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Anxiety in Accounting Graduate

A ansiedade dos mestrandos e doutorandos em contabilidade

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Keywords
Anxiety.
Master.
Doctorate.
Self-efficacy.
Motivation.

Abstract

This research analyzes the effect of motivation, self-efficacy, and sociodemographic variables on the anxiety of master's and doctoral accounting students. The sample consisted of 246 master's students and 76 doctoral students from all graduate accounting programs in Brazil. The study used the State-Trait Anxiety Inventory to collect data and determine the participants' level of anxiety; the General Self-Efficacy Scale to find their level of self-efficacy; and the Academic Motivation Scale to assess their level of intrinsic, extrinsic, and amotivation. Data analysis used backward stepwise linear regression. The results revealed a predominance of anxiety in female students and concluded that anxiety is negative and significantly affected by self-efficacy. It is also positive and significantly affected by extrinsic motivation by external control and by amotivation. Finally, the research identified significant predictors to analyze anxiety such as the level of motivation to continue studying, being under 24 years old, the type of graduate (whether master's or doctoral), receiving psychiatric/psychological support, receiving an academic scholarship, performance, and gender.

Palavras-chave
Ansiedade.
Mestrado.
Doutorado.
Autoeficácia.
Motivação

Resumo

Esta pesquisa teve como objetivo analisar o efeito que a motivação, a autoeficácia e variáveis sociodemográficas exercem sobre a ansiedade dos mestrandos e doutorandos em Contabilidade. A amostra foi composta por 246 mestrandos e 76 doutorandos de todos os programas de mestrado e doutorado em Contabilidade do Brasil. Os instrumentos de coleta de dados utilizados foram o Inventário de Ansiedade Traço, para determinar o nível de ansiedade; a Escala de Autoeficácia Geral Percebida, para levantar o nível de autoeficácia; e a Escala de Motivação Acadêmica, para determinar o nível de motivação intrínseca e extrínseca e de desmotivação. Os dados foram analisados através de regressão linear, utilizando a técnica Stepwise Backward. Os resultados revelaram uma predominância de ansiedade nas discentes do gênero feminino em comparação aos discentes do gênero masculino. Em relação ao objetivo primário do trabalho, concluiu-se que a ansiedade é negativa e significativamente impactada pela autoeficácia. Contudo, ela é positiva e significativamente impactada pela motivação extrínseca por controle externo e pela desmotivação. Concluiu-se, também, que preditores, como o nível de motivação para prosseguir nos estudos, ter idade abaixo de 24 anos, o tipo de pós-graduação (se mestrado ou doutorado), receber apoio psiquiátrico/psicológico, receber bolsa acadêmica, o desempenho e o gênero, são significativos para a análise da ansiedade.

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Pratical implications

Having information about the student's condition increases the chances of implementing effective policies to avoid damaging interactions. Thus, seeking anxiety modulators for graduate students is associated with searching for strategies to prevent or reduce students' mental illness, dropout, or insufficient training.

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1 INTRODUCTION

Accounting is an important area of scientific knowledge that prepares decision-makers to work in various segments that require accounting knowledge, such as corporate – and other organizations – economic and asset control, and in the assessment of rights and obligations (Conselho Federal de Contabilidade, 2003). For Iudícibus, Martins, and Carvalho (2005), accounting is a fundamental field of knowledge that emerges from methods grounded on scientific rationality, which allows capturing and processing economic and financial facts to inform decision-making.

Accounting decision-makers learn, develop, and improve accounting practices in existing undergraduate and graduates school. Therefore, master's and doctoral degree are particularly important since they are a path to prepare professors who continue the work of training accounting professionals (Brazilian law 9394 of 1996 establishes that one-third of the faculty of undergraduate courses must hold master's or doctoral degrees). In addition to preparing future practitioners, accounting professors in higher education institutions (HEI) carry out scietific research (Conselho de Educação Superior, 1965).

According to Evans, Bira, Gastelum, Weiss, and Vanderford (2018), an individual must experience healthy and motivating training to reach full potential and produce knowledge to benefit all stakeholders (family, society, graduate program, for example). There is a growing concern about the impact of current teaching conditions on students' mental health, especially at the educational levels of greatest demand, i.e., the graduate programs known in Brazil as stricto sensu (Levecque, Anseel, Beuckelaer, Van der Heyden, & Gisle, 2017).

Part of the concern over the conditions of accounting education comes from research data that proved that individuals who have psychological disorders tend to have a lower academic performance (Reis, Miranda, & Freitas, 2017). This study addresses this issue, contributing to the important debate on how accounting professionals are trained in Brazil.

For this reason, research about impact of mental suffering on the graduate environment is often linked to surveys covering several courses (Betz, 1978; Evans et al., 2018). This choice occurs because, although anxiety disorders are clinical conditions, their symptoms are primary and not derived from other psychiatric conditions; "anxious symptoms (not anxiety itself) are frequent in other psychiatric disorders" (Castillo, Recondo, Asbahr, & Manfro, 2000, p. 20). Thus, when studying anxiety, it is more likely to recognize anxious symptoms derived from other psychiatric conditions (such as depression, for example) when exploring the accounting student's mental health.

In addition to researching the state of anxiety of graduate students and looking for intervention strategies, Weiner (1990) recommended studying the impact of each and any variable on the educational process, mixing variables that analyze emotions and disturbances. In this sense, motivation and self-efficacy are effective anxiety modulators, when motivation is understood as in Vallerand's (1997) hierarchical model, considering dimensions and types (intrinsic, extrinsic, and amotivation; and self-efficacy refers to Bandura's theoretical proposition (1977), where believing in personal self-efficacy is an important cognitive, motivational and behavioral factor. Thus, because intrinsic motivation favors high-quality learning (Ryan & Deci, 2000), and because self-efficacy influences commitment, perseverance, and task choice (Schunk, 1991), both contribute to an environment favorable to students' full development, helping to reduce anxiety.

Although several studies explore students' mental health related to the academic environment, the literature still does not explain how the environment affects mental health, specifically, in master's and doctoral degrees in accounting. Also, the role of other variables, such as gender, self-efficacy, motivation, and performance, in students' mental health is unclear. Against this backdrop, this research addresses the research question: what effects do motivation, self-efficacy, and sociodemographic variables have on the anxiety of accounting graduate? The objective of the study is, therefore, to identify and analyze such effects.

This work was structured in five parts, including this introduction presenting the research problem and objectives. The next section offers a literature review, followed by a third section presenting the methodology. The fourth section shows the data and analyses, and the fifth and last section exposes the conclusion.

2 LITERATURE REVIEW

2.1 Mental suffering in graduate school

A graduation program is a milestone in students' lives, who have to adapt to face new demands, dealing with situations that have never been experienced before (Tyssen & Vaglum, 2002; Levecque et al., 2017). This context of changes is not restricted to the academic environment but also involves family relationships and students' physical and mental well-being. The graduate school introduces challenges that are often too complex for the students' mental capacity (Tyssen & Vaglum, 2002; Levecque et al., 2017).

Individuals without coping skills based on previous experiences or the ability to adapt to the demands may be subject to psychological suffering such as anxiety, depression, stress, and other psychosomatic disorders, and damages psychophysiological health (Horta, Horta, Horta, 2012; Andrade et al., 2016; Oliveira, 2019). This means that psychological distress can result in minor psychiatric disorders or even trigger the onset of critical episodes of serious or persistent mental disorders (Horta et al., 2012).

This psychic malaise has significant prevalence rates in higher education institutions (58%), whereas in society in general, the rates range between 8% to 23% (Andrade et al., 2016; Oliveira, 2019). This is certainly an indication that higher education, especially graduate school, form an environment of high psycho-emotional demands for students.

The demanding academic environment requires attention since the students' emotional exhaustion can trigger severe health conditions. In addition to disorders involving high levels of anxiety, stress, and depression, there are repercussions regarding students' performance (Reis et al., 2017), substance abuse (Horta et al., 2012; Oliveira, 2019), and, in extreme cases, suicide (Garcia-Williams, Moffitt & Kaslow, 2014; Tyssen & Vaglum, 2002).

2.2 Anxiety

Among the various definitions of anxiety, Freud's stands out. He defined it as something that feels like the result of a mental conflict, emphasizing that anxiety acts on behavioral motivation and helps to deal with threatening situations. However, in high intensity, it is considered a psychiatric disorder (Weiner & Craighead, 2009). On the one hand, anxiety may be observed as transitory and with effects considered favorable to behavior. On the other hand, it may be present as a persistent aspect of behavior, considered, in this case, as a pathological condition with unfavorable effects on the body (Neiva, 2010).

According to Spielberger (1972), the study of anxiety requires distinguishing state anxiety and trait anxiety:

> The state of anxiety (A-state) is conceptualized as a transient emotional state or condition of the human organism that is characterized by unpleasant feelings of tension and apprehension consciously perceived, and by an increase in the activity of the autonomic nervous system. A-state scores can vary in intensity and fluctuate over time. The anxiety trait (A-trait) refers to relatively stable individual differences in anxiety proneness [...] (Biaggio, Natalício, & Spielberger, 1977, pp. 31-32, our translation).

In other words, the A-trait is related to the characteristic of being anxious, while the A-state is related to feeling anxious (Spielberger, 1966). Thus, it is observed that the A-trait is a more stable concept over time, less volatile under momentary environmental conditions, so it was chosen as the object of this study. Figure 1 presents the concept State-Trait Anxiety Inventory and how it acts on behavior.

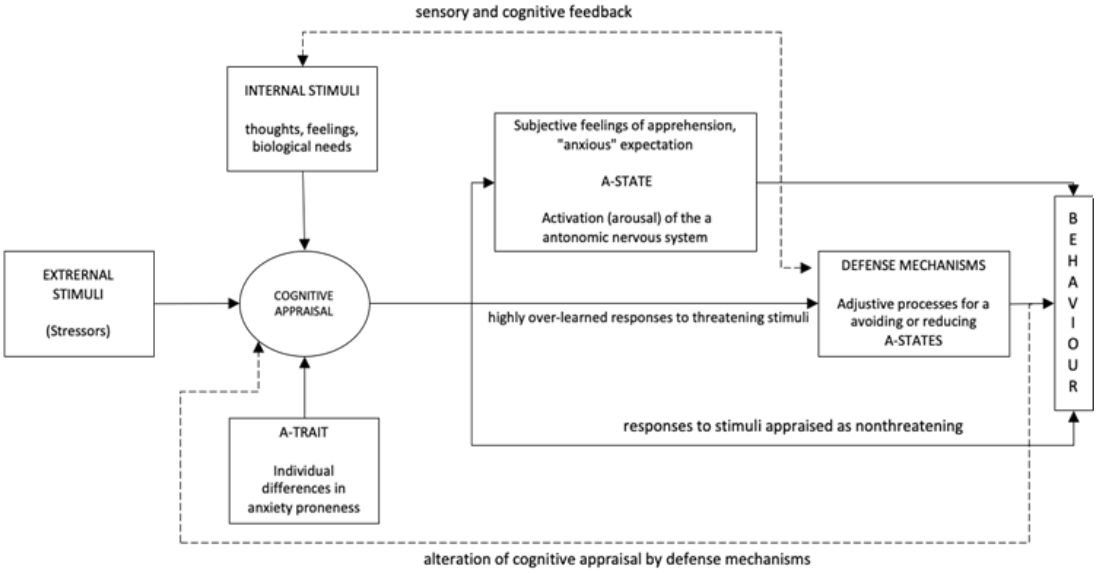

Figure 1. Conception of Spielberger's State-Trait Anxiety Inventory (1966)
Source: Spielberg (1966, p. 17)

As shown in Figure 1, the cognitive appraisal of an external stimulus causes the activation of the A-State and activates the body's defense mechanisms. This appraisal can trigger a sequence of behaviors, which cause, for example, the individual to avoid the situation, or use defensive maneuvers (Spielberger, 1966). Bringing this information to the educational context, it is clear that avoidance behavior is detrimental to performance, as it acts contrary to the establishment of goals, in the same way that exaggerated activation of the autonomous nervous system can impair learning.

2.3 Self-efficacy

The work by Bandura (1977) is the main reference in the study of self-efficacy. The author proposed a cognitive mechanism that explains and modulates behavior in several domains in the execution of tasks. This mechanism is defined as self-efficacy belief, perception, or expectation. Schunk (1991) clarifies that, since Bandura's seminal work, several studies have confirmed self-efficacy as a mechanism capable of making behavioral changes and predicting results, such as academic achievements and career choice.

In the educational environment, "Self-efficacy refers to beliefs about one's capabilities to learn or perform behaviors at designated levels" (Schunk & Pajares, 2001, p. 2). It is a belief belonging to the class of expectations related to the self regarding the individual's self-judgment of being able to perform a certain educational task with a required quality level (Bzuneck, 2001).

The perception of self-efficacy presupposes that to perform an activity the individual has the necessary skills to behave in a certain way. Therefore, individuals who consider themselves more effective mobilize more cognitive resources and, consequently, obtain better performance (Nogueira & Mesquita, 1992).

For Bandura (1977), the self-efficacy perception can be created, reinforced, or reduced because of the influence of the environment through information sources such as personal performance, vicarious experience, verbal persuasion of third parties, and through the interpretation of emotional state. Performance achievements are the most influential source of self-efficacy and relate to an individual's successfully completed past achievements.

Vicarious experiences are an important source of self-efficacy, referring to the expectation derived from observation. Thus, although not directly involved in the task, the observation of another individual, conveys the belief that the person is also capable of performing that behavior (Serpa, 2012). Verbal persuasion such as feedback, is the third source of self-efficacy. Feedback is communicated to the student, preferably, about their positive qualities.

Finally, people judge their self-efficacy by interpreting their emotional state. According to Bandura (1977), as high emotional activation weakens performance, success is greater in individuals who are not affected by aversive excitation since it can arouse high levels of anxiety, which exceed the real fear experienced. The information derived from self-efficacy sources goes through cognitive processing that considers the level, how general, and how strong is the self-efficacy belief. In addition, the cognitive process contemplates contextual and situational factors, which may be integrated with the individual's self-efficacy belief (Bandura, 1977).

2.4 Motivation

The term motivation has several meanings and various psychological approaches (Witter, 1984), such as the psychoanalytic approach, which understands that the unconscious guides motivation to satisfy aspirations and sexual desire. Another approach is presented in Maslow's theory, which categorized motivation according to a hierarchy of importance (Bueno, 2002; Maslow, 1943).

Among the motivational theories available, this study used the self-determination theory, elaborated by Deci and Rayan in the 1970s (Araujo, 2015), influenced by White's propositions (1975). More recently, Ryan and Deci (2000) confirmed the proposition of a continuum of self-determination and clarified that the self-determination theory distinguishes different types of motivation based on different reasons or objectives that give rise to an action, the most basic distinction being between intrinsic and extrinsic motivation:

> (1) intrinsic motivation—the drive to pursue an activity simply for the pleasure or satisfaction derived from it, (2) extrinsic motivation—pursuing an activity out of a sense of obligation, or as a means to an end, and (3) amotivation—the absence of intent or drive to pursue an activity due to one's not valuing the activity, feeling incompetent, or feeling unable to obtain a desired outcome (Fairchild, Horst, Finney, & Barron, 2005, p. 332).

The self-determination theory was tested and confirmed (Fairchild et al., 2005), being considered a macro theory of motivation, internationally recognized and referenced in the field of education (Araujo, 2015). Thus, for having these three dimensions of analysis: extrinsic motivation (subscales: introjection, external control, identification); intrinsic motivation (subscales: to accomplish, to know, and to experience stimulation); and amotivation, the theory of self-determination was chosen as a basis for the motivational analysis of this study (Vallerand, 1997; Viana, 2012).

3 METHODOLOGY

3.1 Data collection instruments

The data collection instrument had an initial part with sociodemographic variables followed by the State-Trait Anxiety Inventory, classified by the general self-efficacy scale and, finally, by the academic motivation scale. The study was registered and approved by the National Research Ethics Commission under the number 97431018.1.0000.5149. The initial part of the instrument and the three scales applied underwent pre-tests even though the instrument was already validated in Brazil. No identification was requested from participants, who signed a consent form and were ensured anonymity.

The State-Trait Anxiety Inventory was used to assess anxiety (Spielberger & Gorsuch, 1966; Spielberger, Gorsuch, & Lushene, 1970). The inventory is composed of a 4-point Likert scale in order to determine anxiety that the individual feels most of the time. This instrument was translated and validated by Biaggio *et al.* (1977).

Self-efficacy was measured using the Perceived General Self-Efficacy Scale created by Schwarzer and Jerusalem, which was adapted to the Brazilian context by Teixeira, Dias, and Dell'Aglio (2012). The instrument consists of a 4-point Likert scale of ten items (Schwarzer, Bäßler, Kwiatek, Schröder, & Zhang, 1997).

Finally, to measure motivation, the Academic Motivation Scale was used, developed by Vallerand *et al.* (1992), based on the French version Echelle de Motivation en Education (EME). This instrument consists of 28 items, arranged on a 7-point Likert scale. This study used a Brazilian version of the scale, already applied in a study by Sobral (2003). The studies' results for the three scales support the validity and reliability of the instruments in the university environment.

3.2 Data processing

For systematization and data analysis, Microsoft Excel® and Stata 12® software were used, with a minimum significance level of 10%. The variables in this study were chosen based on the theoretical framework or the author's perception of the influence of the variable on anxiety. Table 1 describes the variables used in the regression model.

A multiple linear regression model was generated with the variable presented in Chart 1 using the backward stepwise technique, in which the dependent variable was anxiety. The control variables were: age, gender, marital status, type of graduate (masters or doctorate), support, residence, and demand. The explanatory variables were: performance, motivation to continue studying, expected results, self-efficacy, intrinsic motivation to know, intrinsic motivation to accomplish, intrinsic motivation to experience stimulation, extrinsic motivation by identification, extrinsic motivation by introjection, extrinsic motivation by external control, and amotivation, as presented in equation 1.

$$Anxiety = \alpha_1 + \beta_1 Dummy_{age} + \beta_2 Dummy_{Gender} + \beta_3 Dummy_{Mar\_Status} + \beta_4 Dummy_{Type\_Grad} + \beta_5 Dummy_{Support} + \beta_6 Dummy_{Residence} + \beta_7 Dummy_{Demand} + \beta_8 Performance + \beta_9 Motivation\_Continue + \beta_{10} Expected\_Result + \beta_{11} Self\text{-}Efficacy + \beta_{12} IM\_Know + \beta_{13} IM\_Accomplish + \beta_{14} IM\_Stimulation + \beta_{15} EM\_Identification + \beta_{16} EM\_Introjection + \beta_{17} EM\_Control + \beta_{18} Amotivation$$

Variable	Description	Mesure
Anxiety	Describe the anxiety	Numeric value ranging from 20 to 80
Age	State your age	Dummy variable for age range every 5 years
Gender	Describe which gender you identify with	Dummy variable will assume the value 1 if the student is male and 0 if the student is female
Marital status	State your marital status	Dummy variable will assume the value 1 if the student is married/stable union and 0 in other conditions
Type of graduate school	Describe the type of graduate school you are taking	Dummy variable for each type of graduate degree (Masters or Doctorate)
Residence	Describe if the student had to move from the place they lived to attend graduate school, losing family support	Dummy variable for each type of residence option
Performance	Describe the average score that the student obtained in graduate school	Numeric value ranging from 0 to 100
Support	Describe if the student obtained support in the form of a master's scholarship or if they requested psychological support	Dummy variable for each answer option
Demand	Describe if the student had paid employment while attending the program	Dummy variable that assumed the value of 1 for Yes and 0 for No
Motivation to continue studying	Describe the student's motivation to continue studying	Numeric value ranging from 0 to 100
Expected result	Describe the grade that the student hoped to obtain upon entering graduate school	Numeric value ranging from 0 to 100
Self-efficacy	Describe Self-efficacy	Numeric value ranging from 10 to 40
IM* for knowledge	Describe Intrinsic Motivation to know	Numeric value ranging from 4 to 28
IM to accomplish	Describe the intrinsic motivation to acomplish	Numeric value ranging from 4 to 28
IM experience stimulation	Describe the intrinsic motivation to experience stimulation	Numeric value ranging from 4 to 28
EM** identification	Describe extrinsic motivation by identification	Numeric value ranging from 4 to 28
EM introjection	Describe extrinsic motivation by introjection	Numeric value ranging from 4 to 28
EM external control	Describe extrinsic motivation by external control	Numeric value ranging from 4 to 28
Amotivation	Describe the Amotivation	Numeric value ranging from 4 to 28

Chart 1. Variables used in the study
Source: elaborated by the authors.
Note: *IM= Intrinsic Motivation, **EM= Extrinsic Motivation.

3.3 Research hypotheses

Based on Vallerand's (1997) hierarchical model, it was possible to observe positive and negative consequences related to motivational dimensions, in which intrinsic motivations generate more positive consequences in behavior, reducing anxiety. On the other hand, the dimensions of extrinsic motivation and amotivation generate more negative consequences, increasing anxiety (Vallerand, 1997).

When a student perceives to be self-effective, they reduce the anxiety experienced when confronted with a task, as found in the research by Smith (1989). Thus, self-efficacy should be negative and significantly related to anxiety. Finally, studies have shown that anxiety is more frequent in female students (Iqbal, Gupta, & Venkatarao, 2018). Therefore, considering the above and the literature reviewed, the study will test the following hypotheses:

H_1: Self-efficacy negatively and significantly affects anxiety.

H_2: The dimensions of extrinsic motivation positively and significantly affect anxiety.

H_3: Amotivation positively and significantly affects anxiety.

H_4: The dimensions of intrinsic motivation negatively and significantly affect anxiety.

H_5: Female students are statistically and significantly more anxious than male students.

4 PRESENTATION AND DISCUSSION OF RESULTS

The submission of the research instrument to graduate accounting students via the Internet resulted in a sample of 246 master's and 76 doctoral students from all master's and doctoral accounting programs in Brazil. The respondents were 38 years old on average, the majority were female (52%), married (48%), who did not seek psychological support (90%) or scholarship (61%). The majority were in paid employment while attending the program (65%) (Table 1).

Table 1. Descriptive statistic of the sample

Variable		Total	%
Gender	Female	169	52%
	Male	153	48%
Marital status	Married/stable union	156	48%
	Single	150	47%
	Other	16	5%
Graduate School	Master's	246	76%
	Doctoral	76	24%
Residence	Moved house	273	85%
	Did not moved house	49	15%
Psychological support	Yes	33	10%
	No	289	90%
Scholarship	Yes	126	39%
	No	196	61%
Demand	Payed employment	209	65%
	Not employed	113	35%

Source: elaborated by the authors.

This research set out to test whether and how anxiety behavior varies in graduate students, according to gender. It is noteworthy that Cronbach's Alpha of the three scales analyzed was above 0.7, demonstrating the reliability of the instruments. Table 2 shows scores of anxiety, in general, and per gender.

Table 2. Statistics of anxiety (general and per gender)

Description	Geral (N = 322)	Female (N = 169)	Male (N = 153)
Mean	42.3	44.9	39.4
Median	41.0	44.0	38.0
Standard deviation	11.4	11.6	10.4
Minimum	20.0	20.0	22.0
Maximum	75.0	72.0	75.0
First quartile	33.0	37.0	32.0

Source: elaborated by the authors.

Female students reached, on average, 42.3 points, and male students, on average, 39.4. The A-trait scores observed in the analysis of both male and female students were higher than the scores of the study by Spielberger, Gorsuch, and Lushene (1979), which analyzed a sample of Brazilian university students in Rio de Janeiro (female 41.3 points; male 38.04 points).

When researching university students in the Brazilian states of São Paulo and Roraima, Borine (2011) found that male students had a score of 42.4 points and female students 47.0 points in the A-trait questionnaire. These numbers are higher than those found in this study. About the variability of results, even though the different studies work with university students, Spielberger *et al.* (1979) recommend analyzing anxiety considering the nuances of the context of the population in which the questionnaire is applied.

For this reason, the distribution of anxiety in this study considered the tertiles of the population. The minimum value of the scale was 20, and the maximum was 75. The sample's amplitude is 55 points, and the division of this value by three informs each tertile's amplitude. Therefore, the first tertile ranges from 20 points to 38.33 points; the second tertile, from 38.34 points to 56.67 points; and the third tertile, from 56.68 points to 75 points, considering the first tertile as low anxiety, the second of moderate anxiety and the third of high anxiety.

This distribution showed that 39.1% of the sample (126 students) have low anxiety, 48.1% (155 students) have moderate anxiety, and 12.7% (41 students) have high anxiety. Separating this result according to gender, of the 39.1% low anxiety students, 38.9% (49 students) are female, and 61.1% are male (77 students). Of the 48.1% moderate anxiety students, 57.4% (89 students) are female and 42.6% (66 students) are male. Finally, of the 12.7% of students with high anxiety, 75.6% (31 students) are female, and 24.4% (10 students) are male. Thus, the findings show that female graduate students are more often in the second and, especially, in the third tertile of the sample, where participants are more anxious.

This result led to analyze whether the mean values of anxiety in female students are statistically higher than the mean values of anxiety in male students. Thus, the Mann-Whitney test of difference in means was applied. The p-value = .00 shows that the male gender has a significant anxiety score and is statistically lower than the female gender score.

The results obtained corroborate the literature, where, systematically, female individuals present a higher anxiety score than male individuals, even when analyzing different education programs and types of institutions (Simon & Thomas, 1983). Given the above, hypothesis H_5 (female students are statistically and significantly more anxious than male students), was confirmed.

As for the other research variables, the mean obtained from the respondents was 85.0 points. The mean was lower than the variable expected result (85.8) by only 0.8 points, which was not considered statistically different (normality test – p-value < .01, association test – p-value < .01). The variable motivation to continue studying reached approximately 64% of the maximum score, while the students' perception of self-efficacy reached 80% of the maximum score. The results for the variables' internal motivation to know (78%) and external motivation of identification (76%) stood out (Table 3).

Table 3. Descriptive statistics of variables

Variable	Mean	Median	Mode	Minimum	Maximum	Standard Deviation	Variance
Age	33.7	31	27	18	68	9.2	84.5
Performance	85.0	85	85	65	100	7.3	53.0
Expected result	85.8	90	90	0	100	10.7	113.5
Motivation to continue studying	64.4	72	100	0	100	31.6	996.9
Self-efficacy	32.1	32	33	19	40	4.5	20.4
IM* to know	22.0	23	28	4	28	4.9	24.5
IM to accomplish	20.5	21	28	4	28	5.9	35.0
IM experience stimulation	18.5	19	20	4	28	6.1	37.0
EM** identification	21.3	22	28	4	28	5.2	27.4
EM introjection	18.0	19	28	4	28	6.7	44.8
EM external control	20.3	22	28	4	28	6.6	44.0
Amotivation	7.5	5	4	4	28	5.0	25.1

Source: elaborated by the authors.

Note: *IM=Intrinsic motivation, **EM=Extrinsic motivation.

4.1 Regression of Anxiety

After estimating the model, the method was validated using tests of multicollinearity, normality of residuals, error correlation of variable, mean of the error, functional form, and heteroscedasticity. Except for the normality of residuals and heteroscedasticity, all others were satisfactory. For the problem of normality, the central limit theorem was considered (Wooldridge, 2010). Regarding heteroscedasticity, the backward stepwise model was re-estimated, using White's robust standard error correction. The final model is shown in Table 4.

Table 4. Result of the backward stepwise linear regression model for anxiety with White's robust standard errors

Group	Variable	Coefficient	P-value
Constant	Constant	67.83	0.00
Student's profile	D_Age24	3.25	0.04
	D_GENDER	-2.99	0.00
	D_Master_Doc2	2.27	0.03
Performance	Score_Obtained	0.10	0.08
Supoport	D_Support_Scholar	1.68	0.09
	D_Support_Psychol.	7.70	0.00
Self-efficacy	Self-Efficacy	-1.25	0.00
Motivation to continue studying	Motivation_Continue	-0.04	0.02
Motivation	EM_Control	0.23	0.00
Amotivation	Amotivation	0.34	0.00
Adjusted R^2 = 59.19% Prob.>F = 0.00			

Source: elaborated by the authors.

As for the regression of statistically significant variables, the results pointed out that age is a relevant factor when analyzing anxiety. As observed in Table 4, students under the age of 24 were the only age category statistically significant for the analysis of anxiety. In this sense, the dummy coefficient is statistically significant and positive, indicating that being under the age of 24 years old leads to greater anxiety than other age groups.

The second statistically significant variable was gender. Results of previous studies indicate that anxiety scores vary according to gender (Andrade, Gorenstein, Viera Filho, Tung, & Artes, 2001; Borine, 2011; Fioravanti, 2006). This study confirmed the findings in the literature for graduate accounting students. The coefficient of the gender dummy variable is negative, indicating that male students are less anxious compared to female students, a result consistent with that found in the mean test. According to Lewinsohn, Gotlib, Lewinsohn, Seeley, and Allen (1998), this difference is attributed to genetic and biological factors existing between genders and differences that originate in the experiences lived in the social construction of men and women.

The type of graduate degree (whether master's or doctoral) also proved to be relevant for the analysis of anxiety, indicating that master's students are more anxious than doctoral students. This result differs from that found by Simon and Thomas (1983), who found no statistically significant differences when analyzing their sample in light of the type of program and institution. The variable performance was statistically significant and positive, which suggests higher anxiety in those who have a higher score. This finding deserves further examination in future research.

The variable support was statistically significant, and, surprisingly, the coefficients were positive. That is, receiving psychological/psychiatric support and/or receiving a scholarship to attend a master's and doctoral programs contribute to increased anxiety. Regarding the scholarship, this result is, in part, due to the fact that receiving a scholarship from the higher education institution toward the tuition fees entails obligations regarding performance, with pressure to obtain outstanding grades. Likewise, the scholarships offered by development institutions, such as the financial support offered by the Brazilian agency Coordination for the Improvement of Higher Education Personnel (CAPES), requires that students attend teaching internships. This means that, in addition to the requirements of the graduate school, the student must perform other activities, which could explain the increased anxiety.

However, it was expected that the search for psychological/psychiatric support would have a negative impact on anxiety since, according to Clark and Beck (2012), there are several cognitive and behavioral therapies that help control and decrease anxiety. Perhaps, this result demonstrates that students who seek this type of support already show higher anxiety scores, which led to a positive result regarding this dummy. Therefore, this finding needs to be better explored in future research.

Regarding the effect of motivation on anxiety, the variable motivation to continue studying has a negative and significant effect on anxiety. That is, the more motivated to continue studying, the lower the student's anxiety. This is the first indication that motivation, although analyzed without considering the seven dimensions, negatively affects anxiety.

Self-efficacy also statistically and significantly affects anxiety. The findings on this variable showed that the greater the perception of self-efficacy, the lower the anxiety experienced. Thus, in line with Bandura's (1977) theoretical proposition, a greater perception of self-efficacy is capable of reducing anxiety levels. Thus, hypothesis H_1 was confirmed (self-efficacy negatively and significantly affects anxiety).

Regarding the dimensions of extrinsic motivations, only extrinsic motivation by external control proved to be statistically significant for the analysis of anxiety. Thus, hypothesis H_2 was rejected since extrinsic motivation by identification and extrinsic motivation by introjection did not show to be statistically significant concerning anxiety of graduate accounting students. In addition, within the proposition of Vallerand's (1997) hierarchical model, the extrinsic motivation by external control had the most negative consequences, being less harmful only than the amotivation. Thus, the greater the motivation by external control, the greater the graduate students' anxiety.

In this sense, the regression also indicated that amotivation is positive and statistically significant for the analysis, and hypothesis H_3 was confirmed (amotivation positively and significantly affects anxiety). Therefore, following the proposition by Vallerand (1997), anxiety is positively and significantly influenced by amotivation, which confirms the assumption that, also for master's and doctoral programs in accounting, certain types of motivation may have negative consequences for the student. In the context of this research, this means that, when feeling unmotivated or when attending graduate school to obtain external rewards or avoid restrictions (for example: punishment from parents, judgments, and frustrations), the student will experience an increase in anxiety

Finally, with regard to intrinsic motivations, none of the dimensions were statistically significant for the analysis of anxiety. Therefore, hypothesis H_4 was rejected. Thus, it was not possible to conclude that anxiety is subjected to positive and significant influence from motivational dimensions that should reduce anxiety, i.e., intrinsic motivation to know, intrinsic motivation to accomplish, or intrinsic motivation to experience stimulation.

5 FINAL CONSIDERATIONS

This research successfully examined the effects of motivation, self-efficacy, and sociodemographic variables on the anxiety of master's and doctoral accounting students, analyzing a sample of 246 master's and 76 doctoral students from graduate accounting programs operating all over Brazil.

The findins reveal that anxiety is negative and significantly impacted by self-efficacy, and positive and significantly impacted by extrinsic motivation by external control and amotivation. In addition, the variables motivation to continue studying, being under 24 years old, the type of graduate school (if master's or doctoral), receiving psychiatric/psychological support/scholarship, performance, and gender, are significant predictors in the analysis of anxiety.

In view of these findings, the main marginal contribution of the study consists of presenting results that numerically support the discussion and assessment of these psychological variables for the educational context of the master's and doctoral programs in accounting. This is because although much research has been conducted adopting these variables, few studies focused specifically on graduate accounting studies.

This study points out the need for educational institutions to promote and improve policies for psychological assistance and counseling also to graduate students. The flaws in this support system are noticed, for example, when it is found that students who sought psychological support had an increase in anxiety, as found in this research. Thus, in addition to working with support groups for the sharing of experiences, which allow students and teachers to get closer (Oliveira, 2019; Tyssen & Vaglum, 2002), HEIs need to create welcoming environments that facilitate the integration of students into academic community, enriching their academic, personal, and professional experiences. This measure can strongly enable students to be fully trained and may be effective from the point of view of public spending on higher education.

The first step that HEIs can take in order to tackle the issue of anxiety studied in this work efficiently is to offer guidance. Graduate students need and should receive information about common emotional and behavioral reactions that occur in graduate school, on and off-campus, which will allow them to improve their self-appraisal skills and, if necessary, seek, appropriate treatments more promptly. It is also recommended that HEIs periodically take advantage of this moment and space of guidance to encourage and motivate students. Upon finding that the feeling of self-efficacy can contribute to alleviating anxiety, the research revealed an important control mechanism, as was already advocated by Bandura (1977). Thus, considering that the perception of self-efficacy can be enhanced by external incentives (Bandura, 1977), professors, particularly advisors, can contribute to modulating the anxiety of graduate students by providing encouragement.

The entire academic community (managers, professors, staff, and students) must be alert to the warning signs of suicide and its risk factors (Tyssen & Vaglum, 2002). Worldwide, suicide is one of the three main causes of death among people in the most economically productive age group (15-44 years) (Patton et al., 2009, Garcia-Williams et al., 2014), which is the same age group as the average of the respondents (38 years) in this research. Thus, promoting courses, debates, training, and other ways to enable the community to identify the student in mental distress contributes to the humanization of the academic environment, the students' personal fulfillment and happiness, and preventing drastic events such as suicide.

Finally, future research could address strategies to cope with and reduce anxiety, promoting the students' well-being. These studies could explore, propose, and test mechanisms to foster and expand feelings related to self-efficacy and measure their effectiveness, emphasizing issues concerning female students. Another possibility would be to investigate the relationship between anxiety and depression, which could be affecting students with higher levels of anxiety.

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