they classify revenues and expenses included in the income statement as extraordinary items, which, however, do not arise from financial intermediation or revenues deriving from the provision of services. Banks usually classify part of the legal civil and tax demands, for instance, expenses with layoffs and retirements, non-recurring tax credits, profit or loss on the sale of shares, among others, as extraordinary items, in line with these entities' quarterly reports.

This first impression suggests that transactions or events with a negative impact on an entity's results (expenses/losses) are more frequently classified as uncommon or infrequent than positive transactions and events (revenue/profits). It suggests a lack of neutrality in the approach, justifying and reinforcing the concern IASB expressed with ED-2019/7, which proposes regulating unusual or non-recurring items. Even though these are not currently regulated in accounting standards, extraordinary items are seen as items that do not result from an entity's intrinsic activity. Hence, they do not refer to a new classification as operational and non-operational because they are unpredictable. Unlike profits generated by continuous operation, these items are unique and contingency (Li, Su, Dong, & Zhu, 2018).

With Brazilian accounting converging to the IFRS standards, presenting extraordinary items in the income statement is now prohibited, as established by International Accounting Standards (IAS) 1 – Presentation of Financial Statements – paragraph 87: "An entity shall not present any items of income and expense as extraordinary items, either on the face of the income statement or in the notes". As from the 2020 annual statements, BCB resolution No. 2, from 2020, established the mandatory disclosure in the explanatory notes of recurring and non-recurring results separately.

This decision of the Central Bank of Brazil (BCB), in anticipation of the discipline intended by IASB, is in line with the statement by Flores and Lopes (2019) that after the publication of IFRS 14 – Regulatory Deferral Accounts, entities with regulated activities could adopt international standards for the disclosure of financial statements, together with statements with regulatory purposes. Thus, the publication of extraordinary items in the income statements became evident.

Some empirical studies address this topic. McVay (2006), for instance, examined the classification of extraordinary items in financial statements as a tool to manage earnings. Evidence shows that managers opportunistically transfer essential expenses to extraordinary items, and investors act surprised in the next period when these expenses return to core earnings in the following year. Using a similar methodology, McVay (2006), Barua, Lin, and Sbaraglia (2010) verified that managers also opportunistically classify operational expenses as discontinued operations to inflate basic core earnings and meet analysts' expectations. In continuation to these studies, Fan, Barua, Cready, and Thomas (2010) found further evidence of classification change when the ability of managers to manipulate accruals seems to be limited to meet gains benchmarks. Overall, evidence largely supports McVay's (2006) conclusion, according to which managers' involvement in changing classifications is not neutral. The previous study also shed light on the conditions under which managers are more likely to change classifications.

According to Andrade and Múrcia (2019), when recognizing extraordinary items, one must verify whether these are non-recurring and not related to the company's activities. These are posted after net profit, increasing or decreasing the final net profit, directly impacting reserves and dividend allocation. Earnings management arises from the discretion of professional judgment in disclosure, in which a company's performance would be presented to the market according to the agent's instead of the principal's interest.

Based on the previous discussion, the following hypothesis is proposed for empirical testing:

> ***H_1*: Publicly traded Brazilian banks use the disclosure of extraordinary items as an earnings management mechanism by smoothing adjusted profit measures – a proxy of recurring earnings.**

3. Methodological Procedures

3.1 Data

This study, focused on the banking segment, was intended to analyze the behavior of Brazilian banks listed on *Brasil Bolsa Balcão (B3)*. These entities are obliged to comply with the decisions of the National Monetary Council (CMN), as the BCB's regulatory and supervisory body, in addition to the Brazilian Securities and Exchange Commission (CVM).

According to Lopes, Pinheiro, and Dias Filho (2014), it is possible to consider that, in a well-regulated sector, earnings management assumes a differentiated behavior, considering there would be fewer incentives for management due to the quality and amount of information demanded by regulators. According to Pelucio-Grecco, Geron, Grecco, and Lima (2014), the Brazilian regulatory environment is the most efficient restrictive factor preventing earnings management. Additionally, specifically focusing on publicly traded banks makes sense because of the availability of data in the databases and the fact that these entities have more economic incentive to influence stakeholders' expectations, especially investors, regarding recurring profits.

It included data from 21 Brazilian banks, which had shares traded on B3 in June 2021, and information available in the Refinitiv Eikon and Economática databases. Therefore, quarterly information was collected between 2016 and 2020, totaling 420 observations (bank/quarter), three of which were excluded because of insufficient data regarding at least one of the variables composing the economic model adopted. Hence, this study resulted in an unbalanced panel of 417 observations (bank/quarter).

Data were divided into two blocks: (a) block 1, containing all the 417 bank/quarter observations reporting accounting balances; and (b) block 2, composed of 210 bank/quarter observations, which effectively disclosed income and expenses as extraordinary items, that is, observations presenting zero balances were excluded.

3.2 Operational Model

A linear regression model (3.1) for panel data was developed for the empirical tests, according to Marques (2000), who considers that longitudinal regression models provide a larger amount of information, more significant data variability, less multicollinearity between variables, a greater number of degrees of freedom, and more efficiency when estimating parameters.

$$IE_{it} = \beta_0 + \beta_1 LL_{it} + \beta_2 Tam_{it} + \beta_3 Cap_{it} + \beta_4 PIB_t + \beta_5 Sel_t + e_1 \quad (3.1)$$

Where:

IE_{it} : refers to extraordinary items reported by bank *i* in quarter *t*, relativized by total assets at the beginning of the period;

LL_{it} : refers to accounting net income – not considering the effects of classifying income components as extraordinary items – from bank *i* in quarter *t*, weighted by total assets at the beginning of the period;

Tam_{it} : a measure of entity's size, represented by the natural log of bank *i*'s total assets in quarter *t*;

Cap_{it} : capitalization ratio, represented by the ratio between equity and total assets of bank *i* in quarter *t*;

PIB_t : Gross Domestic Product variation in quarter *t*;

Sel_t : the Brazilian economy's basic interest rate, Selic, in quarter *t*.

The variable of interest of the model used to test the hypothesis is net profit, without considering the effects of classifying extraordinary items, including all the study's observations (***LL***). The relationship between this variable and the dependent variable, represented by extraordinary items (***IE***), will allow us to reach conclusions regarding earnings management with the purpose of adjusted profit (***LLaj***), considering the assumptions highlighted in Figure 1.

(=) Net Profit ***LL***		
If ***LL*** is low or negative	More negative ***IE*** (expenses) are recognized in the income statement	***IE*** with a negative sign in the adjusted profit improves (increases) adjusted profit – a proxy of recurring revenue
If ***LL*** is too high	More positive ***IE*** (revenues) are recognized in the income statement	***IE*** cwith a positive sign in the adjusted profit worsens (decreases) adjusted profit – a proxy of recurring revenue
(=) Adjusted net income in the period ***LLaj***		

Figure 1. Profit adjusted according to extraordinary items to manage adjusted profit

Hence, there will be evidence of earnings management by smoothing adjusted net profit using extraordinary items (*LLaj*) if a positive relationship is found between the dependent variable (*IE*) and accounting net profit (*LL*) before considering the effects of classifying extraordinary items. This positive association, the higher (lower) the net profit, the higher (lower) the magnitude of values classified as extraordinary items, results in smoothing adjusted net profit – a proxy of recurring profit–as hypothesized in *H1*. Therefore, a bank entity conveys to investors, regulators, and depositors the message that its performance is stable and predictable, conferring trustworthiness and credibility.

Additional explanatory variables were included to improve the model's specification and control for the entity's characteristics concerning size (*Tam*) and capitalization index (*Cap*), level of economic activity (*PIB*), and the basic interest rate level (*Sel*) on the level of disclosure of extraordinary items.

The *Tam* variable was included because larger entities require more external resources to finance their investments and, therefore, seek to present better performance, which may encourage the opportunistic use of extraordinary items (Barros, Soares, & Lima, 2013; Cain, Kolev, & McVay, 2020). Additionally, considering that larger entities perform more diversified activities, it is natural to expect that they register a larger relative share of extraordinary items. As for the expected sign, considering that extraordinary items can be either income or expenses, it may be positive or negative. Therefore, the most important aspect for this study's purposes is to control for these effects so as not to compromise conclusions regarding the variable of interest.

The explanation for incorporating the *Cap* variable is that the banks' level of capital may influence the disclosure of extraordinary items. Therefore, in theory, a positive sign is expected for the relationship between the bank's level of capitalization (*Cap*) and values recognized as extraordinary items (*IE*). The reason is that banks with higher equity levels would have fewer incentives to improve adjusted net profit (*LLaj*), decreasing the likelihood of opportunistic demands (Dantas & Medeiros, 2015) – in this case, less need to inform a larger share of expenses as extraordinary items.

In the case of the level of economic activity (*PIB*), Dantas, Medeiros, Galdi, and Costa (2013) explain that demand for credit operations increases in times of greater economic dynamism. Hence, assuming that under challenging times, these demands fall, PIB may influence managers' opportunistic behavior when s/he seeks to maintain his/her earnings levels, which would lead to a greater search for accounting manipulation opportunities, among which recognizing a higher number of expenses as extraordinary items. Hence, a positive sign is naturally expected for the relationship with the dependent variable, *IE*.

Regarding the *Sel* variable, a change in the economy's basic interest rate, Selic, is expected to affect the market agents' expectations. Moreover, as an instrument of economic policy, it directly affects market liquidity (Dantas, Medeiros, Galdi & Costa, 2013), which may encourage, for instance, banks to recognize (or not) *IE* when there is a lack (or excess) of demand for liquidity, explaining the convenience of incorporating this control, though, it is not possible to specify the sign expected.

Sensitive analysis was carried out by estimating model (3.1) with all the bank/quarter observations; with/without treating outliers; with winsorization at 5%; and only with the bank/quarter observations in which the value of the extraordinary items differs from zero, also with/without winsorization at 5%. The objective was to verify whether the results were consistent in all the cases.

4. Analysis of Results

4.1 Descriptive Statistics

The first stage of the empirical tests consisted of calculating the model's (3.1) variables for blocks 1 and 2, whose descriptive statistics are presented in Table 1.

Table 1
Descriptive statistics of model (3.1) and composition of IE according to block

Panel A: Descriptive statistics of the model's continuous variables						
			Block 1			
Variables	**N**	**Mean**	**Median**	**Standard Deviation**	**Minimum**	**Maximum**
IE	417	-0.0003	0.0000	0.0007	-0.0022	0.0075
LL	417	0.0051	0.0035	0.0085	-0.0515	0.0542
Tam	417	24.1571	23.8814	2.2882	18.2983	28.3338
Cap	417	0.2090	0.1047	0.2658	0.0461	0.9974
PIB	417	0.0016	0.0040	0.289	-0.0916	0.0776
Sel	417	0.0189	0.0158	0.0094	0.0047	0.0348
			Block 2			
Variables	**N**	**Mean**	**Median**	**Standard Deviation**	**Minimum**	**Maximum**
IE	210	-0.0052	-0.0004	0.0009	-0.0022	0.0075
LL	210	0.0037	0.0031	0.0028	0.0000	0.0208
Tam	210	24.1548	23.8796	1.6420	22.1330	28.2020
Cap	210	0.1013	0.0954	0.0343	0.0461	0.1888

Panel B: Percentage of IE in the blocks' composition		
	Block 1	**Block 2**
Without *IE*	47.00%	-
Negative *IE* (Mostly Expenses)	49.88%	94.12%
Positive *IE* (Mostly Income)	3.12%	5.88%

Note: *IE*: extraordinary items; *LL:* accounting net profit, without the effects of the reclassification of extraordinary items; *Tam :* entity's size; *Cap*: capitalization index; *PIB*: Gross Domestic Product variation; *Sel*: the Brazilian economy's basic interest rate, Selic

The descriptive statistics of block 1's continuum variables (Panel A) reveal that the value of extraordinary items (*IE*) per quarter ranges from -0.22% and 0.75% of the assets, with dispersion equivalent to 0.07%. Measures of central tendency, mean and median, close to 0%, reveal an expressive number of banks presenting extraordinary items equal to zero. This is also observed in Panel B, in which approximately 47% of the bank/quarter observations composing block 1 present extraordinary items with a value equal to zero. These zero values are possibly explained by the fact that in certain quarters: (i) there were no events classified as extraordinary or (ii) extraordinary events did occur, but the managers responded to incentives and did not disclose them at discretion. Regarding extraordinary items different from zero, Panel B, block 1 shows that most of the extraordinary items concerned net expenses, suggesting that banks generally recognize a larger number of expenses, resulting in increased adjusted net profit (*LLaj*) in relation to accounting net profit (*LL*).

Panel A in block 2, in which bank/quarter observations with zero value of extraordinary items are excluded to identify the observations that effectively represent extraordinary items of income and expenses, shows that measures of central tendency, mean and median, indicate that extraordinary items correspond to -0.52% and -0.04% of the banks' assets, respectively. Note that extraordinary expenses were more frequent than income, as the negative sign shows. As data in block 1, this prevalence of extraordinary expenses in block 2 is corroborated by Panel B, in which 94.12% of the extraordinary items disclosed by the banks are negative, suggesting they are improving adjusted net profit (*LLaj*) in relation to accounting net profit.

In the case of net profit (*LL*), the descriptive statistics (Panel A) show that quarterly data indicate an average return on assets around 0.51% and 0.37% per quarter, with a dispersion of 0.85% and 0.28% in Blocks 1 and 2, respectively. Extreme situations of positive returns (5.42% and 2.08% per quarter) in both blocks, or negative (-5.15% per quarter) for block 1, and null return for block 2, on assets, are either infrequent or neutralized by observations with signs with an inverse direction. In any case, the statistics show that these entities record an average return of 2.04% and 1.48% per year (annualized quarterly average). This indicates that the average return in block 2, presenting only bank/quarter observations with non-zero extraordinary item balances, is smaller than the set of observations (block 1). This situation suggests that because banks have smaller average returns, those with non-zero extraordinary item balances may have more incentives to use opportunistic extraordinary items, which explains smoothing adjusted net profit (*LLaj*).

Regarding the variable representing the institutions' size (*Tam*), descriptive statistics reveal a marked dispersion in both blocks, showing the differences between the entities' size – which is a characteristic of the Brazilian banking market, with few large publicly traded banks such as Banco do Brasil, Itaú, Bradesco, and Santander.

As for the capitalization index (*Cap*), data show that the banks have 21% of capitalization level on average in block 1 and 10% in block 2. Statistics show in the distribution tails banks with almost integral participation (99%) of their own resources in the financing of their total assets and banks with 4.6% share in block 1. In block 2, descriptive statistics reveal that, in the cases in which there is the effective disclosure of extraordinary items (positive or negative), the capitalization index is smaller. This suggests that these entities have a greater need to manage adjusted net profit to convey they can generate results and offset their lower level of capital.

Concerning macroeconomic variations, *PIB* data reveal the economic situation in Brazil in the period under study (2016-2020), characterized by times of economic decline and small growth, reflecting an average growth close to zero. Furthermore, in the case of the *Sel* variable, data show when the basic interest rate decreased between 2016 and 2020.

4.2 Correlation Matrix and Univariate Analysis

The second stage of tests comprises an analysis of Pearson's correlation matrix between the model's (3.1) dependent and independent variables. The results are summarized in Table 2.

Table 2
Pearson's correlation matrix between the model's (3.1) variables

	Bloco 1						**Bloco 2**					
	IE	*LL*	*Tam*	*Cap*	*PIB*	*Sel*	*IE*	*LL*	*Tam*	*Cap*	*PIB*	*Sel*
IE	1.00						1.00					
LL	**0.08***	1.00					**0.13****	1.00				
Tam	-0.02	0.02	1.00				-0.07	**-0.16****	1.00			
Cap	**0.13*****	**0.56*****	**-0.47*****	1.00			-0.10	**0.41*****	**-0.39*****	1.00		
PIB	0.02	0.03	0.00	-0.00	1.00		0.06	-0.01	0.02	-0.01	1.00	
Sel	0.03	0.00	-0.05	0.03	-0.08	1.00	0.04	0.03	-0.09	0.05	-0.11	1.00

Note: IE: extraordinary items; LL: accounting net profit, without the effects of reclassifying extraordinary items; Tam: entity's size; Cap: capitalization index; PIB: Gross Domestic Product; Sel: the economy's basic interest rate, Selic. Statistical significance level: *** 1%; ** 5%; and * 10%.

The univariate analysis – correlation between the model's (3.1) dependent variable *IE* and independent variables – initially reveals a positive correlation with the variable of interest *LL*, 8% and 13% in both blocks. This shows the first evidence of what hypothesis *H1* predicts, that is, the higher (lower) the net profit, the greater (smaller) the amounts recognized as extraordinary items, supporting the expected smoothing of the recurring earnings proxy. However, for the independent control variables – *Tam, PIB*, and *Sel* –, the correlation coefficients with the dependent variable, *IE*, are little expressive, except for *Cap* in block 1, which shows a positive and significant correlation.

Notwithstanding these first indications provided by the univariate analysis, the multivariate analysis more conclusively assesses the relevance of the independent variables of interest and control variables to explain the level of values recognized as extraordinary items in Section 4.3.

As for the correlation between independent variables, the negative correlation between *Sel* and *PIB* is noteworthy. It indicates a negative relationship between the economy's basic interest rate level and the level of economic activity in the period under study (2016-2020), suggesting that the interest rate influenced the level of economic growth – the lower the interest rate, the higher the level of economic activity.

According to the practical rule suggested by Gujarati (2006), the correlations presented in Table 2 are not sufficient to reach the threshold that would configure a high risk of multicollinearity. The author notes that this risk exists when the correlation between independent variables is at least 0.8. Additionally, the statistics of Variance Inflation Factor (VIF) tests revealed that the maximum value found was 2.21 and 1.17, in blocks 1 and 2, respectively, confirming and reinforcing evidence found in the correlation matrix and removing the risk of multicollinearity in the estimations.

4.3 Model Estimation

Tests were performed to choose the most appropriate estimation method for the multivariate analysis in blocks 1 and 2. The Chow test's result, which rejects the null hypothesis, indicates that data modeling is the most suitable for both data sets. The Breusch-Pagan test confirms this result as it rejects the hypothesis that the Pools model offers appropriate estimators; that is, there are statistically significant differences (at 5% level) between the companies over time that justify the adoption of panel modeling. Then, the Hausman test was performed to verify which model, fixed or random, would be the most appropriate. The results indicate that the hypothesis concerning the adequacy of the correction model, random effects, was rejected, revealing that the most appropriate estimation is through the fixed effects model. Hence, the model (3.1) was estimated using sectional fixed effects, combining the complete data set (block 1) restricted to the observations with non-zero extraordinary items (block 2), without treating outliers and with winsorization of data at 5%.

Table 3
Results of the model (3.1) estimation using sectional fixed effects

Model:	$IE_{it} = \beta_0 + \beta_1 LL_{it} + \beta_2 Tam_{it} + \beta_3 Cap_{it} + \beta_4 PIB_t + \beta_5 Sel_t + e_1$			
Variables:	**Block 1**		**Block 2**	
	(1)	**(2)**	**(3)**	**(4)**
C	-0.0067	0.0076	**0.0212****	0.0183
	(-1.06)	(-1.01)	(1.19)	(1.10)
LL	**0.0121***	**0.0282*****	**0.2147*****	**0.2200*****
	(1.81)	(2.83)	(6.37)	(6.66)
Tam	0.0003	-0.0003	-0.0008	-0.0007
	(1.06)	(1.00)	(-1.15)	(-1.06)
Cap	**-0.0022*****	**-0.0018***	**-0.0268*****	**-0.0256*****
	(-2.98)	(-1.88)	(-4.04)	(-4.13)
PIB	0.0008	0.0038	0.0028	0.0027
	(0.75)	(0.37)	(1.46)	(1.43)
Sel	**0.0069***	0.0055	-0.0034	-0.0022
	(1.76)	(1.31)	(-0.29)	(-0.20)
N	417	417	210	210
R^2	0.2513	0.028	0.2215	0.0017
F	5.26	2.16	13.70	11.65
Prob(F-stat)	0.0000	0.0581	0.0000	0.000

Notes: *IE*: extraordinary items; *LL*: accounting net profit, without the effects of reclassifying extraordinary items; *Tam*: entity's size; *Cap*: capitalization index; *PIB*: Gross Domestic Product variation; *Sel*: the economy's basic interest rate, Selic. Statistical significance level: *** 1%; ** 5%; and * 10% (two-tailed). Estimations: (1) complete data set, without treating outliers; (2) complete data set with winsorization at 5%; (3) data restricted to non-zero *IE*, without treating outliers; and (4) data restricted to cases with non-zero *IE* and winsorization at 5%.

Considering the model estimations, the results concerning the variable of interest revealed a positive and statistically significant relationship between the variable of interest *LL* and the dependent variable *IE*. This relationship existed regardless of whether the complete data set was considered or whether data were restricted to cases where extraordinary items were different from zero, or yet, whether outliers were treated or not with winsorization. This empirical evidence shows that the higher (lower) the accounting net profit before considering the effects of extraordinary items, the larger (smaller) is the amount classified as extraordinary items, impacting adjusted net profit – a proxy of recurring income measure. These findings corroborate hypothesis *H1* that managers would classify income items (income and expenses) as extraordinary items to manage earnings, smoothing adjusted profit, after excluding the effects of share that would be transitory.

The underlying assumption is that bank managers seek to influence the users' expectations toward future earnings, using the classification of "extraordinary items" to communicate greater stability and predictability of a profit's "ordinary" share. Hence, even if the net profit measure *per se* varies considerably, this "adjusted" measure is communicated as part of non-recurring earnings. The dimension and sign of this reclassification depend on the need and convenience of conveying this smoothing, giving the various stakeholders – including investors, depositors, and bank regulators – a perception of greater safety and financial strength.

This empirical evidence is compatible with the results reported by McVay (2006), that managers opportunistically transfer essential expenses to extraordinary items and later do the inverse path, according to their convenience. These findings also corroborate Fan, Barua, Cready, and Thomas (2010), who found evidence that classification was changed when there were restrictions for managers to meet benchmark gains by manipulating accruals.

Among the causes of such practice in the Brazilian market, the principal *versus* agent conflict of interest is worth noting, considering that adjusted profit is frequently one of the performance measures used to calculate the agents' variable remuneration. However, there is no regulation regarding how these bonuses are calculated, as the standards dealing with related parties only provide instructions on how to disclose the amount paid to managers.

Note that the coefficients of the variable of interest (*LL*) of estimations exclusively performed with data from non-zero extraordinary items (columns 3 and 4) are higher than the complete data set (columns 1 and 2) and estimations with winsorized data (columns 2 and 4) are higher than data without treatment of outliers (columns 1 and 3). It shows that the more restricted the observations regarding the recognition of extraordinary data, the more pronounced the relationship with the dependent variable, *IE*, and the variable of interest, *LL*. It corroborates the findings, revealing the consistency and persistence of results, regardless of the selection criteria and data treatment. Moreover, it increased the relevance of coefficients of interest when more restricted criteria are adopted for the treatment of data.

Regarding the control variables, the entities' size (*Tam*) did not significantly affect the dependent variable in any of the four estimations. Regarding the capitalization index (*Cap*), the results concerning the four estimations indicate that the financial institutions' level of capitalization negatively impacted the recognition of extraordinary items, contradicting the expectations predicted by Dantas and Medeiros (2015). The negative relationship indicates that banks presenting higher capital indexes are more likely to recognize negative than positive *IE*. This relationship is not consistent with the fact that banks with higher capitalization levels would have less incentive to improve adjusted net profit (*LLaj*).

As for the macroeconomic variables representing the level of economic activity (*PIB*) and the economy's basic interest rate (*Sel*), the results show that, in general, these variables do not explain the entities' disclosure of part of results as extraordinary items. Furthermore, it reveals that macroeconomic conditions do not influence the behavior of the values classified as transitory.

The set of results concerning the control variables helps evidence the relevance of the level of accounting net profit as determining the disclosure of extraordinary items, considering the little or no representativeness of control variables.

5. Final Considerations

This study's objective was to investigate evidence of Brazilian banks' practice of earnings management by classifying certain result items as "extraordinary" to influence stakeholders' expectations regarding the persistence of profits in the future.

The results revealed a positive association between accounting net profit and extraordinary items, suggesting that managers use the classification of extraordinary items to smooth the proxy of recurring profit, conveying the stability of future earnings. Another important finding refers to the fact that banks more frequently classify expenses as extraordinary items.

In addition to improving the market's perception, displaying better financial performance corroborates the conflict of interest described in the Theory of Agency because adjusted profit is frequently used as a measure of performance for the managers' (agents) variable remuneration. However, entities do not usually disclose performance measures used to pay managers because there is no regulation for disclosing the parameters used in the calculation.

This study contributes to the development of literature addressing the use of non-GAAP measures in the capital market, in which disclosing entities seek to influence the investors' expectations by using measures not regulated by accounting standards and focusing on the disclosure of extraordinary items by Brazilian banks. It also contributes to discussions regarding the ED/2019/7 published by IASB, as it shows the importance of a guideline for extraordinary items to alleviate the problem of information asymmetry. Finally, the findings also improve knowledge regarding how earnings management occurs and its determinants in the banking industry, highlighting the possibilities to analyze and use information concerning extraordinary items.

This study's limitations include the population size, as there is a restricted number of publicly-traded Brazilian banks with data available in the consulted database; *Refinitiv Eikon* may promote some adjustment in the classification of extraordinary items, which may present some differences in relation to what is disclosed by the banks in non-GAAP measures in addition to financial statements. Additionally, the findings are restricted to the Brazilian banking market, even though it presents evidence that may also occur in other economic segments.

Future studies addressing this subject could assess the effects of the disclosure of recurring and non-recurring items among non-financial companies and verify the extent to which such disclosures influence earnings management as reported in this study.

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I want, I can, but am I able to? The Impostor Phenomenon among graduate students from the business field

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Abstract

Objective: To identify the factors characterizing the Impostor Phenomenon among graduate students in the business field.

Method: This study addressed the valid responses of 613 students in the pretest and 1,816 students in the final data collection. Data were analyzed using descriptive statistics, Confirmatory Factor Analysis, and Exploratory Factor Analysis.

Results: The indicators reveal that CIPS has two dimensions. One factor characterizes falsehood and underestimation feelings, and the other is related to luck or chance. The results also indicate that impostor feelings in the business field are more frequently related to falsehood and underestimation than to attributing success to luck or chance.

Contributions: Identifying the Impostor Phenomenon is essential to shape these feelings and prevent restricting and hindering students' academic performance and professional career.

Keywords: Impostor Phenomenon; Graduate Programs; Business Field.

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1. Introduction

Impostor Phenomenon (IP) is the term used to characterize individuals who attribute their success to luck or some other factor other than their own physical or intellectual capacity. This phenomenon arouses feelings of insecurity in successful individuals, making them believe that success is only achieved through luck or grandiose efforts (Clance & Imes, 1978; Cisco, 2020). This topic has gained attention after world celebrities (Celebrity Insider, 2017; Idiva, 2019; Marie Claire, 2019) and executives of large companies (Entrepreneur, 2017) publicly admitted that they experience impostor feelings. Experts have also gone public to warn that the "price could come in the form of stress; getting stuck in a job you've long outgrown; losing out on promotions, valuable learning experiences or connections; and burnout. And in almost all cases, there is a financial cost." (Young, 2019, n. p. published on The Enterprises Project, 2019).

IP feelings often manifest during graduate studies as students are involved in an environment that requires the development of creative activities, competition, meeting deadlines, and dealing with third parties evaluations, which outline a context that favors the manifestation of impostor feelings (Levecque et al., 2017; Cisco, 2020). Scientific studies in the academic milieu addressing IP along the lines of the survey carried out by Thompson, Davis, and Davidson (1998) are incipient and seldom explored, despite intensifying demands to investigate this phenomenon. Evidence from doctoral or master's programs is still embryonic and insufficient to understand IP and its consequences on this level of education (Craddock, Birnbaum, Rodriguez, Cobb, & Zeeh, 2011).

Research in the business field, composed of Business Administration, Accountancy, and Economics, is even scarcer, though studies report some peculiar behavior of students in this field compared to students from other programs (McCabe, Butterfield, & Treviño, 2006). Students in the business field tend to manifest IP because of the competitiveness and demands for efficiency that permeate this field of activity. This concern is relevant because students will become managers, professors, or leaders soon, and the college context is expected to support the development of these individuals' responsibility and leadership skills (Freire, 2014); hence the importance of directing attention to potential intervention strategies.

Additionally, excessive expectations from families, professors, and institutions toward higher education students may maximize impostor feelings. This problem is even more prominent in graduate programs because the students' different experiences and backgrounds may favor feelings of inadequacy and the emergence of IP (Craddock et al., 2011). Therefore, IP is characterized as an important problem to be investigated with a view to its identification, and actions are devised to help students improve their levels of well-being and assimilate their intellectual capacity and success. Strategies can be created to promote the academic performance and wellbeing of graduate students and enhance the environment of graduate programs. Therefore, this study aims to identify the factors that characterize the Impostor Phenomenon among graduate students in the business field.

This study's findings indicate that one in every five participants experience frequent or intense impostor feelings. These feelings involve underestimating one's skills and competencies or attributing success to luck. Hence, this study's relevance lies in the fact that, at the end of a graduate program, students are expected to have developed the ability to analyze and solve complex problems, manage projects, apply critical thinking, leadership skills, and be able to manage time (Andrade, 2018). Furthermore, these skills are directly or indirectly linked to one's self-assurance, proactivity, and having positive attitudes in a social environment. IP affects one's confidence though. Hence, identifying these feelings among students and identifying them timely is vital.

This study also contributes to the methodological field, as it presents the translation and validation of the CIPS (Clance, 1985), an instrument developed to measure IP. Hence, it is a direct contribution that enables future studies to analyze the phenomenon. This study also contributes to broadening investigations addressing the Impostor Phenomenon in the context of graduate programs.

2. Impostor Phenomenon: from its origin to consequences

The term Impostor Phenomenon originated in Clance and Imes' studies, in which the author monitored more than 150 successful women for approximately five years. Even though these women worked in varied professions and held undergraduate and graduate degrees, they doubted themselves, were insecure and experienced guilt for their success (Clance & Imes, 1978; Taylor, 2009). Their findings suggest that the main characteristics of impostors include the fear that their superiors will eventually realize that their competence levels are not as high as they initially thought, and difficulty in internalizing their success, which they believed was only achieved by a struck of luck or arduous work (Clance & O'Toole, 1987).

Clance and Imes (1978) initially mapped four symptoms frequently reported: (i) generalized anxiety; (ii) lack of self-confidence; (iii) depression; and (iv) frustration when unable to meet self-established standards and goals. Later, Clance and O'Toole (1987) reported IP is associated with different personality traits and feelings, compiling the main characteristics present among those experiencing intense impostor fears, namely: [1] Introversion; [2] Generalized anxiety; [3] Difficulty accepting compliments; [4] Overestimating others' skills and underestimating their own; [5] Feeling guilt for the success achieved; [6] Inadequate definition of intelligence; [7] Fear of evaluation; [8] Fear of failing; [9] Environmental and family messages; and [10] Impostor cycle.

These characteristics indicate that introverted people tend to externalize behaviors that diverge from their inner feelings. As a result, the personality identified in social relationships is not aligned with one's self-perception (Chassangre & Callahan, 2017). This dissonance characterizes one of the main elements of the Impostor Phenomenon: the perception of fraud. Introverts also have low self-confidence and self-esteem and experience greater anxiety that favors impostorism (Clance, 1985). In this sense, Kets de Vries (1989, p. 21-22) describes impostors as highly sensitive to rejection, excessively afraid of social failure, and suffering from persistence dependence, in addition to perfectionist expectations. It is as if they incorporated their parents' excessive expectations that were never properly "metabolized". As a result, they suffer from generalized anxiety, lack of self-confidence, and depression in many cases.

Low self-esteem impedes these individuals from accepting compliments and internalizing their success. When third parties recognize their competencies, impostors see this recognition as "an indication that they have managed to deceive others into believing that they are successful" (Sonnak & Towell, 2001, p. 864). Feeling insecure about one's own intellectual capacity lead individuals to overestimate other people's skills and underestimate their own, perpetuating low self-esteem and feelings of inferiority (Holmes et al., 1993; Chassangre, 2014). Sonnak and Towell (2001) present evidence that self-esteem is linked to IP in which an inverse relationship is established; the more significant the IP, the lower one's self-esteem.

Additionally, even though success is not internally assimilated, the recognition of success plays an ambiguous role in the lives of those experiencing impostor feelings. Even though they externally refuse compliments extolling their competencies, when they are recognized and complimented, these individuals believe they are creating a social image and deceiving people (Ferrari & Thompson, 2006). Part of this behavior derives from how these individuals assimilated the concept of intelligence. Usually, intelligence is distorted as a fixed entity based on achieving goals to prove one's intellectual capacity to others. When people with IP fail, they tend to feel inadequate, ashamed, and anxious and experience lower levels of wellbeing and self-esteem. Therefore, these people avoid situations in which they are evaluated. Those who do not experience impostorism believe that intelligence is malleable, something that can be improved with learning and intellectual development, in which failures are expected and even strengthen resilience and personal growth (Chassangre & Callahan, 2017). Part of this behavior originates from a family environment permeated by high demands and success expectations (Langford & Clance, 1993).

Attention focused on the social perception of one's image, instead of on the development of tasks, traps individuals with IP in a cyclical behavior that perpetuates and reinforces impostor feelings (Clance, Dingman, Reviere, & Stober, 1995). This behavioral pattern is called the "Impostor Cycle" and involves diverse characteristics and actions manifested throughout one's life (Thompson et al., 1998). Figure 1 presents this cycle's phases.

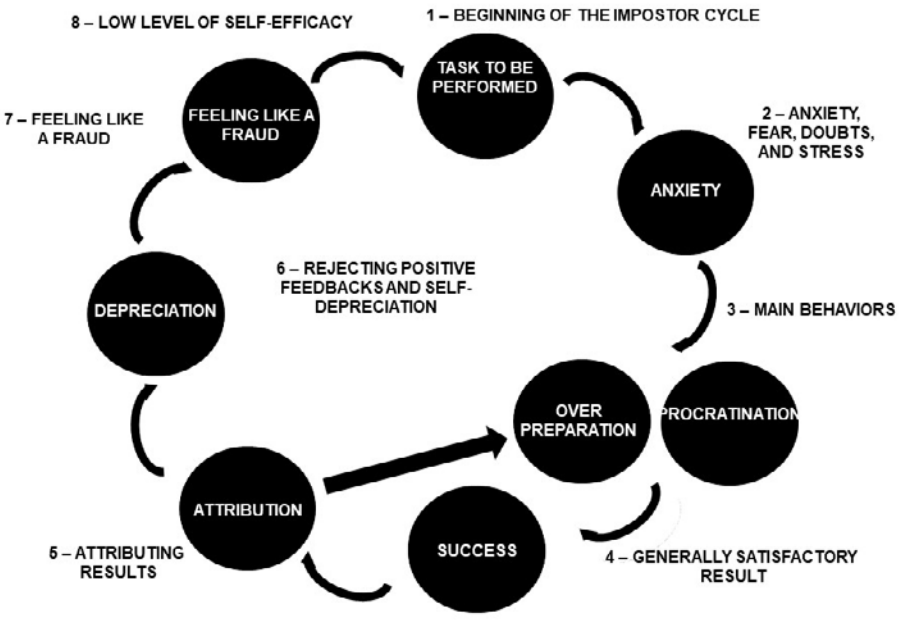

Figure 1. Impostor's Cycle

Source: Chassangre and Callahan (2017, p. 102) adapted from Clance (1985).

Figure 1 shows that whenever a new task is assigned, impostors experience anxiety (Chassangre & Callahan, 2017), insecurity, and fear (Clance, 1985) that they will not successfully overcome challenges. These individuals usually respond to the high levels of anxiety and insecurity in one of two ways: overpreparation or procrastination followed by heightened task dedication (Thompson et al., 1998).

Overpreparation is characterized by workaholic behavior, including many hours dedicated to work and/or study while forgoing other activities to overcome illegitimacy feelings, showing perfectionist tendencies. On the other hand, procrastination consists of low commitment toward an established goal and the desire to protect self-esteem by delaying a given task (Chassangre & Callahan, 2017). When close to the deadline, the procrastinating individual dedicates him/herself intensively to complete the task. Therefore, success is assimilated because of the attitude adopted to fulfill the task, either through overpreparation or procrastination followed by intense dedication. When the individual successfully performs the task, s/he tends to not recognize it as legitimate (Thompson et al., 1998). Success is credited to great effort if one is overprepared for a task or luck or the ability to manipulate the environment if one procrastinates (Thompson, Foreman, & Martin, 2000). Therefore, when complimented, these individuals tend to depreciate their skills and reject positive feedbacks because they do not feel deserving of recognition. If success is not achieved, then the feeling of deception, self-handicapping, or self-sabotage may be fostered and adopted to justify failures.

Thus, in any case, in the last stage of the cycle, these individuals feel like a "fraud" and do not internalize their achievements as a result of their competence and intelligence, fearing they will be unmasked and seen as incompetent (Clance & Imes, 1978; Chassangre, 2014). Therefore, "As new achievement situations are encountered, anxieties and self-doubts return and the cycle begins anew." (Thompson et al., 1998, p. 382), reinforcing their beliefs that they are incapable of succeeding (Chassangre, 2014).

Clance and Imes (1978) note that minimizing impostor feelings is a slow process because the individual needs to modify his/her personality perception. Weiner (1972) explains that performance standards and the number of successes and failures shape the attribution of achievements. In this sense, Thompson et al. (1998) believe that IP decreases with age as positive experiences become more frequent, enabling individuals to assimilate success and minimize impostor fears, reinforcing the belief that IP can be minimized over time.

Regarding previous studies, Thompson et al. (1998) analyzed impostors' attribution process after experiencing success or failure. Tests of group differences were performed, and the results indicated no differences between genders regarding IP levels—additionally, the older the individual, the less frequent impostor feelings. The findings show that impostors generalize their failures but attribute success to external factors and are more likely to experience depression.

Craddock et al. (2011) sought to understand the manifestation of the Impostor Phenomenon by interviewing doctoral students attending a program in the United States. They identified that the individuals routinely faced high-performance expectations and failure aversion during childhood, which instilled perfectionist personality traits. Not accepting failure leads individuals to seek positive feedbacks and avoid criticism constantly. Therefore, personal demands for academic success and high performance are internalized and become part of the student's mindset, which persists into adulthood. In addition, the reports indicate that racial and background issues, such as being the first generation in the family to attend a doctoral program, promote impostor feelings. The authors also note the need for students to balance their academic obligations with other social life aspects as well as provide social support to these students.

Sonnak and Towell (2001) indicate that parenting style is associated with the Impostor Phenomenon, mainly parental overprotection. Overprotection leads parents to assume their children's responsibilities and projects to minimize their chances of failure. As a result, overprotected children tend to consolidate desires for accomplishments and success and avoid failure. The problem is that failure is necessary for one's constructive formation of character and resilience, which persist during adulthood. Hence, one's perception of skills is compromised, and success is no longer satisfactorily assimilated because the child assumes that the accomplishment of tasks was not obtained by his/her competencies but due to others' interference (Want & Kleitman, 2006).

French, Ullrich-French, and Follman (2008) validated the Clance Impostor Phenomenon Scale (CIPS) among American Engineering students, and the model with the most appropriate indicators was composed of two dimensions: one related to falsehood and the other to luck. These findings may indicate that cultural changes society has witnessed over the years may have affected the CIPS' one-dimensionality, outlying a multidimensional construct.

Deffendall, Knutson, and Sacks (2011) investigated the profile of students who were the first generation in their families to attend an undergraduate program in a university in the United Kingdom. The findings indicated that these students presented higher dropout rates than those in which at least one of the parents had a higher education degree. The authors considered that the challenges experienced in higher education might make students feel like a "fraud" while not receiving proper counseling from their families to deal with these situations result in higher dropout rates and impostor feelings.

These studies lead to an evolving theoretical-empirical field that highlights the importance of measuring IP in the university context. Furthermore, validating the CIPS in the Brazilian context enables other studies to address the topic and confer greater reliability to comparisons between studies performed in Brazil.

3. Method

Data were collected between August and December 2018 using the Survey Monkey® online platform. The study population comprised 15,971 students enrolled in graduate programs in the business field: Business Administration, Accounting Sciences, and Economics. The sample was composed of 1,816 valid responses, considering a minimum sampling parameter of 375 participants, with a 95% confidence level and a 5% margin of error (Survey Monkey, 2021). Pretests were conducted with graduate students from other fields of knowledge to verify the instrument's reliability and prevent bias coming from the respondents. The Impostor Phenomenon was measured using the Clance Impostor Phenomenon Scale, which was originally composed of 20 statements measuring the respondents' level of identification with certain behaviors and feelings, rated on a five-point Likert scale: "1 = Not at all true"; "2 = Rarely"; "3 = Sometimes"; "4 =Often"; and "5 = Very true".

CIPS is the scale most frequently used to identify the Impostor Phenomenon and its total score ranges from 20 to 100 when all items are completed; the higher the score, the more intense one's impostor experiences and feelings (Clance, 1985). Scores equal to or below 40 indicate the individuals present fewer IP characteristics; between 41 and 60 present moderate impostor feelings; scores between 61 and 80 indicate impostor feelings are often experienced, while individuals scoring from 81 to 100 have intense impostor experiences. A form was also included to characterize the respondents.

The study project was submitted to and approved by the Institutional Review Board to which the authors are affiliated and registered it the Plataforma Brasil under No. CCAE 95480818.9.0000.0102. The form included a question to identify whether the respondents were graduate students and one question to determine the field of knowledge to which the respondent's program belonged.

The quantitative analyses performed during the pretest and final data collection followed the following Statistical Analysis Protocol (Figure 2).

Indicators	Parameter	Theoretical Framework
Scale Reliability Analysis		
Cronbach's alpha	≥ 0.70: Ideal ≥ 0.60 < 0.70: Satisfactory	Hair Jr, Black, Babin, Anderson, and Tatham (2009)
Confirmatory Factor Analysis (CFA)		
$\chi 2$	The smaller, the better	Marôco (2014)
p-value	> 0.050	
CFI	< 0.8: Very low ≥ 0.8 < 0.9: Low ≥ 0.9 < 0.95: Good ≥ 0.95: Excellent	
PCFI	< 0.60: Low ≥ 0.60 < 0.8:Good ≥ 0.8: Excellent	
GFI	< 0.8: Very Low ≥ 0.8 < 0.9: Low ≥ 0.9 < 0.95: Good ≥ 0.95: Excellent	
PGFI	< 0.60: Low ≥ 0.60 < 0.8: Good ≥ 0.8: Excellent	
RMSEA	> 0.10: Unacceptable > 0.05; 0.10 ≤: Good ≤ 0.05: Very Good	
MECVI	The smaller, the better	
Factor loadings	Ideal: above 0.50; Acceptable: above 0.40	Hair Jr et al. (2009)
Communalities	Preferably above 0.50	
Average Extracted Variance	Above 0.50	
Composite Reliability	Above 0.70	Hair Jr et al. (2009) e Marôco (2014)
Discriminant Validity	The Average Extracted Variance must be greater than the quadratic estimate of the correlation.	
Exploratory Factor Analysis (EFA)		
Measure of Sampling Adequacy (MAS)	< 0.50: Unacceptable ≥ 0.50 < 0.60: Low ≥ 0.60 < 0.70: Mediocre ≥ 0.70 < 0.80: Average > 0.80: Excellent	Hair Jr et al. (2009)
KMO	< 0.50: Unacceptable ≥ 0.50 < 0.60: Low ≥ 0.60 < 0.70: Reasonable ≥ 0.70 < 0.80: Average ≥ 0.80 < 0.90: Good > 0.90: Very Good	Fávero and Belfiore (2017)
Bartlett's test	*p-value* < 0.050	Field (2009) and Hair Jr et al. (2009)
Communalities	Preferably above 0.50. Acceptable 0.30.	
Factor loadings	Ideal: above 0.50; Acceptable: above 0.40	
Factor	Above 50%	Marôco (2007)

Figure 2. Statistical Analysis Protocol
Note. $\chi 2$ = Chi-square; CFI = Comparative Fit Index; PCFI = Parsimony Comparative Fit Index; GFI = Goodness-of-Fit Index; RMSEA = Root Mean Square Error of Approximation; MECVI = Modified Expected Cross-Validation Index; KMO = Kaiser-Meyer-Olkin.

Source: developed by the authors.

CIPS was originally developed in English, and some unofficial translations were found in Brazil. Hence, authorization to translate the scale was asked to its author by email. After she provided her consent, the scale was submitted to a sworn translation to be later adjusted. In Brazil, a certified translation is an official document of public faith, ensuring the content in Portuguese trustworthy reflects the best as possible the content written in a foreign language (ATPP, 2018). The translated version was then analyzed by two professionals who teach in graduate programs, one from the field of quantitative methods and one experienced in scientific research methodology; both affiliated with graduate programs in the business field. This verification focused on the scale's methodological structure, and no adjustment was required.

In the pretest phase 1, the scale was sent to 592 graduate students and researchers from different fields of knowledge. These participants were not included in the final sample. A total of 113 questionnaires were returned, and 100 valid answers were analyzed. Additionally, 37 graduate students provided suggestions and comments concerning the instrument. Each participant received an identification code.

The scale's reliability was verified using Cronbach's alpha, and this preliminary analysis indicated the instrument presented internal consistency, with a Cronbach's alpha equal 0.919 (Fávero & Belfiore, 2017). However, Field (2009) notes that Cronbach's alpha varies according to the scale's number of items. The higher the number of items, the higher the coefficient as the numerator of the equation squares the number of items. Additionally, all the suggestions provided by the graduate students were analyzed.

Graduate students 14 and 27 noted that the categories could induce the answers; for instance, statement 1 begins with the expression "*Eu frequentemente*" [I have often], while "4 = often" is one of the scale's categories. Hence, using the same term at the beginning of the statement and in the category may have induced answers, compromising internal consistency and the constructs' unidimensionality. Hence, the statements containing expressions with the potential to bias the answers were highlighted, and each item's mean and standard deviation were calculated for analysis. Figure 3 presents the statements with expressions that could lead to bias.

Statements	M	DP
1. I **often** succeed on a test or assignment, even if I am afraid I will not do well before taking on the assignment.	3.848	0.813
5. **Sometimes**, I think I got my current position or current success because I happened to be in the right place at the right time or knew the right people.	2.616	1.330
8. I **rarely** do a project or task as well as I would like.	2.808	1.322
9. **Sometimes**, I feel or believe that success in my life or work results from some kind of mistake.	1.990	1.241
11. **Sometimes**, I feel that my success was due to some sort of luck.	2.424	1.270
12. **Sometimes**, I get disappointed in my current accomplishments and feel I should have done a lot more.	3.323	1.194
13. **Sometimes**, I am afraid others will realize how much I lack knowledge or skill.	2.939	1.406
14. **Sometimes**, I am afraid that I might fail in a new task or endeavor, although I usually do whatever I try.	3.354	1.189
17. I **often** compare my ability to those around me and think they might be more intelligent than me.	3.455	1.272
18. I **often** worry about not succeeding with a project or exam, even though others around me are considerably confident that I will succeed.	3.303	1.173

Figure 3. Clance Impostor Phenomenon Scale – CIPS
Note. M = Mean; SD = Standard Deviation.

Source: Clance (1985).

Dispersion of the statements composing the CIPS was verified by the mean, standard deviation, and boxplot of each item, showing that the answers provided to some statements were concentrated on the categories that matched the beginning of the statement. For example, statement "1. *Eu frequentemente tenho sucesso em um teste ou tarefa, mesmo com medo de não me sair bem antes de assumir a tarefa*" [1. I have often succeeded on a test or task even though I was afraid that I would not do well before I undertook the task.]. Therefore, the terms that initiated statements 1, 8, 9, 11, 12, 13, 14, 17, and 18 were either changed or excluded because they matched the scale's categories and could potentially interfere with and direct the participants' interpretation. Statement 5 was adjusted to facilitate clarity, as suggested by graduate student 100. All the changes were implemented after discussing with a professor experienced in scientific research methodology, aiming to preserve the statements' content and meaning.

In the pretest phase 2, 453 coordinators of graduate programs in different fields of knowledge received an invitation for the pretest and were asked to disseminate it among the students; also, 1,316 graduate students were invited via email to participate in this stage of the study. A total of 558 students participated, and 513 questionnaires were valid and included in the analysis. The students attended 99 graduate programs from different subfields of knowledge. After tabulating data, the scale's reliability was verified using Cronbach's alpha, equal to 0.921.

Due to the limitations of Cronbach's alpha, Confirmatory Factor Analysis and Exploratory Factor Analysis were performed to verify the constructs' one-dimension. IBM SPSS AMOS v. 21.0.0® and IBM SPSS Statistics v. 19.1® were used. The Confirmatory Factor Analysis indicated outliers, confirmed by the square of Mahalanobis' distance and p1 and p2 smaller than 0.001. Even though eight observations presented unsatisfactory p1 and p2, the square of Mahalanobis' distance did not present large distancing that indicated the need to exclude the observations.

Regarding the statements, none of the variables presented extreme violation of normality that would indicate the need for exclusion, as all the values concerning asymmetry (*sk*) were below 2 and kurtosis (*ku*) were below 7, according to criteria established by Marôco (2014). Table 1 shows asymmetry and kurtosis values for each variable of the Impostor Phenomenon and goodness of fit.

Table 1
Asymmetry (sk) and kurtosis (ku) – CFA

Variable	Asymmetry(sk)	Kurtosis (ku)	Variable	Asymmetry(sk)	Kurtosis (ku)
F1	-0.695	1.454	F11	0.730	-0.706
F2	-0.343	-0.585	F12	-0.152	-1.112
F3	-0.018	-0.983	F13	-0.101	-1.218
F4	-0.404	-1.055	F14	-0.479	-0.554
F5	0.613	-1.031	F15	0.008	-1.072
F6	0.066	-1.305	F16	0.260	-1.229
F7	-0.288	-0.996	F17	-0.358	-0.984
F8	-0.043	-0.884	F18	-0.464	-0.612
F9	0.793	-0.475	F19	-0.805	-0.329
F10	0.005	-1.146	F20	-0.198	-0.953
Indicator		**Interpretation**	**Indicator**		**Interpretation**
χ2	1.138.544	Parameter not met	GFI	0.799	Very low
p-value	0.000	Parameter not met	PGFI	0.647	Good
CFI	0.816	Very low	RMSEA	0.105	Unacceptable
PCFI	0.730	Good	MECVI	2.387	Poor adjustment

Source: developed by the authors.

According to the analysis protocol, Table 1 shows that the goodness of fit of some indicators was not satisfactory. When the standardized factor loadings were verified, statements with values below 0.50 were found, suggesting that more than half of the item was explained by errors instead of variation *per se* (Hair Jr et al., 2009). The statements with values below the parameter proposed by Hair Jr et al. (2009) are presented in Table 2.

Table 2
Standardized Factor Loadings - CFA

ID	Standardized Factor Loadings	ID	Standardized Factor Loadings	ID	Standardized Factor Loadings	ID	Standardized Factor Loadings
F1	-0,098	F6	0,764	F11	0,700	F16	0,669
F2	0,221	F7	0,682	F12	0,686	F17	0,706
F3	0,601	F8	0,596	F13	0,792	F18	0,697
F4	0,723	F9	0,715	F14	0,730	F19	0,215
F5	0,624	F10	0,644	F15	0,826	F20	0,384
Composite Reliability (CR) = 0.9221				**Average Variance Extracted (AVE) = 0.519**			

Source: developed by the authors.

Even though the Average Variance Extracted was slightly higher than the ideal and the Composite Reliability was satisfactory, we opted for analyzing the origin of low standardized factor loadings of the statements with the worst results, i.e., F1, F2, F19, and F20, to improve the model's goodness of fit. A search in the literature identified studies that performed CFA and EFC in the CIPS (Chrisman, Pieper, Clance, Holland, & Glickauf-Hughes, 1995; French et al., 2008) and found similar problems for items 1, 2, 19, and 20, suggesting their exclusion and the existence and verification of two (French et al., 2008) or three (Chrisman et al., 1995) factors arising from the remaining statements.

Hence, an EFA was performed after excluding the four items to analyze CIPS' factor structure. Using the Principal Component Extraction and the Varimax rotation methods, two factors were found and explained 60.52% of the total variance. The Varimax method was chosen to maximize the sum of the variance with loadings required by the factorial matrix (Hair Jr et al., 2009). The anti-image correlations were higher than 0.70 on the diagonal, KMO was 0.946, Bartlett's test was significant, and commonalities presented indicators higher than or close to 0.50. Hair Jr et al. (2009) suggested that factor loadings below 0.40 were hidden because they were not significant. Table 3 presents the fitness of the variables in their factors.

Table 3
Adequacy of variables to factors - EFA – CIPS

Factor 1						Factor 2	
ID	Factor Loadings	ID	Factor Loadings	ID	Factor Loadings	ID	Factor Loadings
F14	0.778	F4	0.718	F10	0.627	FI11	0.875
F13	0.770	F7	0.657	F16	0.61	FI9	0.856
F15	0.767	F12	0.637	F3	0.563	FI5	0.831
F18	0.767	F6	0.631	F8	0.492		
F17	0.724						

Note. ID = Identification.

Source: developed by the author.

Similar to French et al. (2008), two factors were identified: "Factor 1 – *Falsidade e Subestimação*" [Fake], aligned with statements expressing the falsehood and underestimation of one's skills, and Factor 2 – *Sorte ou Acaso*" [Luck], inherent to beliefs that success was achieved due to chance or luck. Additionally, statements F6 and F8 share loadings with more than one factor. Hence, these statements were maintained not to impair the model's validity. A CFA was performed together with the two factors, and satisfactory goodness of fit indicators were found, Composite Reliability, Average Variance Extracted, and correlation between factors, as shown in Table 4.

Table 4
Goodness of fit indicators - CFA

Indicator		**Interpretation**	**Indicator**		**Interpretation**	
χ 2	390.089	Parameter not met	GFI	0.911	Good	
p-value	0.000	Parameter not met	PGFI	0.690	Good	
CFI	0.943	Good	RMSEA	0.074	Good	
PCFI	0.810	Good	MECVI	0.895	Good adjustment	
Correlation between Factor 1 and Factor 2					**0,696**	
Discriminant Validity (DV)					**0,484**	
					Factor 1	**Factor 2**
Composite Reliability (CR)					**0.9292**	**0.9149**
Average Variance Extracted (AVE)					**0.5046**	**0.7825**

Source: developed by the author.

The goodness of fit indicators found here were compared to those reported by French et al. (2008) for the two-factor model. French et al. (2008) obtained the following: $\chi 2 = 1472.85$, p-value < 0.050, CFI = 0.796. Thus, similar to French et al. (2008), the only parameter not met was the p-value of $\chi 2$, with the other indicators having good results and better goodness of fit than the ones reported by French et al. (2008). Statements F5, F8, and F11 explain 78.25% of the variance of "Factor 2 – *Sorte*" [Luck], while the others explain 50.46% of "Factor 1 – *Falsidade e Subestimação*" [Fake]. The factors are not highly correlated and the Discriminant Validity was confirmed. The explanatory power of these factors may change in the final sample, given its different characteristics, but provide evidence of the structure and indications for using the CIPS in the study's next phase. Given the feasibility of the model, the 16-statement version was adopted in the final data collection. The final version with adjustments was sent to the original scale's author and is presented in the analysis of the results. After completing the pretest, the final data collection was conducted with graduate students from the business field.

4. Results

A total of 2,259 responses were obtained, 1,816 of which were considered valid and were included in the analysis. Of these, 51.21% of the respondents reported being women; were aged between 21 and 66 years old; 2.42% were attending teaching institutions located in the North; 7.71% in the Mid-West; 14.98% in the Northeast; 28.64% in the South, and 46.25% in the Southeast.

Table 5 presents the 16 statements addressing the Impostor Phenomenon that remained after excluding statements F1, F2, F19, and F20 during the pretest after descriptive analysis.

Table 5

Clance Impostor Phenomenon Scale – Descriptive Statistics

Statement	M	Mo	Md	Dp
F18 – I often worry about not succeeding with a project or examination, even though others around me are considerably confident that I will do well.	2.992	3	3	1.249
F7 – I tend to recall the incidents in which I have not done my best more frequently than those times I have done my best.	2.843	3	3	1.252
F14 – I am afraid that I might fail in a new task or endeavor, although I usually do well whenever I try.	2.831	3	3	1.194
F17 – I compare my skills with those around me, and I think that they may be more intelligent than me	2.831	3	3	1.275
F8 – I hardly do a project or a task as well as I would like.	2.733	3	3	1.187
F12 – I am disappointed with my current achievements and think I should have done a lot more.	2.681	3	3	1.318
F4 – When people compliment me for something I have accomplished, I am afraid I will not live up to their expectations in the future.	2.593	2	3	1.220
F6 – I am afraid that important people realize that I am not as capable as they think.	2.386	1	2	1.308
F13 – I am afraid others realize how much I lack knowledge or skills.	2.366	1	2	1.256
F10 – It is difficult to accept praise or compliments about my intelligence or achievements.	2.358	1	2	1.216
F3 – If possible, I avoid evaluations and am afraid of others evaluating me.	2.299	3	2	1.065
F15 – When I achieve something and am recognized for my achievements, I doubt I can keep repeating that success.	2.275	1	2	1.158
F16 – If I receive much praise and recognition for something I have accomplished, I tend to disregard the importance of what I have done.	2.216	1	2	1.229
F5 – I think I got my current position or I got my current success by chance, because I was in the right place, at the right time or I knew the right people.	1.818	1	1	1.129
F11 – I feel my success was due to some luck.	1.718	1	1	0.984
F9 –I feel or believe that my success in my life or job has been the result of some kind of chance.	1.687	1	1	0.973

Note. M = Median; Mo = Mode; Md = Median; SD = Standard Deviation.

Source: Developed by the authors.

The scale's interval ranged from 1 to 5, in which none of the items reached a mean equal to or higher than 3; the three highest and lowest means are commented on as follows. The item with the highest mean was "F18 - *Me preocupo em não ter sucesso com um projeto ou avaliação, mesmo que outros à minha volta tenham confiança considerável de que eu terei sucesso*" [18. I often worry about not succeeding with a project or examination, even though others around me have considerable confidence that I will do well.] (M = 2.992; SD = 1.249), the category most frequently checked was "3 = Sometimes" (Mo = 3; Md = 3). F18 concerns the individuals' lack of confidence in their ability to succeed in certain tasks. This aspect is one of the main characteristics of impostors, already portrayed in the seminal study by Clance and Imes (1978), in which successful women doubted their competencies. In this sense, a great fear of not accomplishing goals was found among people with high educational levels with a Master's or Doctoral degree. These feelings may be heightened in the context of a graduate program, considering its complexity and the fact it leads to insecurities and imposes pressure on students (Levecque, Anseel, De Beuckelaer, Van der Heyden, & Gisle, 2017).

Statement "F7 - *Tenho a tendência de lembrar mais os incidentes em que não fiz o melhor que pude do que os momentos em que fiz o melhor que pude*" [I tend to remember the incidents in which I have not done my best more than those times I have done my best.] (M = 2.843; Sd = 1.252) obtained the second-highest mean, with the category "3 = Sometimes" (MO = 3; MD = 3), being the most frequently checked. Dudău (2014) found this characteristic among Romanian students attending a graduate program in Psychology, in which individuals with impostor feelings tended to pay greater attention to errors than to successes. Thompson et al. (1998) mentioned that assimilation of intellectual capacity tends to be maximized over time as individuals accomplish more goals. However, this process is often slow (Clance & Imes, 1978), leading students with high educational levels to feel impostors. Encouraging group conversations and graduate students' exchanging experiences can help those with impostor feelings assimilate their successes and intellectual capacities.

Statements "F14 - *Tenho medo de que eu possa falhar em uma nova tarefa ou empreendimento, embora eu geralmente faça bem o que tento*" [I'm often afraid that I may fail at a new assignment or undertaking even though I generally do well at what I attempt.] (M = 2.831; SD = 1,194) and "F17 - *Eu comparo minhas habilidades com aqueles que estão ao meu redor e penso que eles podem ser mais inteligentes do que eu*" [I often compare my ability to those around me and think they may be more intelligent than I am.] (M = 2.831; SD = 1.275) obtained the third highest mean, in which category "3 = Sometimes" (MO = 3; MD = 3) was the most frequently chosen. Regarding F14, Holmes et al. (1993) stress that individuals with such behavior tend to refuse opportunities to grow in their careers and prioritize low-level positions below their abilities to avoid others' criticism. Regarding F17, Craddock et al. (2011) report this characteristic is frequent among Doctoral students with impostor feelings, as feeling one does not have the same intellectual capacity as his/her peers results in feelings of not belonging to the context of a graduate program. Additionally, academic competitiveness inherent to a graduate environment (Levecque et al., 2017) favors the emergence of these feelings.

The statements with the lowest means were "F9 - *Sinto ou acredito que o sucesso em minha vida ou em meu trabalho é resultado de algum tipo de acaso*" [Sometimes I feel or believe that my success in my life or job has been the result of some kind of error.] (M = 1,687; SD = 0,973; MO = 1; MD = 1), followed by "F11 - *Sinto que meu sucesso foi devido a algum tipo de sorte*" [At times, I feel my success has been due to some kind of luck.] (M = 1,718; SD = 0,984; MO = 1; MD = 1), and finally "F5 - *Acho que obtive minha posição atual ou obtive meu sucesso atual por acaso, porque estava no lugar certo, na hora certa, ou conhecia as pessoas certas*" [I sometimes think I obtained my present position or gained my present success because I happened to be in the right place at the right time or knew the right people.] (M = 1,818; SD = 1,129; MO = 1; MD = 1). These statements characterize the perception that one's success is related to superstitious factors. In this context, even though one of the characteristics of impostors is to relate accomplishments to chance (Clance & Imes, 1978; Holmes et al., 1993), this aspect was not predominant in the sample addressed here.

Table 6 was developed based on the sum of the scores obtained by the students in the CIPS. It classifies the respondents according to the level of impostor feelings. Clance (1985) explains that the CIPS original version comprises 20 statements, in which the original score interval ranged from 20 to 100 points. In this study, the scale was reduced to 16 statements; hence, the interval ranges from 16 to 80 points.

Table 6
Scoring range of impostor feelings

Range	Description	F	%	Range	Description	F	%
16 to 32 points	Few characteristics of the Impostor Phenomenon	676	37.22	49 to 64 points	Frequent IP	352	19.38
33 to 48 points	Moderate IP	721	39.70	65 to 80 points	IP is intense and affects the assimilation of success and intellectual capacity	67	3.69

Note. F = frequency; % = percentage.

Source: Developed by the authors.

Most graduate students from the business field addressed in this study experienced moderate levels of impostor feelings, i.e., 721 respondents, representing 39.70% of the sample. Next is the group of students with few characteristics of the Impostor Phenomenon, with 676 graduate students representing 37.22% of the sample. The third group comprises 352 participants, i.e., 19.38% of the sample frequently experience impostor feelings. Finally, the group experiencing intense impostor experiences included 67 individuals, 3.69% of the sample.

After the descriptive analysis, the factorial structure was verified with EFA. Table 7 presents the commonalities and indicators of adequacy obtained in this stage.

Table 7
EFA – Communalities and Indicators of Adequacy

ID	Extraction	ID	Extraction	ID	Extraction	ID	Extraction
F3	0.296	F7	0,.96	F11	0.832	F15	0.686
F4	0.523	F8	0.449	F12	0.483	F16	0.467
F5	0.712	F9	0.813	F13	0.670	F17	0.525
F6	0.633	F10	0.455	F14	0.647	F18	0.588
Indicator		**Interpretation**		**Indicator**		**Interpretation**	
MAS minimum	0.863 (FI9)	Excellent		*Bartlett χ2*	16,197.32	Very good	
MAS maximum	0.976 (FI5)			*Bartlett Sig.*	0.000		
KMO	0.944	Very good					

Note. ID = Identification.

Source: developed by the authors.

Only statement "F3 - *Se possível eu evito avaliações e tenho medo de que outras pessoas me avaliem*" [I avoid evaluations if possible and have a dread of others evaluating me] obtained a communality value below 0.30, i.e., 0.296. However, we opted not to exclude this statement because its value is very close to the criterion, and also, the factors follow the same structure of the pretest, reported by French et al. (2008). Additionally, the remaining indicators were appropriate.

Note that the MAS indicators obtained through the diagonal correlations of the anti-image matrix are appropriate; they were above 0.70 and higher than the variable's remaining correlations. Additionally, KMO was satisfactory (0.944), well above 0.70, while Bartlett's test was significant, indicating the presence of significant correlations between the variables. Therefore, the factorial structure is presented in Table 8 together with the variance it explained.

Table 8

EFA – Factor loadings and explained variance

Factor 1						Factor 2	
ID	Factor Loadings	ID	Factor Loadings	ID	Factor Loadings	ID	Factor Loadings
FI14	0.792	FI17	0.705	FI16	0.585	FI11	0.875
FI13	0.770	FI4	0.699	FI8	0.570	FI9	0.856
FI15	0.770	FI7	0.660	FI10	0.563	FI5	0.831
FI18	0.760	FI12	0.632	FI3	0.536		
FI6	0.716						

Factor	Initial eigenvalues			Rotating sums of squared loadings		
	Total	% of variance	% cumulative	Total	% of variance	% cumulative
Factor 1 – Fake	7.773	48.580	48.580	6.163	38.516	38.516
Factor 2 – Luck	1.503	9.392	57.971	3.113	19.455	57.971

Note. ID = Identification.

Source: developed by the authors.

Similar to French et al. (2008), two factors were found, with statements F3, F4, F6, F7, F8, F10, F12, F13, F14, F15, F16, F17, and F18 composing "Factor 1 – *Falsidade e Subestimação*" [Fake] with a Cronbach's alpha of 0.922, and statements F5, F9 and F11 comprising "Factor 2 – *Sorte or Acaso*" [Luck] with a Cronbach's of 0.869. As argued by Diamantopoulos and Siguaw (2000), a minimum of three variables per factor was obtained.

Factor 1 was called "*Falsidade e Subestimação*" [Fake] because it represents feelings of fraud and self-doubt towards one's ability to succeed. Factor 2 was called "*Sorte ou Acaso*" [Luck] because it contains statements that indicate that success is attributed to randomness, destine, or coincidence. The factorial structure explains 57.971% of data variance. Hence, Factor 1 explains 48.580% of the variance in impostor feelings, and Factor 2 explains 9.392% of the variance.

Therefore, this study's objective was achieved. When analyzed from a two-dimension perspective, CIPS presents satisfactory indicators. Analysis of the sample shows that most students experienced moderate levels of impostor feelings. A portion of the respondents manifested all the characteristics of the Impostor Phenomenon. These characteristics were related to self-doubting their ability to succeed, fear of failure, underestimating their competencies while overestimating those of their peers. In general, the statements indicating that success is attributed to luck or chance did not obtain high scores. The analysis of the results suggests that the Impostor Phenomenon experienced by graduate students in the business field can be divided into two large groups: one representing falsehood and underestimation feelings and another representing luck or chance.

5. Conclusion

The findings indicate that doubting one's ability to succeed, fear of failure, underestimating one's competencies, and overestimating others' capabilities are the main characteristics of graduate students in the business field who experience impostor feelings. As described in the literature, these feelings can hinder the development of students in the academic milieu and the development of their professional careers.

In addition to sharing experiences and highlighting their accomplishments, group conversations can help students see themselves more realistic and minimize the Impostor Phenomenon. Hence, controlling the Impostor Phenomenon is vital for individuals to consolidate self-esteem and cope with the challenges imposed in the academic and professional spheres in a more self-assured, confident, and proactive manner.

This study presents contributions in the methodological and theoretical fields by validating the Clance Impostor Phenomenon Score and identifying its bi-dimensional nature, enabling further research. This study also contributes in social terms as it discusses Impostor Phenomenon and its consequences on graduate students, suggesting strategies to minimize these feelings.

This study's limitations concern a lack of studies developed in the business field and among graduate programs, which impedes the comparison of results. Additionally, as the sample was not randomly selected, the results cannot be generalized to this population. Future studies are suggested to investigate other fields of knowledge so that the Impostor Phenomenon characteristics are outlined in graduate programs.

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The adoption of learning strategies among the newcomers in the Accountancy program of a public HEI in Minas Gerais, Brazil

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Abstract

Objective: To identify the learning strategies college students entering an Accountancy program adopt and their perceptions regarding their use. Learning strategies are classified into cognitive, metacognitive, or lack of strategies.

Method: Data were collected during workshops addressing learning strategies among the students entering the Accounting Sciences program of a public Higher Education Institution (HEI). Questionnaires were applied as proposed by Boruchovitch et al. (2006). In addition, focus groups were held. The study addressed 132 students who completed the questionnaire; 26 of them took part in focus groups.

Results: In general, metacognitive learning strategies were most frequently adopted, indicating that students are aware that studying is associated with good performance, and distractions may impact their learning process. Finally, professors play a role in academic performance, as students believe that professors are more experienced and can support their learning process.

Contributions: This study's contributions include the perception of students entering a higher education program regarding the teaching-learning process and reinforce the importance of using such strategies, which professors can encourage.

Keywords: Learning Strategies; Teaching-learning process; Newcomers.

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1. Introduction

Entering higher education is a desire of many people seeking opportunities when choosing a specific program. However, the transition to college life is marked by some difficulties, for instance, related to institutional adaptation, relationships, economic resources, vocational issues, and even the learning process (Casanova, Araújo & Almeida, 2020).

When specifically considering difficulties related to learning, it is worth noting the role of students. In this sense, self-regulation is crucial, that is, the student's control over his/her cognitive process, behaviors, motivations, and the use of strategies to achieve specific educational objectives (Panadero & Alonso-Tapia, 2014).

Souza (2010) shows that learning strategies consist of methods students use to learn new content and develop skills that will contribute to tasks in the various fields of learning. Oliveira, Boruchovitch, and Santos (2009), in turn, note that learning strategies enable students to enhance their learning.

When students self-regulate the adoption of strategies, they become more committed to their learning (Weinstein, Acee & Jung 2011). The role of professors in disseminating and encouraging these learning strategies is highlighted though; that is, professors can help students adopt these strategies to improve their academic performance (Souza, 2010).

Regarding the use of learning strategies in higher education, students tend to use them differently (García-Perez, Fraile & Panadero, 2020). Evidence shows that these strategies vary in Accounting Sciences, depending on the students' characteristics (Lima Filho, Lima & Bruni; 2015) or motivational issues (Castro, Miranda & Leal, 2016; Daciê & Anzilago, 2019). Additionally, findings (Ballantine, Duff & Larres, 2008; Hall, Ramsay & Raven, 2004; Silva & Biavatti, 2018) show that different teaching methodologies may increase the use of strategies, suggesting the professors' influence in the teaching process.

Based on the previous discussion, the following research question is proposed: **What learning strategies do students use, and how do they use these strategies to study?** Hence, this study's objective was to identify the learning strategies students entering an Accounting Sciences program use and their perceptions regarding these strategies. The secondary objective is to identify the students' perceptions regarding the professors' influence on the choice of learning strategies.

This study sought to corroborate previous literature, and its value lies in the assessment of what learning strategies students entering an Accountancy program use in their learning process. An undergraduate program demands thinking and critically considering content so that students need to be the protagonists of their learning process, as shown by Waterkemper and Prado (2011).

The use of learning strategies may be directly linked to students' academic success, as noted by Oliveira et al. (2009) and Warr and Downing (2000). From this perspective, Weinstein et al. (2011) defend the strategies that contribute to better use of higher education studies based on students' greater autonomy.

This study is expected to contribute by identifying the learning strategies of students entering an Accounting Sciences program and the potential methods and preferences in this program, also identifying students' perspectives regarding the role of professors in the use of these strategies. Additionally, this study's contributions include the method in which data are collected, which was through workshops addressing learning strategies among newcomers.

2. Theoretical Framework

The theoretical framework addresses learning strategies, showing the importance of using them and their influence on the learning process. Additionally, correlated studies addressing the learning strategies adopted by undergraduate students, especially those attending Accountancy programs, and professors' influence on the students' preferences are presented.

2.1 Learning Strategies in the Teaching Process

The seminal studies by John H. Flavell (1979) in the 1970s and 1980s addressing active cognitive processing provided evidence that learning strategies promote the learning process (Weinstein et al., 2011). As a result, research addressing this topic started, and authors sought to establish theoretically what learning strategies are.

From the perspective of Mayer (1988), learning strategies are behaviors that influence information processing; Dembo (1994) considers that these are processes and methods students use to facilitate the acquisition, use, and storing of information. Valle Arias, Lozano, and Cabanach (1999) define learning strategies as learners' conscious actions when performing a task, using procedures, tactics, and techniques to achieve learning objectives. Boruchovitch (1999) reports that learning strategies comprise a fundamental process of the students' ability and learning process, preventing learning difficulties. Oliveira et al. (2009) and Warr and Downing (2000) state that these strategies enhance and promote students' learning and improve their ability to recover previously learned information.

Summarizing the previous paragraph, this study considers that learning strategies can be understood as behaviors that influence the processing of content so that different learning objectives demand different strategies.

When discussing learning, self-regulated learning is important, which assumes that students can plan and adopt strategies to achieve a given learning objective (Freire, 2009). Furthermore, self-regulated learning indicates that students are more autonomous and proactive in the learning process (Simão & Frison, 2013).

Self-regulation helps students manage their learning process strategically and figures among the three main elements in the scope of learning strategies. Second come ability, which concerns knowledge on how to use strategies, and will, which concerns motivation and affective elements of strategies (Weinstein et al., 2011); hence, the importance of using self-regulated strategies to pursue academic success (Weinstein et al., 2011).

The strategies used in the learning process comprise actions that enable students to be more efficacious when performing a task (Ribeiro, 2003), contributing to information processing (Oliveira et al., 2009). Previous studies (Boruchovitch, 1999; Boruchovitch, 2006; Boruchovitch & Santos, 2015; Oliveira et al., 2009; Ribeiro, 2003; Souza, 2010) classify learning strategies broadly in two large groups: metacognitive and cognitive.

Metacognitive learning strategies concern planning, monitoring, and regulating techniques used before and after the learning process (Valle Arias et al., 1999). The idea of metacognition conceived by Flavell (1979) consists of recognizing one's knowledge to learn, highlighting the importance of learning how to learn in the process (Ribeiro, 2003). Furthermore, even though metacognition has different concepts, common aspects include mechanisms that support the promotion, production, and recording of information, and monitoring one's intellectual process (Lima Filho et al., 2015).

Metacognition helps improve cognition, motivation, and learning (Ribeiro, 2003). For this reason, it is constantly required in an academic environment and should be the object of intervention to prevent learning difficulties (Corso, Sperb, Jou & Salles, 2013). In this sense, metacognitive strategies are those related to monitoring and self-controlling the learning process, which evidences the students' ability to reflect upon this process (Boruchovitch, 1994). Hence, metacognitive strategies can boost students' learning (Oliveira et al., 2009).

Cognitive strategies are techniques used by students to accomplish the learning process (Valle Arias et al., 1999) and are directly related to the learning objectives (Boruchovitch, 1994; Ribeiro, 2003). These cognitive strategies can be used after the metacognitive ones when students decide which path to follow to learn content whenever they are faced with a situation (Ribeiro, 2003).

Comparison between the two groups of learning strategies shows that the metacognitive strategies are broader (Souza, 2010) and refer to an awareness process when facing situations in which the desired learning is not being achieved. Thus, metacognitive strategies comprise planning, monitoring, and regulating cognitive, affective, and motivational processes (Boruchovitch et al., 2006).

Cognitive strategies are more specific as they are associated with the performance of tasks (Souza, 2010). As noted by Abdullah et al. (2015), this group of strategies comprises three branches: rehearsal, which consists of repeating learned information; elaboration, which refers to associating new and previous information; and organization, which concerns the structuring of knowledge to be acquired.

Considering the differences between the two groups of strategies, Table 1 presents the definitions and procedures adopted in each group.

Table 1

Learning Strategies

Strategies	Definitions	Procedures
	Metacognitive learning strategies	
Planning	Setting goals to study.	Matching strategies to the learning objectives.
Monitoring	Self-knowledge of cognitive skills and limitations	Monitoring motivation and anxiety, planning tasks, controlling effort, monitoring and regulating understanding of content, identifying and correcting mistakes, controlling time, and organizing the study environment.
Regulation	Knowledge regarding learning strategies, how to use them, and under what circumstances	Be aware of the various strategies and change them in case learning objectives are not achieved.
	Cognitive learning strategies	
Rehearsal	Actively repeating what is being learned.	Taking notes, listening to recordings or podcasts addressing content, highlighting the material.
Elaboration	Treating and transforming the material so that it becomes meaningful.	Paraphrasing, summarizing, explaining to someone, making questions and answering them, and making comparisons.
Organization	Designing a layout of the material to differentiate or organize it to make it meaningful.	Developing conceptual maps, schemes, lists, and diagrams.

Source: developed by the authors based on Abdullah et al. (2015), Boruchovitch e Santos (2015), and Weinstein et al. (2011).

After analyzing Table 1, one must consider that the students' means and learning methods are not unique. Each student uses and seeks what s/he considers to be the best or most appropriate so that there is not always a unanimous opinion regarding learning strategies. According to Borges (2016) and Weinstein et al. (2011), some procedures can be helpful for a given student profile, while others may not. For this reason, students should be trained to assess what strategies are the most appropriate for their learning objectives (Boruchovitch, 2006).

Learning strategies are sensitive to the educational environment in which students are inserted (Hall et al., 2004), so that different content and activities may demand new strategies and/or reformulate previous ones. In this sense, Souza (2010) stresses that one must consider the classroom environment, and professors should encourage students to adopt new learning strategies.

Professors can encourage the adoption and knowledge of new learning strategies by providing studying techniques or applying activities that encourage students to reflect upon their learning (Ballantine et al., 2008; Boruchovitch, 1999). Additionally, the combination of strategies, using more than one strategy, is also beneficial and contributes to improved results (Glogger, Schwonke, Holzapfel, Nuckles & Renkl, 2012).

As opposed to what was previously discussed, there is also a lack of learning strategies. According to Boruchovitch et al. (2006), a lack of learning strategies results from negative behaviors that influence the use of learning strategies or even prevent the use of strategies and lack of regulation. Castro et al. (2016) note that the more external pressure a student experiences regarding learning issues, the fewer strategies are used.

The reasons for not using learning strategies or having unfavorable behaviors vary. According to Mateus & Brito (2011) and Araújo, Santos & Alves (2019), however, this study presents one factor that may harm students: using mobile phones during classes. These authors note that mobile phones generally distract students, and the inappropriate use of these devices may harm their learning.

After presenting the main concepts concerning learning strategies, correlated studies addressing students from different fields (García-Perez et al., 2020; Monteiro, Vasconcelos & Almeida, 2005), exclusively addressing students from the Accounting field (Ballantine et al., 2008; Castro et al., 2016; Daciê & Anzilago, 2019; Hall et al., 2004; Lima Filho et al., 2015; Morozini, Cambruzzi & Longo, 2007; Silva & Biavatti; 2018; Vasconcelos & Araújo; 2017), and studies addressing the learning process and learning strategies are presented.

Monteiro et al. (2005) analyzed learning methods among 242 students attending the first year of engineering programs, highlighting that the comprehensive approach, in which students more deeply reflect on the content and a perception of having competencies, was associated with improved academic performance. Therefore, the author emphasized the importance of professors encouraging students to adopt a more reflexive and active role in their learning processes.

García-Perez et al. (2020) conducted a study with students from psychology and sport sciences programs to investigate their decisions concerning learning strategies. Based on a qualitative approach, the authors identified that students adopted strategies mainly during the period of tests. Furthermore, some students always used the same strategies, while others changed strategies according to the content or the format of tests; students with worse performances reported more difficulties using strategies.

In the accounting field, Morozini et al. (2007) aimed to identify the factors that influence or hinder the learning-teaching process from the perspective of 208 students. They identified that the teaching methodology adopted by professors might facilitate the students' learning, and depending on the method, students may even feel more motivated. In this sense, they highlighted the importance of students participating in their learning process.

Considering the students' characteristics and intending to analyze self-regulated learning strategies, Lima Filho et al. (2015) addressed 249 undergraduate Accountancy students and verified that younger female students presented higher levels of self-regulated learning. Based on these results, the authors stressed the importance of learning strategies, considering the need to pay greater attention to students with low levels of self-regulation.

Castro et al. (2016) sought to analyze the relationship between learning strategies and motivation to learn on a sample of 480 undergraduate students attending the Accountancy program of a Brazilian public university. The authors identified a positive association between intrinsic motivation and the use of strategies and between extrinsic motivation and no strategies. This finding shows that the way students conduct their learning is related to their motivation. In a similar study, Daciê and Anzilago (2019) investigated 106 students attending the same program from another institution and verified a positive relationship between intrinsic motivation and in-depth learning strategies.

By conducting a specific analysis of a procedure adopted in cognitive strategies, Vasconcelos and Araújo (2017) investigated the benefits of using conceptual maps in the learning-teaching process. Using a qualitative study, they analyzed the adoption of maps in two courses in the accounting field, addressing 48 students. Among the results, maps stand out, contributing to the development of social and communication skills, the establishment of interdisciplinary connections, and students' autonomy.

Hall et al. (2004) redesigned the structure of an introductory course in the accounting program by including innovating teaching methodologies to assess changes in the students' learning strategies, which were collected using the SPQ (superficial and in-depth). At the end of the intervention, students intensified the use of in-depth learning strategies (reading, seeking connections, and integrating new concepts with previous knowledge) and decreased the use of more superficial strategies.

In line with the previously mentioned study, Ballantine et al. (2008) conducted a longitudinal study during a school year with students from the accounting and business programs of an Irish university to analyze the effect of the method in the use of learning strategies. The authors used the ASSIST, which identifies three learning approaches: in-depth, superficial, and strategic. The findings show that the application of active methodology encouraged students to seek and reinforce in-depth (relating new to previous concepts) and strategic (organizing the study and managing the time available) strategies.

Finally, Silva and Biavatti (2018) analyzed the relationship between students' self-regulated learning profiles, teaching methods, and professors' perceptions of learning. They investigated 202 students and 16 professors from an Accountancy program. The students used metacognitive strategies, which increased as they advanced in the program; the professors reported understanding regarding the methods that contribute to the students' learning and metacognitive skills, even though these were not the most frequently used methods. Additionally, the different teaching methods may have contributed to more frequent use of strategies.

3. Method

3.1 Study design

This study's main objective is to identify what learning strategies newcomer students in an undergraduate Accountancy program adopt and their perceptions. The secondary objective is to verify how professors influence the choice of these learning strategies from students' perspectives. This is a descriptive study with a predominantly qualitative approach. According to Cervo and Bervian (1996, p. 66), "descriptive research observes, analyzes, and correlates facts or phenomena (variables) without manipulating them." These authors state that descriptive studies "seek to discover, with possible prediction, how frequently a phenomenon occurs, its relationship and connection with others, nature, and characteristics."

This study's target population comprises newcomers to the Accounting Science program of a Higher Education Institution located in Minas Gerais, Brazil. It consists of approximately 160 students enrolled in the full-time and evening shifts, attending the 1st and 2nd terms of 2019. Note that admission in this HEI is through its selective process twice a year or through the High School National Exam (ENEM). Eighty slots are available per semester in the full-time and evening shifts.

The HEI selected for this study has an Accounting Sciences program that includes professors working with teaching, research, and extension activities, specifically in the *Programa de Educação Tutorial (PET)* [Tutorial Education Program], in the Master of Business Administration (MBA), and Empresa Junior [Junior Company] (Contábile) and graduate programs (Master's and doctorate). Furthermore, in this institution, this study's authors, together with PET, offered workshops on the use of learning strategies to train newcomers. In addition to these characteristics, note that newcomers were chosen because higher education is the beginning of a new educational cycle that demands learning strategies in which students are responsible for their learning process (Waterkemper & Prado, 2011).

3.2 Data Collection

Data were collected during the workshops called "How do students learn? Learning Strategies in the Teaching-Learning Process" provided to Accounting Sciences undergraduate students attending the 1st and 2nd terms of 2019. The PET offers these workshops in the institution previously mentioned, and professors and students from the Accounting Sciences program provide the training.

The workshops' objective is to present the main learning strategies students can adopt to perform better in the learning process. Hence, practical activities are provided with the application of learning strategies, in which the students play an active role. Note that before the start of the workshop, the professor responsible provided clarification regarding the study to the students, explaining the objective and information concerning the free and informed consent form so they could decide whether they wanted to participate in the study.

Data were collected during the workshops after presenting the main learning strategies. To achieve this study's objective of identifying whether newcomers from the Accountancy program adopt learning strategies, a questionnaire was applied in the first stage of the data collection to identify the strategies students used. The form used was composed of two blocks: the first block addressed the participants' characterization and demographic information such as sex, age, shift, and professional experience, and the second block was intended to identify the students' behavior regarding the use of learning strategies, i.e., the instrument proposed by Boruchovitch et al. (2006) was used.

The instrument developed by Boruchovitch et al. (2006) comprises 20 statements, six concern cognitive strategies, six concern metacognitive strategies, and eight refer to a lack of learning strategies. The students were asked to assign a score from 0 (Never) to 10 (Always) (decimal values could be used) to each statement, considering how strongly they agreed or disagreed with the statements. Hence, the total sum for each construct is 60, 60, and 80 points at most for cognitive, metacognitive, and lack of strategies, respectively. Note that all students attending the workshop participated, completing the instruments used in this study.

To complement the understanding of the results obtained through the questionnaires, in the second stage of the data collection, the students were asked to provide a written report including the strategies they adopt in their learning processes and consider helpful to overcome their main learning obstacles.

To verify the influence of professors on the choice of these strategies, the students were asked to report how professors can help them adopt learning strategies within the school environment. Again, they were ensured that their identities would be kept confidential.

Focus groups (collective interviews) were held with volunteers at the end of the workshops to deepen understanding of the topic under the study. According to Caplan (1990), focus groups can be defined as small groups intended to assess concepts or identify problems. Additionally, Vaughn, Schumm, and Sinagub (1996) use this methodology in studies in the educational field, reporting that it is possible to deepen knowledge of needs using this methodology.

In total, four focus groups were held, two in the first term and two in the second term of 2019, totaling 26 students. The focus groups were mediated by the professor teaching the workshop with the support of graduate students. Focus groups lasted 16 minutes and 18 seconds on average. A mobile phone was used to record the groups, and the reports were later transcribed. The reports were identified by the letter "P" (participant) followed by a sequential number, P1, P2, P3, …, and P26, to preserve the students' identities.

3.3 Study Participants and Data Analysis Procedures

Descriptive analysis was used to treat the responses provided to the questionnaires, and the mean scores the students assigned to the groups of learning strategies (cognitive, metacognitive, and lack of strategies) were obtained. The participants were 132 students who agreed to fill out the questionnaire.

Regarding the focus groups, the first workshop was held in the first term of 2019 and included 15 students, 6 from class A (full-time shift) and 9 from class B (evening shift). The participants from the first term from the full-time shift are referred to as A1P1, A1P2, and so forth. The students from the evening shift are referred to as B1P1, B1P2, and so forth. Eleven students participated in the second workshop held in the second term of 2019: 7 were from the full-time shift and 4 from the evening shift, referred to as A2P1, A2P2…, while those from the evening shift were referred to as B2P1, B2P2, and so forth.

To analyze the reports obtained through the focus groups, a word cloud was initially organized using IRAMUTEQ, software free of charge to analyze qualitative data, to identify how frequently the students mentioned words. Only "adjectives", "nouns", and "verbs" were used as active keywords.

Additionally, content analysis was adopted and included four stages: (i) organization of analysis; (ii) coding; (iii) categorization; and (iv) inferences. According to Bardin (1977), content analysis, which comprises these four stages, uses analysis techniques to find the content of messages using (quantitative or not) indicators that enable relating the conditions of production/reception of messages.

Two categories of analysis were adopted in the qualitative analysis: (i) Learning and Teaching Strategies and (ii) The role of Professors in the Choice of Strategies. These categories were used to analyze the focus groups and the written reports and were based on previous studies, such as Oliveira et al. (2009) and Souza (2010).

4. Analysis of Results

4.1 Descriptive Analysis

During the workshops, a questionnaire was applied to identify the students' characteristics, such as sex, age, shift, and professional experience.

Table 2
Participants' characteristics

Sex		**Shift**	
Female	46.97%	Full time	52.27%
Male	53.03%	Evening	47.73%
Age		**Paid job**	
Up to 19	61.36%	No	55.30%
From 20 to 22	24.24%	Yes, but not in the field	40.91%
From 23 to 25	6.82%	Not reported	3.79%
+ 25 years old	7.58%		

Source: study's data.

According to Table 2, more than half (53.03%) of the respondents were male students, most (61.36%) aged up to 19, while the minority (7.58%) was aged over 25. The shift with the highest number of students enrolled full-time, 55.30% of whom did not work.

Additionally, the questionnaire also enabled identifying the learning strategies the students most frequently identify with and use. The analysis of the types of strategies is presented in Table 3. The total number of each type was considered, ranging from 0 to 60 for cognitive and metacognitive strategies and 0 to 80 for lack of strategies.

Table 3
Learning Strategies

Strategies	Mean	Median	Mode	Minimum	Maximum
Cognitive	31.17	32.00	32.00	0.00	56.00
Metacognitive	50.11	50.00	52.00	33.00	60.00
Absent	39.71	40.00	50.00	4.00	80.00

Source: study's data

Considering the proportion of the total values for each strategy, the figures presented in Table 3 show a predominance of metacognitive strategies. Ribeiro (2003) notes that metacognition consists of recognizing one's knowledge, verifying how one knows and learns. Data show that, on average, the students perceive the importance of the learning process, even though not all the students use the strategies the same way. This result is in line with the findings reported by Lima et al. (2015), who identified that accounting students more frequently used self-assessment, external help, and environment strategies related to metacognition.

Regarding cognitive strategies, note that these enable achieving learning objectives (Ribeiro, 2003), directed to task performance (Souza, 2010). Note that the students used these strategies, as the mean (31.17) was slightly above half of the total value possible (60); a similar result was found for the median (32). However, some students do not adopt any cognitive strategy, as the minimum value found was 0.0.

A lack of strategies is explained by negative behaviors that influence learning strategies, such as, for instance, not adopting any strategy or lack of regulation, as Boruchovitch et al. (2006) note. The mean result for the non-adoption of strategies was 39.71. This is proportionally the lowest mean when compared to the results of the metacognition and cognition groups. Previous evidence (Castro et al., 2016) indicates that external pressure, characteristic of extrinsic motivation, may favor the non-adoption of strategies. In this sense, the relevance of students keeping intrinsic motivation during the undergraduate program is highlighted.

4.2 Qualitative Analysis

4.2.1 Focus Group

The initial analysis of the reports obtained in the focus groups resulted in a word cloud. This word cloud showed the words the students repeated most frequently. As the methodology proposes, adjectives, nouns, and verbs were considered. The cloud is presented in Figure 1.

Analyzing the general frequency, 539 active words mentioned 1,859 times were identified. The words in the center of the word cloud (Figure 1), highlighted by the font size, were the most frequently used during the focus groups. Therefore, the words "professor" (39 mentions), "to think" (33 mentions), and "to study" (32 mentions) were the most frequently used in the students' reports during the interviews, respectively representing 2.1%, 1.78%, and 1.72% of the general frequency.

To understand the meaning of the most frequently repeated words ("professor", "to think," and "study") and confirm the context in which they were adopted, a sub-analysis was performed. Hence, the varied use of the word "professor" is associated with the fact that students believe that professors, with their experience and practice, can significantly influence the students' academic performance. In turn, the verb "to think" was more frequently used to expose opinions regarding learning strategies that were debated and exposed. As for the verb "to study," the students were aware that a good performance depends on a sound and organized study process.

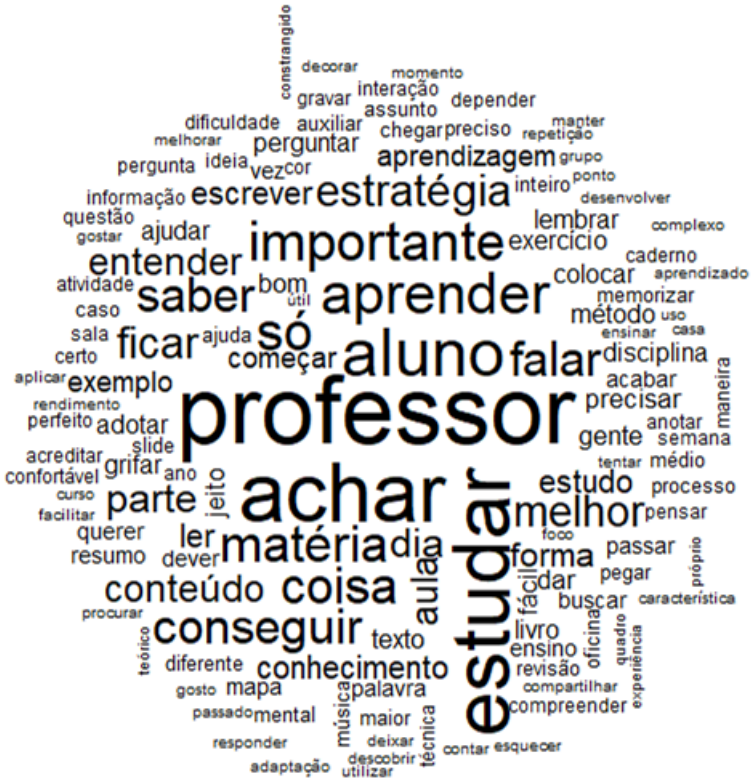

Figure 1. Word Cloud concerning the focus groups' interviews

Source: Study's data.

In addition to the word cloud, some excerpts from the students' reports provided during the focus group are also presented. Initially, we highlight the excerpts that concern the **learning strategies and teaching** category.

> I do mind maps, but mainly I focus on the review part. **I always do mind maps because it is the easiest way to give emphasis**; it's a cycle… if I study today, I have to study and review tomorrow, and then, a week later, seven days later, again, and finally, in 30 days. So, I'll never forget. **The review, I guess that is what remains.** If you only see it once, you may recall one thing or another later on, **but if you keep seeing it, you'll absorb it 100%** (A1P2).

> When a person is free the entire day, she'll certainly find a more intensified form of studying. Adapting the time you have with the need to study interferes with the strategies we adopt. Me, I work and study, so I end up **making a summary and highlighting the parts I find essential.** For me, these are much easier to do because of the little time I have available (B1P4).

> I guess that **studying individually** is very important. Many people like group study and I understand that it is best to **share ideas** because some people are good in one subject and others are good in other subjects. Only that, when I study by myself, I manage to **understand what my difficulty is**, see what I have to **focus** on, and I think it is very important (A2P4).

Learning strategies represent a vital step for the students' learning processes, considering that, as noted by Boruchovitch (1999), learning strategies can prevent learning difficulties. The previous reports show that the students use learning strategies to improve acquired knowledge and memorize it over time. The adoption of strategies also enables students to absorb the most from teaching and optimize time, which in many cases, is restricted.

Still, regarding strategies, one of the students' excerpts regarding mind maps stands out. This report corroborates the findings reported by Vasconcelos and Araújo (2017), who noted the importance of maps to establish connections. In turn, the second report shows that strategies may vary depending on the student's conditions. In this regard, García-Perez et al. (2020) report that some aspects may affect the decision of which strategies to adopt. Additionally, there is a report concerning the importance of understanding one's difficulties, an action characteristic of metacognitive strategies, which can boost learning, according to Oliveira et al. (2009).

Note that the students perceive the **important role professors play in the selection of strategies**, as the following excerpts show:

> The professor has already studied that subject. So, in his learning process, he also developed **techniques that can be shared with the students**, contributing to their learning. [...] For instance, when I start studying a given subject, which I'm not familiar with, I'll have difficulties at first. So, the professor can provide some **guidance on what aspects are important to achieve greater/better performance**. So, his **experience** with that content will facilitate the process (A1P4).

> The strategies a professor uses, whether he **follows a book** as a guide, or **only writes on the blackboard**, or uses **a PowerPoint presentation**, each person learns differently. So, **if he diversifies the strategy, he may reach several students** (A2P1).

> I guess that, if professors ask for **seminars**, regardless of whether the subject is theoretical or less conceptual, presenting a seminar demands all techniques because it is not only about putting a text on a PowerPoint presentation, you have to **put on a topic and explain it**. Thus, it helps a lot in the learning process (A1P1).

Morozini et al. (2007) state that students are influenced by professors, considering that professors studied intensively and for a long time the content they teach in classes, so they know the subject, and it comforts students. In this study, the students reported that professors should teach their classes less complexly, providing more examples of their experiences and diversifying their teaching strategies. Thus, these reports suggest that the methods adopted by professors can somehow influence the students' use of strategies. Hence, depending on a professor's strategy, s/he may reach all types of students, such as those who more easily learn theory or prefer more practical tasks.

Other studies also report the influence of professors, such as Monteiro et al. (2005) and Souza (2010), who suggest that professors can encourage students to reflect and be more active in their learning process. Additionally, Silva and Biavatti (2018) suggest that a variety of teaching methods adopted by professors can broaden the students' use of self-regulated learning strategies.

4.2.2 Analysis of Reports

Still considering data from the qualitative analysis, as mentioned in the methods section, during the workshops held in the two terms of 2019, the participants were asked to report their opinions on the learning strategies they had been adopted in their learning process, and which they considered helpful to overcome learning obstacles. In addition, they were asked to report how professors can help to adopt learning strategies in the school environment.

The data extracted from the two workshops held in the first term of 2019 refer to the reports of 70 students, 37 from class A and 33 from class B. Sixty-six students participated in the other two workshops held in the second term of 2019: 33 in class A and 33 in class B. Note that all the participants agreed with the use of their reports in this study.

A word cloud resulted from the material extracted from the reports and facilitated visualizing the words most frequently used by the students. This word cloud (Figure 2) contains "adjectives", "nouns", and "verbs", which were used as active keywords.

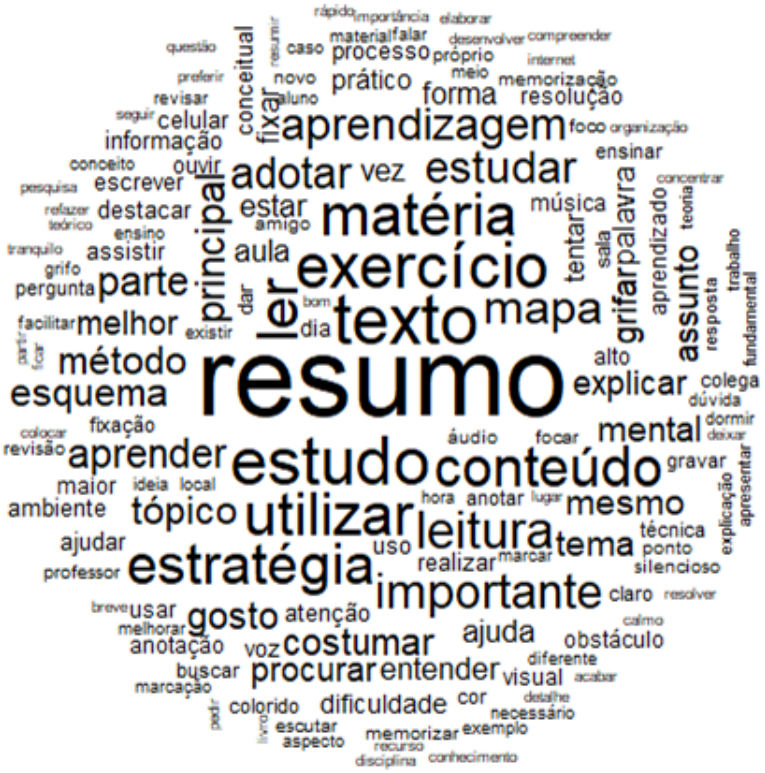

Figure 2. Word cloud of the reports

Source: study's data.

The general frequency identified 594 active words written 2,177 times. The words in the center of the word cloud (Figure 2) and highlighted by the font size are used most frequently in the reports. The words "summary" (66 mentions), "text" (38 mentions), and "study" (37 mentions) were the most frequent and represent 3.03%, 1.75%, and 1.70% o the general frequency, respectively.

A sub-analysis was performed to understand the meanings of the most frequently repeated words ("summary", "text", and "study"). Hence, the frequent use of the word "summary" is linked to the fact that the students frequently adopted this learning strategy and believed that summaries and mind maps help consolidate and understand the content. Likewise, the word "text" reinforces that a good way to achieve good results also depends on reading texts and extracting the main content. Finally, the word "study" emerges to intensify all the methods adopted in each student's study.

Some excerpts from the students' reports, related to the **learning and teaching strategies**, are presented.

> I usually summarize content in my learning process, but I do **quick summaries divided into topics with very few notes**. I like **using colored pens and changing the letter size and shape** [...] (B1P3).

> I generally make **schemes with parts I highlighted from the text**. When the content is more complex, I watch **video classes**. **Working on exercise lists or explaining them to a classmate** helps me to consolidate learning (A1P9).

> **Reading, seeking to identify keywords and key statements in the text**. Then, I read it again, only this time, **I ask and answer questions.** Next, **I try to explain the content I studied to someone** (A1P35).

Castro et al. (2016) consider that students seek learning strategies to obtain more consistent knowledge. As reported, the students seek means they identify to help them in the learning process, simplifying content and facilitating understanding, promoting better results, and reinforcing what Souza (2010) suggested.

The reports also reveal the students' perception regarding the **influence of professors on their choice of strategies.**

> Adopting **different audiovisual strategies**. **Listening to the students** about ways and better alternatives each student chooses to study (A1P36).

> The professors can be **more dynamic** during classes, leaving the conventional structure and adopting **measures that stimulate the class**, such as case studies (**linking content with real-world situations**) (A1P31).

> [...] it would help to more frequently explore the **exercises** related to the subject, solve them during classes more frequently (A1P25).

> One alternative would be to **re-discuss ideas from studies** that improved a student's performance, or **activities that can help overcome the difficulties** a student may be facing (B2P9).

> **Individually helping** with students' difficulties, **helping them to devise strategies to improve learning** (B2P6).

According to the reports, professors should always obtain updated knowledge to teach their classes. There are currently numerous channels and technologies focused on the teaching-learning process, which promote greater interactivity between students and professors. These reports reinforce the importance of professors constantly receiving training and updating their knowledge to keep up and support students with content and studying strategies.

Immediately after the statements addressing learning strategies at the end of the questionnaire, the respondents had to provide a written answer to an additional question on the main distractions they had to deal with at the time of studying. The most frequent answers regarding distractions that may harm studying included the use of the Internet, social networks, mobile phones, and electronic devices in general.

Note that in addition to the scale addressing learning strategies, there was also a question on distractions to identify whether the students listened to music, watched TV, and/or accessed the Internet while studying or doing homework. The mean score the students assigned was 4.5 out of a maximum of 10. This mean was considered low considering the easy access and availability of music, TV, and Internet in people's routines. On the other hand, some students assigned the maximum score (10); these students frequently access electronic media.

When considering some students' written responses, social networks emerged as a reason for procrastination. Mateus and Brito (2011) show that students connected to the Internet tend to disperse during classes, whether they access social networks or communicate with others at inappropriate times. Hence, it is not surprising that research indicates that mobile phones are the most distracting when studying, together with social networks and the Internet, all of which are interconnected.

Excessively connecting with the Internet makes students postpone their studies, potentially influencing their academic performance. Araújo, Santos, and Alves (2019) note that the inappropriate use of mobile phones during classes or when working on academic tasks is directly linked to the students' academic performance. Lack of focus, companions, external noise, and tiredness distract some students, but nothing compares to mobile phones.

In summary, students resort to learning strategies to support their studies, whether by taking notes, reading, or solving exercises. Additionally, the role of professors is to support students to use strategies and improve their learning. However, one has to pay attention to distractions that may harm their performance, such as mobile phones, which can hinder the learning process, instead of promoting it.

5. Final Considerations

This study's objective was to verify whether college students entering an Accounting Sciences program adopted learning strategies and their perceptions regarding the role of professors in the choice of these strategies. Hence, four classes of students attending a public university completed a questionnaire addressing the use of learning strategies (cognitive and metacognitive) and their lack. The students also wrote reports, and some participated in focus groups answering questions regarding the use of strategies.

Overall, considering the groups of learning strategies analyzed, the students most frequently adopt metacognitive strategies, which consist of being aware of one's knowledge and how one learns (Ribeiro, 2003). Hence, the students generally perceived and recognized the importance of the learning process, and many adopted learning strategies. Some students did not adopt any strategy to support learning though. In addition, it is worth noting the report of some students who reported distractions associated with mobile phones, the Internet, among others, which hinder their studies.

The students' strategies include tools such as mind maps, summaries, reviews, and sharing ideas, among others. Boruchovitch (1999) noted that these tools are part of the learning process and are intended to prevent learning difficulties. Additionally, this study's reports show that professors play a vital role in the students' choice of learning strategies. Students noted that professors have experience with the content taught and can share techniques for students to improve their studying and performance. These findings corroborate previous studies (Ballantine, Duff & Larres, 2008; Hall et al., 2004; Morozini et al., 2007; Oliveira et al., 2009; Silva & Biavatti; 2018) that report the influence of professors in the students' behaviors.

Regarding the professors, the importance of diversifying the teaching methodologies during classes became apparent. This procedure can contribute to the students' learning process and heed varied learning styles, encouraging the use of different strategies. The professors can also work with the program's coordinators to promote institutional activities to present potential learning strategies.

This study contributes to understanding how students newly enrolled in the Accountancy program recognize, adopt, and put learning strategies into practice. The results show that most participants adopted strategies during high school, which is considered a positive aspect. It is important to monitor students during the undergraduate program though, considering that previous evidence reveals (Silva & Biavatti, 2018; Castro et al., 2016) that factors such as the program's term and even motivation may affect the use of these learning strategies.

Therefore, even though the findings of this study obtained from newcomers were similar to the results of previous studies with senior students, especially those addressing accounting programs, higher education requires students to deal with more demands and personal challenges, such as the beginning of professional life. In this sense, we highlight the reports of some students noting that having a paid job while attending college may affect one's learning strategies. It indicates that when students enter college, they need to be prepared to reconcile various other activities with studies. It also reinforces the importance of professors preparing to help students seek strategies to get the most from learning.

As for delimitations, this study addressed the students of the Accountancy program from a single institution, and regarding limitations, it was conducted at a single point in time, in a public institution. Additionally, the focus groups included fewer participants, considering that adherence was voluntary. Therefore, future studies are suggested to include other public and private teaching institutions, verify why students do not implement learning strategies or even investigate the same population addressed in this study, though at the end of the program. The maturity acquired throughout the program, student-student or professor-student interactions, and/or environment may impact the adoption of strategies among these students.

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Method: to collect the data, a structured questionnaire was used, elaborated based on the relevant literature. The questionnaire was tested and applied to a sample of Brazilian accountants and businessmen during 2017. In the analysis of these data, content analysis was applied and statistical tests were used to establish relations between the answers obtained.

Results: the main findings of this study indicate that the expansion of accounting education and research in Brazil was essential for the growth of the economy, according to the respondents' perception, despite the impression that accountants and businessmen need to make better use of the accounting information.

Contributions: from the academic viewpoint, the evidences from this research contribute to fill of an important existing gap in the Brazilian literature. What the market is concerned, they contribute by providing evidence that, despite its perceived relevance, its users need to make better use of the accounting information.

Key words: Education: Research; Accounting.

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