

ARTICLE

MOTIVATION OF ACCOUNTING STUDENTS IN REMOTE TEACHING IN THE LIGHT OF THE THEORY OF SELF-DETERMINATION¹

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ABSTRACT: This study aimed to assess the level of motivation among Accounting students regarding the transition from face-to-face to remote learning, in light of Self-Determination Theory, at higher education institutions located in the state of Rio Grande do Sul, Brazil. The research was conducted with students enrolled in Accounting programs at three specific higher education institutions. The sample consisted of 182 students with active enrollment in the second semester of 2021, enabling an analysis of their levels of academic motivation from the perspective of Self-Determination Theory. Therefore, the results reflect the reality of students from the three institutions analyzed and cannot be generalized to all Accounting students in Brazil. The study is characterized as descriptive, explanatory, and quantitative, and was conducted via an online survey administered to students. The results were partially consistent with those reported in previous studies, probably due to the context of the COVID-19 pandemic. The findings indicate that students are motivated primarily by external and identified regulation, followed by intrinsic motivation: they seek to achieve a successful future and are motivated to learn and expand their knowledge. Regarding its practical and educational contributions to Accounting education, this research is expected to contribute to a better understanding of the factors that influence students' motivation and autonomy. From a social perspective, the study seeks to contribute to the development of professionals who are better prepared, more critical, and aligned with the competencies required by the contemporary labor market. Accordingly, it is important to seek alternatives through pedagogical strategies that create conditions for students to maintain intrinsic motivation throughout their degree programs.

Keywords: Accounting, COVID-19, Students, Motivation, Self-Determination Theory

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MOTIVAÇÃO DOS ESTUDANTES DE CIÊNCIAS CONTÁBEIS NO ENSINO REMOTO A LUZ DA TEORIA DA AUTODETERMINAÇÃO

RESUMO: Esta pesquisa teve como objetivo avaliar o nível de motivação dos estudantes de Ciências Contábeis em relação à transição do ensino presencial para o ensino remoto sob a luz da Teoria da Autodeterminação, em IES localizadas no Rio Grande do Sul. A pesquisa foi realizada com estudantes do curso de Ciências Contábeis de três instituições de ensino superior específicas. A amostra foi composta por 182 alunos com matrícula ativa no segundo semestre de 2021, permitindo analisar os níveis de motivação acadêmica desses estudantes sob a perspectiva da Teoria. Dessa forma, os resultados refletem a realidade dos estudantes das três instituições analisadas, não podendo ser generalizados para todos os alunos da área contábil do país. O estudo se caracteriza como descritivo, explicativo e quantitativo, operacionalizado por meio de um questionário online enviado aos estudantes, por meio de uma survey. Os resultados do estudo foram parcialmente convergentes com os encontrados em estudos anteriores, provavelmente por conta do contexto de pandemia. Entende-se que os estudantes estão motivados pela regulação externa e identificada, seguido da motivação intrínseca: desejam obter uma vida de sucesso no futuro e estão motivados a aprender e ampliar seus conhecimentos. No que diz respeito às contribuições, práticas e para a educação contábil, espera-se que esta pesquisa contribua para a compreensão dos fatores que influenciam a motivação e a autonomia dos estudantes, e quanto a social, o estudo busca contribuir para a formação de profissionais mais preparados, críticos e alinhados às competências exigidas pelo mercado de trabalho contemporâneo. E, com isso, buscarem alternativas, através de estratégias pedagógicas que possibilitem criar condições para os discentes manterem-se motivados intrinsecamente no curso.

Palavras-chave: Ciências Contábeis, Covid-19, Discentes, Motivação, Teoria da Autodeterminação.

MOTIVACIÓN DE LOS ESTUDIANTES DE CONTABILIDAD EN LA ENSEÑANZA A DISTANCIA A LA LUZ DE LA TEORÍA DE LA AUTODETERMINACIÓN

RESUMEN: Esta investigación tuvo como objetivo evaluar el nivel de motivación de los estudiantes de Ciencias Contables con respecto a la transición de la enseñanza presencial a la enseñanza remota, a la luz de la Teoría de la Autodeterminación, en instituciones de educación superior ubicadas en el estado de Rio Grande do Sul, Brasil. La investigación se realizó con estudiantes del curso de Ciencias Contables de tres instituciones específicas de educación superior. La muestra estuvo compuesta por 182 estudiantes con matrícula activa en el segundo semestre de 2021, lo que permitió analizar sus niveles de motivación académica desde la perspectiva de la Teoría de la Autodeterminación. Por lo tanto, los resultados reflejan la realidad de los estudiantes de las tres instituciones analizadas y no pueden generalizarse a todos los estudiantes del área contable en Brasil. El estudio se caracteriza como descriptivo, explicativo y cuantitativo, y se llevó a cabo mediante un cuestionario en línea aplicado a los estudiantes a través de una encuesta. Los resultados fueron parcialmente convergentes con los encontrados en estudios anteriores, probablemente debido al contexto de la pandemia de COVID-19. Los resultados indican que los estudiantes están motivados principalmente por la regulación externa y la regulación identificada, seguidas de la motivación intrínseca: desean alcanzar una vida exitosa en el futuro y están motivados para aprender y ampliar sus conocimientos. En cuanto a sus contribuciones prácticas y educativas a la enseñanza de la Contabilidad, se espera que esta investigación contribuya a una mejor comprensión de los factores que influyen en la motivación y la autonomía de los estudiantes. Desde una perspectiva social, el estudio busca contribuir a la formación de profesionales mejor preparados, más críticos y alineados con las competencias exigidas por el mercado laboral contemporáneo. En este sentido, es importante buscar

alternativas, mediante estrategias pedagógicas que permitan crear condiciones para que los estudiantes mantengan su motivación intrínseca a lo largo de su formación académica.

Palabras clave: Ciencias Contables, COVID-19, Estudiantes, Motivación, Teoría de la Autodeterminación.

INTRODUCTION

The year 2020 was defined by the COVID-19 pandemic, which led to profound changes in educational systems around the globe. In response to social distancing measures, higher education institutions were compelled to modify their teaching practices, adopting emergency remote teaching as an alternative to ensure the continuity of the teaching-learning process (Chen, 2020; Ali, 2020).

During this period of social and physical distancing, remote classes were the most feasible, rapid, and accessible solution for many Higher Education Institutions (HEIs). Preparations were made almost overnight, since it was the method adopted to provide temporary access to instruction (Appenzeller et al., 2020). This form of emergency teaching, as the name implies, was both an alternative and a challenge for continuing the academic year (Gusso et al., 2020).

According to Santos (2020), remote teaching is characterized by interactions between teachers and students through modern platforms, such as web conferencing and video conferencing. This teaching modality can be described as an adaptation of a context that would normally be in-person. It was the path chosen to resume academic life, develop course content, reinforce learning, and keep students motivated during the challenges imposed by the pandemic.

The educational community has engaged in intense debates regarding the need for students to remain motivated throughout the teaching-learning process. However, for this to happen, they require support from their teachers. The educational objective focuses on supporting student well-being and the satisfaction of their psychological needs, leading them to carry out learning activities with persistence and enthusiasm (Ryan & Deci, 2020).

Student motivation is an indispensable element since, beyond being essential for human development, a motivated student approaches tasks with greater zeal. This topic frequently appears in academic contexts linked to teaching quality and student commitment to their studies, highlighting that the development of critical individuals capable of social interaction is only truly achieved when they are motivated (Carmo & Albanez, 2016).

Therefore, this research is essential in the context of undergraduate Accounting programs. This training requires the integration of accounting, technological, and analytical knowledge, alongside the development of behavioral competencies, critical thinking, effective communication, and practical skills. In this scenario, the importance of student engagement in their educational process stands out, fostering greater autonomy and a proactive role in knowledge construction (Rodrigues et al., 2024).

Self-Determination Theory offers a way to understand this process. It provides a description of human behavior across all life contexts, such as education. According to this theory, motivated individuals become engaged, curious, connected, and integrated with their life goals and objectives. However, if individuals fail to perceive motivation in their activities, they may become demotivated, which directly impacts their personality development and daily activities (Legault, 2017; Ryan & Deci, 2020).

Research on student motivation has been prominent in the field of teaching and learning, as motivation is fundamental to achieving effective learning. We can highlight the following studies: Sobral (2003), in research on medical student motivation, demonstrated the suitability of the Academic Motivation Scale (EMA) by analyzing its relationship with academic factors; Guimarães and Bzuneck (2008) analyzed the psychometric properties of Sobral's Brazilian version (2003) EMA; Leal, Miranda, and Carmo (2013) set out to evaluate the motivation of Accounting students at a public university; and finally, Borges, Miranda, and Freitas (2017) analyzed the relationships between academic performance

and motivation among Accounting students. Pedersini et al. (2024) sought to understand the factors influencing student engagement in learning from the perspective of Self-Determination Theory.

Insights from previous studies emphasize the importance of researching students' motivational levels. It is essential to understand and assess these levels, as well as to analyze ways to maintain students' motivation for attending university. This approach enables planning aimed at fostering and exploring motivation within academic environments. In this context, various studies contribute to the understanding of student motivation, including: Leal, Miranda & Carmo, 2013; Carmo & Albanez, 2016; Costa, Faria, Avelino & Brugni, 2021; Gao, Cheah, Lim & Luo, 2024; Marques, Marques & Alvarenga, 2024; Pedersini, Antonelli & Petri, 2024; Marques et al., 2024; and Costa et al., 2026.

Based on these considerations, the guiding question of this research is: How did students in the in-person Accounting program develop their autonomy during the COVID-19 pandemic?

For this, Self-Determination Theory offers a pathway to understanding this process, as it can explain human behavior across various spheres of life, including education (Legault, 2017).

Therefore, this study aims to assess the motivation levels of Accounting students at higher education institutions in Rio Grande do Sul regarding the transition from in-person to remote learning, drawing on Self-Determination Theory. The Accounting program was selected due to the specific nature of its curriculum, which integrates theoretical and practical knowledge, a factor that may influence student motivation amidst the changes in the teaching-learning process. The analysis of motivation is based on the study by Sobral (2003) since his research is grounded in Self-Determination Theory and is widely used to investigate motivational factors in educational contexts.

This study is grounded in the importance of investigating academic motivation in higher education, specifically within the Accounting Sciences program, due to its connection to students' autonomous learning. According to Pedersini, Antonelli, and Petri (2024), understanding the different types of motivation allows for the identification of factors that influence academic engagement and autonomous learning. Furthermore, Marques, Marques, and Alvarenga (2024) emphasize that motivation is a crucial determinant of student engagement, contributing to reduced dropout rates. In this context, Self-Determination Theory provides a foundation for developing pedagogical strategies that can enhance engagement and autonomy while maintaining motivational levels throughout the course of study.

Understanding this process will help educators optimize their teaching practices and encourage students to actively engage in the learning activities developed during the course (Sobral 2003; Borges, Miranda & Freitas 2017; Howard et al., 2021). Fostering conditions that enhance learning capacity promotes student well-being, and Self-Determination Theory is a valuable ally in achieving this goal (Ryan & Deci, 2020).

The COVID-19 pandemic had several challenges to higher education institutions, prompting changes in teaching and learning practices. Thus, it became necessary to enhance the skills of both students and faculty. From an empirical standpoint, this study can help educators better prepare for future emergencies, such as public health or safety crises, that might necessitate this mode of instruction. In this context, the study aims to examine the motivation levels of accounting students regarding the learning process during remote instruction and offer insights that may be a point of reflection for different countries that faced this challenge.

EMERGENCY REMOTE TEACHING, ACADEMIC MOTIVATION, SELF-DETERMINATION THEORY

During the COVID-19 pandemic, sharing spaces with large numbers of people posed a risk because it could facilitate the spread of the coronavirus among individuals (Ali, 2020). Under these circumstances, measures had to be taken to ensure social isolation. Environments characterized by gatherings, such as schools, colleges, and universities, suspended in-person activities (WEST et al., 2020).

In this period of social and physical distancing, remote classes emerged as the most feasible, rapid, and accessible solution for many Higher Education Institutions (HEIs). Preparations were made almost overnight. Typically, this modality is used for only a short period, unlike distance learning (EAD), which is designed with a specific digital structure and methodology. Although remote learning is often seen negatively, it provided a means of offering temporary access to instruction, and faculty training was essential, as it is a key factor in the success of remote teaching (Appenzeller et al., 2020).

According to Santos (2020), remote learning is characterized by interactions between teachers and students through modern platforms, such as web conferencing and video conferencing. This emergency teaching modality can be an adaptation for a context that was originally intended to be in-person. It was the path chosen to resume academic life, cover course content, reinforce knowledge, and boost student motivation, despite the challenges posed by the pandemic. Student-teacher interaction took place through two modes of learning: synchronous and asynchronous.

In addition to delivering knowledge, this mode of instruction presents students with another challenge: maintaining their motivation. However, such an environment can lead to feelings of loneliness and diminish motivation due to the limited interaction among teachers, students, and peers. Therefore, teacher attention and support are essential in guiding this educational process; with such support, it is possible to foster student motivation to learn (Dosea Rosário, R. W. S., Silva, E. A., Firmino, L. R. & Oliveira, A. M. S, 2020).

Motivation is understood as a psychological process that originates within individuals, driving them toward specific actions. It is often described as a force that leads an individual to perform a particular activity (Ryan & Deci, 2000). According to Carmo (2014), motivation emerges as a stimulus within the individual, prompting the execution of specific actions and providing the direction needed to achieve their intended purpose. Furthermore, motivation is integral to of biological, cognitive, and social aspects, serving as a driving force that inspires and guides individuals toward the accomplishment of their objectives (Ryan & Deci, 2000).

Academic motivation has been widely discussed in the literature due to its relevance to the teaching-learning process and student engagement in higher education. Studies such as those by Costa et al. (2021), Pedersini, Antonelli, and Petri (2024), and Marques, Marques, and Alvarenga (2024) highlight that motivation has a significant influence on academic engagement, contributing to students' participation in learning activities and their persistence in their course of study.

The literature indicates that understanding factors about motivation can inform the development of educational strategies to improve academic performance and the quality of university education. In this context, Gao et al. (2024) emphasize the importance of adopting pedagogical practices that foster student engagement with learning. These studies highlight motivation as an essential element for academic success and the creation of more effective educational environments.

Motivated students show greater interest in the learning process and consistently engage in activities that challenge them. A topic addressed by Self-Determination Theory states that a student with low or no academic motivation will show little interest in engaging with learning activities (Guimarães & Boruchovitch, 2004).

The psychology professors Edward L. Deci and Richard M. Ryan have been investigating this theory since the mid-1970s. According to them (1985), the theory addresses personality and human motivation, grounded in psychological needs, responsible for integrating personality with motivation. It is an empirical theory of motivation stating that individuals are driven to engage in activities to satisfy three basic needs: autonomy, competence, and the need to belong or establish connections (Deci & Ryan, 1985, 2000, 2008).

Thus, the first aspect, autonomy, involves individuals engaging in an activity of their volition because they desire to do so, rather than performing a task compelled by some external impulse. Competence relates to efficacy. It is the individual's perception of having mastery over actions performed to achieve a satisfactory outcome. Finally, there is the need to belong to or establish bonds with a social

group to fulfill one's aspirations and sense of belonging (Guimarães & Boruchovitch, 2004; Legault, 2017; Ryan & Deci, 2020).

These three aspects can be described as integrated and interdependent; satisfying one strengthens and reinforces the others. Based on these concepts, we can highlight the evolution of Self-Determination Theory. This theory states that autonomous motivation includes both intrinsic and extrinsic motivations and is directly influenced by external factors, such as rewards or punishments, as well as aspects like the need for approval or shame, self-esteem, and the ego (Guimarães & Boruchovitch, 2004; Ryan & Deci, 2020).

Based on these ideas, we can emphasize the development of Self-Determination Theory, in which autonomous motivation includes both intrinsic and extrinsic motivations and is directly influenced by external factors, such as rewards or punishments, and aspects including the need for approval or shame, self-esteem, and the ego (Ryan & Deci, 2020).

These factors are presented via the self-determination continuum (Figure 1), which comprises six types of motivation that vary qualitatively based on the internalization of external behavioral regulations. This instrument assesses motivational quality grounded in the basic psychological needs for competence, autonomy, and relatedness (Gagné & Deci, 2005; Deci & Ryan, 2008; Legault, 2017). It is presented ranging from the absence of motivation to the most self-determined form. It also aims to show that individuals develop along the continuum, with the sense of autonomy or control reflecting the extremes shown in Figure 1.

Figure 1. Self-Determination Continuum

Absence of Self-Determination			Self-determination		
Amotivation	External Regulation	Introjected Regulation	Identified Regulation	Integrated Regulation	Intrinsic Motivation
Extrinsically Motivated Regulations					

Source: Adapted from Guimarães & Bzuneck (2008, p. 103).

First, there is amotivation, which, as the name implies, is characterized by a lack of intention and action. A demotivated individual shows behavior like a lack of intentionality in their actions. In their study, Ryan and Deci (2020) note that amotivation is very common in educational settings, hindering learning to some extent. On the motivation continuum, this level of disinterest represents the lowest level of autonomy. Thus, amotivation can be described as the absence of a perceived link between performing a specific action and its outcome, characterized by a lack of intrinsic and extrinsic motives (Deci & Ryan, 2000; Sobral, 2003; Ryan & Deci, 2021).

In extrinsic motivation, an individual acts to obtain a desirable consequence or a beneficial outcome (Ryan & Deci, 2000). This type of motivation is characterized by actions to secure a reward or incentive given by another person or an external entity. In this context, satisfaction stems not from the activity, but from the external stimulus provided by a person or institution (Gagné & Deci, 2005; Ryan & Deci, 2020, 2021).

External regulation is the most basic and least autonomous form of extrinsic motivation. In this case, the individual acts to obtain rewards or avoid punishments, that is, to avoid external consequences. At this motivational level, the person focuses solely on the benefits derived from the situation rather than on the process of performing the activity (Colares et al., 2019; Howard et al., 2021). It can be said that the individual feels pressured by something or someone to carry out the activity.

The second level of extrinsic motivation is introjected regulation. Individuals perform a specific action because they pressure themselves to do so; in other words, external demands are

internalized. At this level of motivation, the consequences are circumstantial and self-administered, stemming from internal pressures such as guilt, anxiety, or the pursuit of social recognition. It involves acting to avoid feelings of guilt or shame, whether in one's eyes or in the eyes of others (Guimarães & Bzuneck, 2008; Sheldon et al., 2017; Ryan & Deci, 2021; Ryan, Donald & Bradshaw, 2021).

At a third level, identified regulation emerges. The person perceives value in the action and consciously identifies with it. While this form is more autonomous than the previously conceptualized levels of regulation, the action remains centered on consequences and benefits. In this scenario, the action is embraced as a personal choice, meaning the person performs it because they have personally decided to do so, while also recognizing its importance (Guimarães & Bzuneck, 2008; Sobral, 2003; Ryan & Deci, 2021). According to Howard et al. (2021), this type of motivation allows for fostering positive learning outcomes.

The fourth and final level of extrinsic motivation is known as integrated regulation. This concept describes a relationship between identified regulation and intrinsic motivation. In this context, individuals not only recognize the value of the action they are about to undertake, but they also experience coherence among their behaviors, goals, and values. This occurs as they consciously and autonomously embrace their actions within a specific context. However, despite the significant degree of autonomy associated with this form of motivation, it still focuses on personal benefits (Leal, Miranda & Carvalho, 2019; Ryan, Donald & Bradshaw, 2021).

Intrinsic motivation completes the self-regulation continuum. This type of motivation represents human positive potential, arising when individuals engage in actions that they find interesting and challenging, and provide them with satisfaction. People engage in these actions out of enjoyment and interest. These two characteristics distinguish it from integrated regulation (Deci & Ryan, 2008; Ryan & Deci, 2020; Ryan, Donald & Bradshaw, 2021).

In the pursuit of quality in the learning process, a tool has emerged to help assess students' level of engagement with the educational context: *the l'échelle de Motivation em Éducation* (EME), developed and validated by Canadian researchers Vallerand et al. (1989). This scale aims to evaluate the motivation of higher education students, drawing upon the concept of Self-Determination Theory proposed by Deci and Ryan (1985, 2000).

The original version of this scale, developed by Vallerand et al. (1989), was in French. It was translated by Professor Dejanio Tavares Sobral, the first Brazilian author to translate and adapt the scale's semantics into Brazilian Portuguese, and was named *Escala de Motivação Acadêmica* (EMA). This theory, supported by the EMA, is relevant to this study as it enables the observation, analysis, and understanding of what motivates Accounting students to learn.

Previous Studies

This topic addresses findings from the literature related to the themes explored in this research. A key theme is associated with the Self-Determination Theory, which has been widely examined in the field of education to explain motivation and learning within the context of higher education (Deci & Ryan, 2008).

In his research on medical student motivation, Sobral (2003) showed the suitability of the EMA. When the scale was tested, the identified response profile revealed a predominance of autonomous motivation and gender-based variation: women showed higher measures of intrinsic motivation, while men had scores reflecting extrinsic motivation driven by external control.

Guimarães and Bzuneck (2008) analyzed the psychometric properties of a Brazilian version of Sobral's (2003) EMA. Key findings revealed that the participating university students exhibited a self-regulated motivation profile. The highest mean scores were observed for integrated regulation, followed by intrinsic motivation and identified regulation. Amotivation showed the lowest mean score. These results indicate an autonomous level of student engagement in learning situations. Furthermore, the

instrument used in the study demonstrated satisfactory validity indices and was, therefore, recommended for future research.

According to Leal, Miranda, and Carmo (2013), Self-Determination Theory has been a focus of discussion within the academic field of learning motivation. The authors proposed to assess the learning motivation of Accounting students at a public university. The results revealed a wide diversity of learning motivations among the students, as some were concerned with deepening their knowledge or establishing a solid foundation for their future professional practice.

Conversely, some students expressed concerns about obtaining their diplomas or seemed more interested in attending classes solely to fulfill attendance requirements. Even though integrated regulation is linked to a style of autonomous behavioral regulation, the emphasis of the activity remains on the personal benefits gained from it. Additionally, it was noted that the level of motivational autonomy diminished over the course, with one potential contributing factor being the didactic and pedagogical qualifications of the teaching staff.

Borges, Miranda, and Freitas (2017) analyzed the relationship between academic performance and student motivation in an Accounting program at a public university. The authors conducted a factor analysis to evaluate the data, identifying a self-determined profile among the students; intrinsic and identified motivations yielded the highest mean scores, while external regulation, driven by social rewards, recorded the lowest mean.

The findings revealed that students spontaneously seek to achieve good grades. On the other hand, others strive to study hard to secure a good position in the job market. A relationship was also observed between motivation and the students' academic performance.

Costa et al. (2021) investigated the factors influencing the motivation of Accounting students at a higher education institution in Minas Gerais. The study demonstrated that motivation influences academic performance, student retention in higher education, and the quality of the learning process. The results indicated that students in the early stages of the program had higher levels of intrinsic motivation, reflecting a greater interest in learning, while students in the final stages showed significantly higher levels of amotivation.

The research revealed that institutional factors also affect student motivation. Notably, the use of participatory methodologies by instructors emerged as a key factor, as it promotes the development of autonomy and a genuine interest in learning. Additionally, the findings underscored the importance of implementing pedagogical and curricular strategies that can sustain student motivation throughout the duration of the undergraduate program.

Marques et al. (2024) examined the evolution of motivation among Accounting students throughout their academic program, utilizing Self-Determination Theory as a framework. This study was conducted over five years, from 2016 to 2021. The findings indicated notable shifts in academic motivation over the course of the program, marked by a decline in both intrinsic motivation and extrinsic motivation via identification, alongside an increase in amotivation among students nearing the completion of their studies.

The study identified several factors within the university environment contributing to this scenario, including uninspiring teaching methods, an excessive volume of course content, a demanding academic schedule, and a lack of connection between theory and professional practice. The findings highlight the need for institutional and pedagogical strategies designed to promote sustained student engagement and interest throughout the Accounting undergraduate program.

Overall, studies converge in indicating the predominance of more autonomous forms of motivation among higher education students, highlighting the importance of intrinsic motivation and integrated and identified regulations for engagement and academic performance (Borges et al., 2017; Guimarães & Bzuneck, 2008; Sobral, 2003). There is also a consensus that institutional and pedagogical factors, such as teaching methodologies and instructor practices, directly influence student motivation (Costa et al., 2021; Leal et al., 2013; Marques et al., 2024). Studies differ regarding the focus of their analyses. While Sobral (2003) identified motivational differences between men and women, more recent

research highlights a decline in motivation and an increase in amotivation throughout the undergraduate program (Costa et al., 2021; Leal et al., 2013; Marques et al., 2024). These results demonstrate that motivation is a dynamic phenomenon influenced by both student characteristics and the educational context.

Although the findings of the highlighted studies vary regarding motivation, it was important to understand the factors that led to their development, as well as their theoretical frameworks, results, limitations, and the difficulties reported by the authors. These studies proved relevant for identifying, reflecting, discussing, and comparing how Accounting students managed their motivation during the pandemic.

METHODOLOGICAL PROCEDURES

To achieve the proposed objectives and address the research question, this study adopts a quantitative approach, incorporating statistical tools for data collection and analysis. The study is descriptive and explanatory. Finally, a survey method was used for data collection (Martins & Theóphilo, 2016; Gil, 2017).

The study population consisted of students enrolled in the in-person Accounting Sciences program who, due to the COVID-19 pandemic, were following an emergency academic schedule. This population comprised 1,380 duly enrolled students. The research sample consisted of 182 students from three higher education institutions located in Rio Grande do Sul.

Therefore, to facilitate data collection involving undergraduate accounting students, this study was submitted for review to the Research Ethics Committee Involving Human Subjects via the Ministry of Education's *Plataforma Brasil* and was approved on July 15, 2021 (Opinion No. 4.850.104).

The survey link was sent to senior experts (ranging from PhD holders to master's students) familiar with accounting research, and finally to undergraduate accounting students, the focus group of this study. The selected students belong to a scientific research group at one of the institutions under investigation. Adjustments were made to improve the clarity and precision of certain terms, ensuring that participants would face no difficulties in understanding the questions or uncertainty when answering them during data collection (Gil, 2017).

The questionnaire was implemented in an electronic format, distributed via email, and promoted during synchronous classes. The form was sent to students using Google Forms and based on email lists obtained from the institutions' administration.

The instrument was structured into three sections: it began with a research introduction letter followed by the Informed Consent Form. The second section focused on the profile characteristics of the sample, while the third section used the Academic Motivation Scale (AMS). This scale was adapted for the context of emergency remote teaching, based on Sobral's study (2003), which presented a 28-item instrument divided into seven subscales of four items each. These subscales assess three types of intrinsic motivation: to know, to accomplish, and to experience stimulation. Three types of extrinsic motivation, external regulation, introjection, and identification, as well as amotivation, were also assessed. These scales reveal the reasons why students attend university and, consequently, allow for the assessment of motivation levels.

In this context, it is important to highlight that the results of Sobral's (2003) study demonstrated the instrument's reliability and construct validity, confirming its effectiveness for examining motivation in a university setting. It should be noted that the present study does not replicate Sobral's (2003) work but adapts it to the pandemic context, aimed at analyzing the motivational characteristics of accounting students. Data collection was conducted between July and September 2021, with the objective of reaching the largest possible number of students.

The analysis techniques used included several steps. First, percentage analysis using Microsoft Office Excel was conducted to characterize the study sample, offering an overview of the

research subjects. Before presenting the factors, a scree plot was generated. For the Exploratory Factor Analysis (EFA), Principal Component Analysis (PCA) was used (Field, 2009; Fávero & Belfiore, 2017).

Cronbach's alpha (α) coefficient was used to evaluate the scale employed in this study. The Kaiser-Meyer-Olkin (KMO) criterion was also applied. Subsequently, Spearman's coefficient was calculated. Data normality was assessed using the Kolmogorov-Smirnov (K-S) test (Field, 2009; Fávero & Belfiore, 2017). Finally, references and comparisons were made regarding studies that utilized the EMA in their research.

PRESENTATION AND DISCUSSION OF RESULTS

This section presents the research results, beginning with a description of the respondents' profiles; it should be noted that there were 182 participants. Women were the largest percentage of respondents (65% or 119 participants), and men were 35% or 63 respondents, totaling 182 participants.

As for the respondents' ages, 92 students (51%) are between 18 and 24 years old; 49 (27%) are between 25 and 34; 29 (16%) are between 35 and 44; and 12 (7%) are over 45. It is evident that the group consists primarily of young students.

Regarding the stages of the degree program, the highest level of participation in the study was observed among students in the 3rd and 4th semesters, who collectively accounted for 36% of the total sample. This was followed by students in the 7th and 8th semesters, representing 19%. Participants in the 5th and 6th semesters represented 18% of the sample, while those in the 9th and 10th semesters constituted only 11% of the total sample. It is worth noting that only one of the three institutions surveyed offers a five-year Accounting degree program, which helps explain the lower participation rate among students at these stages of the course.

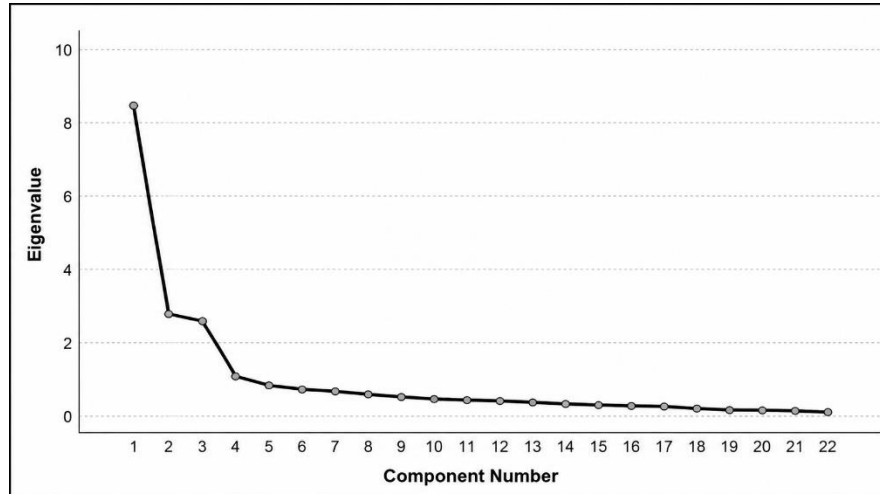
In terms of access to devices such as desktop computers, laptops, tablets, and mobile phones, as well as internet connectivity, the majority of respondents (55%) reported accessing content and participating in synchronous classes from both home and other locations. In contrast, 30% of participants accessed these resources solely from home, while 15% did so exclusively from alternative locations, which may have negatively impacted their learning experience.

Additionally, it is important to note that the largest proportion of participants (41%) were from Institution B, comprising 74 students. Following that was Institution A, with 58 participating students, accounting for 32% of the total sample. Institution C had the lowest participation rate, contributing 50 students, which represents 27% of the overall group.

Results of the quantitative phase: academic motivation

Factor analysis was conducted using the 28 items from the survey by Sobral (2003). Figure 2 presents the scree plot, which indicates the eigenvalues and principal components represented by the slope of the line. This graph was also important for establishing a criterion for excluding factors in previous tests.

Figure 2. Scree Plot: Motivation



Source: Research data

Principal Component Extraction was the method used in our study. Based on the 28 scale items, it yielded four factors with eigenvalues greater than 1, explaining 67.71% of the total data variance, as shown in Table 1 and Figure 2.

Table 1 - Analysis of Variance

Components	Eigenvalue	% of Variance	Cumulative Eigenvalue	Cumulative %
1	8.66	39.38	8.66	39.38
2	2.74	12.47	11.40	51.85
3	2.69	12.23	14.09	64.08
4	1.01	4.63	15.10	67.71

Source: Research data.

Table 1 shows a reduction from 28 variables (items) to four factors, which explain 67.71% of the variation in the original data. The composition of the factors was based on item loadings exceeding 0.30. According to Fávero and Belfiore (2017), factor loadings below 0.30 are inappropriate, as values above this threshold allow for explaining at least 9% of the total variance. Thus, four factors emerged in this study, with items grouped and loaded in a manner that diverged from the seven motivational levels described in the self-determination continuum.

Table 2 shows the factor loading for each variable and its distribution across the resulting factors.

Table 2 - Factor loadings of the variables (Varimax rotation)

EMA items	F1 Intr.	F2 Exter./ Ident.	F3 Desm.	F4 Intr.
2. Because I feel satisfaction and pleasure while learning new things.	0.846			
9. For the pleasure I feel when I discover new things I had never seen or known before.	0.830			
23. Because my studies allow me to continue learning about many things that interest me.	0.780			
16. For the pleasure I feel from expanding my knowledge about subjects that interest me.	0.748			
6. For the pleasure I feel when I improve myself in my studies.	0.739			
11. Because, for me, university is a pleasure.	0.726			

25. For the euphoria I feel when I read about various interesting subjects.	0.654			
22. In order to have good remuneration in the future.		0.861		
15. Because I want to lead a good life in the future.		0.816		
1. Because I need the diploma to get a well-paid job in the future.		0.773		
8. In order to get a prestigious job in the future.		0.702		
3. Because I believe a university education helps better prepare me for the career I have chosen.		0.663		
17. Because this will help me better choose my career path.		0.548		
24. Because I believe that a university education will increase my professional competence.		0.553		
26. I don't know. I don't understand what I'm doing at university.			0.875	
19. I don't understand the point of attending university, and frankly, I don't worry about it.			0.825	
5. Honestly, I don't know. I think I'm wasting my time at university.			0.823	
12. I once had good reasons for that. Now, however, I wonder if I should continue.			0.801	
21. To prove to myself that I am an intelligent person.				0.806
28. Because I want to prove to myself that I can succeed in my studies.				0.787
7. To prove to myself that I am capable of completing the course.				0.774
14. Because I feel important when I am successful at university.				0.644
Eigenvalues	8.664	2.744	2.691	1.019
% Variance Explained	39.382	12.475	12.230	4.630
% Cumulative Variance	39.382	51.857	64.088	68.717
Cronbach's Alpha	0.911	0.874	0.877	0.881

Source: Research data.

Except for Q10, part of Identified Regulation, which showed low variance compared to the others in that group, it was not possible to sufficiently explain the aspect of the subject consciously identifying with the action, as described by Ryan and Deci (2020) regarding Self-Determination Theory. Furthermore, the items split into two subgroups: Q13, Q20, and Q27 - intrinsic motivation to accomplish: doing something for pleasure and satisfaction-, and Q4 and Q18 -intrinsic motivation to experience stimulation: doing something to experience stimulating sensations-.

Regarding Factor 1- intrinsic motivation (to know, to accomplish, and to experience stimulation), it is observed that this construct loaded 7 items (Q2, Q9, Q23, Q16, Q6, Q11, and Q25). All of them refer to attending university and learning the course content of the Accounting program with satisfaction and pleasure, as shown in Table 2 (Factor Loadings – Varimax Rotation).

Comparing this study with the research by Guimarães and Bzuneck (2008), we observed that there were three items related to intrinsic motivation; similarly, Leal, Miranda, and Carmo (2013) grouped three items regarding this motivational level but also included one item for identified regulation and four for integrated regulation; Borges, Miranda, and Freitas (2017) identified six items related to intrinsic motivation.

In the study by Costa et al. (2021), exploratory factor analysis revealed that items related to intrinsic motivation grouped into four factors among students at the beginning of the course and into three factors among those at the end of the course. Pedersini et al. (2024) did not identify new intrinsic motivation factors, as they did not aim to discover new dimensions or groupings within intrinsic motivation, but they did identify a profile of more self-determined students.

While there were discrepancies between the findings of our study and the aforementioned research in the number of factors, there was convergence in the content.

Therefore, Factor 1 can be inferred to mean that most students participating in this study attend the institution without external incentives or pressure, that is, because they find the activity

interesting and enjoyable. Corroborating with the study by Pedersini, Antonelli, and Petri (2024), the authors found that intrinsic motivation showed a high mean score among the motivational constructs analyzed, highlighting a student profile with characteristics closer to self-determined motivation.

Regarding Factor 2, extrinsic motivation via external and identified regulation, Table 2 shows that this factor combined items related to extrinsic motivation via external regulation (Q1, Q8, Q15, and Q22) with items related to extrinsic motivation via identified regulation (Q3, Q17, and Q24). Comparing these results with studies by other authors, and according to Guimarães and Bzuneck (2008), these two levels did not merge into a single factor. This stage yielded four satisfactory factor loadings. Regarding the factor of external regulation, Leal, Miranda, and Carmo (2013) found that this factor loaded only two items associated with external regulation. In the study by Borges, Miranda, and Freitas (2017), extrinsic motivation via external regulation was split into two components: class attendance as a mandatory requirement and rewards, such as a student not needing to work because they are attending university.

In external regulation, students seek to learn while guided by the prospect of a reward, or to avoid punishment or future adversity. Thus, it is evident that university students in this motivational category require an external incentive to foster learning and, consequently, potentially secure a reward.

Thus, it was observed that this construct also grouped items related to identified regulation, a finding that differs from the studies used for comparison. In the study by Guimarães and Bzuneck (2008), the two levels did not merge into a single factor; however, identified regulation yielded two satisfactory factor loadings, consistent with the findings of Leal, Miranda, and Carmo (2013) and Borges, Miranda, and Freitas (2017).

In this framework, which also grouped items related to identified motivation, it is evident that attending university is important to students, even if they do not find the experience inherently enjoyable. This activity ultimately promotes positive learning outcomes. The research by Costa et al. (2021) revealed that students approaching graduation predominantly displayed identified regulation, evidenced by their recognition of the importance of their studies for their academic and professional development.

Based on the three cited studies, it is clear that external and identified regulations merged into a single factor. This finding differs from the results of the present study. In this context, a more focused investigation is needed to examine in detail what occurred with these variables, as no distinction between the two levels was observed in Factor 2, unlike the baseline studies. This result diverges from the variable definitions within the continuum established by Self-Determination Theory. In contrast, the study by Costa et al. (2021) found that, among students in the early stages of their course, identified, integrated, and external regulations were perceived similarly. This suggests that motivation was influenced not only by external factors but also by the recognition of the activity's importance and its alignment with the individual's values and identity.

Regarding Factor 3—amotivation—the listed items (Q5, Q12, Q19, and Q26) demonstrate cohesion; that is, they align and clearly and objectively express a lack of awareness, rationale, and interest in attending university within the context of remote learning. This factor corroborated the studies by Guimarães and Bzuneck (2008), Leal, Miranda, and Carmo (2013), and Borges, Miranda, and Freitas (2017). This finding aligns with the results of the current study. In contrast to the study conducted by Costa et al. (2021), the factor analysis in our research identified amotivation as a separate factor, particularly among students in the final stage of the Accounting Sciences program.

Among the four factors resulting from the study, few students identify with the amotivation category. According to the continuum, students at this level see no connection between their behavior and the expected outcome, nor do they demonstrate effort or persistence in carrying out a learning activity.

Finally, Factor 4 - extrinsic motivation via introjected regulation, grouped four items related to this construct (Q7, Q14, Q21, and Q28), which reflect a low degree of internalization of external contingencies. Research by Guimarães and Bzuneck (2008) grouped six items under this factor. In contrast, the study by Leal, Miranda, and Carmo (2013) gathered only four statements, while the research

by Borges, Miranda, and Freitas (2017) grouped five statements indicating that student university attendance is driven by internal pressures, such as guilt and anxiety. These studies align with the findings of the present research regarding introjected regulation. Students with this type of motivation act to avoid feelings of failure or to satisfy needs related to self-esteem.

Costa et al. (2021) found that, among students in both the early and final stages of the course, four items related to extrinsic motivation via introjected regulation remained grouped within the same factor, reflecting a motivation primarily aimed at self-approval.

The factor analysis in this study did not group the items in strict accordance with the stages of the continuum, external regulation, introjected regulation, identified regulation, integrated regulation, and intrinsic motivation—as Factor 2 combined two categories. However, based on the research by Guimarães and Buzneck (2008), the seven factors loaded as outlined in Self-Determination Theory, making the motivational levels evident based on the content of the statements.

Once the composition of each subscale was determined based on the factor analysis results, the mean response scores, minimum and maximum scores, and standard deviations were calculated, as shown in Table 3.

Table 3. Mean response scores for the scales by motivation type

Factors	Minimum	Maximum	Mean	Standard Deviation
Factor 1 – Intrinsic motivation	1.00	7.00	5.46	1.64
Factor 2 – External motivation and identification	1.00	7.00	6.12	1.35
Factor 3 – Amotivation	1.00	7.00	1.72	1.38
Factor 4 – Introjected motivation	1.00	7.00	4.92	1.98

Source: Research data.

According to Table 3, the highest mean score was obtained for Factor 2—external and identified regulation (6.12). In this instance, the subjects' behavior is motivated by the desire to avoid punishment or to receive a reward. At the same time, they identify with the action of attending university, recognizing its importance and being willing to engage in it.

The second-highest mean (5.46) was observed for intrinsic motivation (Factor 1), reinforcing indications that the students surveyed show satisfaction and interest in attending university, despite the adversities and challenges posed by the pandemic context.

The third-highest mean (4.92) was recorded for Factor 4, Introjected Motivation. At this level, the student is driven by external demands; that is, according to the literature, individuals attend university to avoid feelings of guilt or anxiety and, in doing so, maintain or enhance their self-esteem.

The final mean score corresponded to amotivation (1.72), characterized by a lack of intention to study during the pandemic and an absence of autonomy in carrying out learning activities.

To assess the data's fit for this model, a Spearman correlation analysis was performed, as shown in Table 4. The choice of this correlation method was based on a normality analysis of the data using the Kolmogorov-Smirnov (K-S) test in SPSS. The items were tested by construct. The results showed a significance level of 0.000 for each construct, indicating a lack of normality. Consequently, the study yielded a p -value < 0.05 , leading to the rejection of the null hypothesis (which posited no difference between the means). Also, there is a deviation from normality, justifying the use of the Spearman correlation test, which is appropriate for non-normally distributed data.

Table 9. Spearman correlation coefficients between the continuum variables

Variável	Desmotivação	Exter. R.	Intr. R.	Ident. R.	Intr. M.
Amotivation	1	- 0.215**	- 0.334**	- 0.119	- 0.406**
External R.		1	0.622**	0.471**	0.264**
Introjected R.			1	0.525**	0.537**
Identified R.				1	0.585**

Intrinsic M.					1
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Source: Research data.

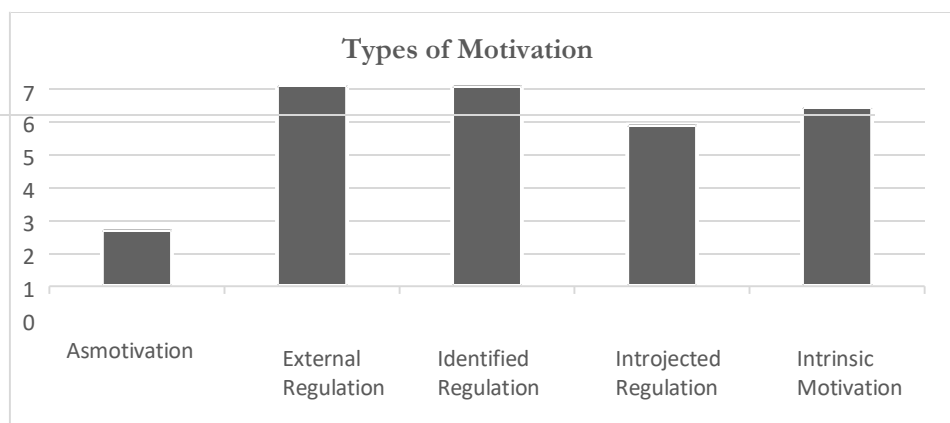
Legend: * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$.

According to the literature, a correlation closer to -1 indicates an inverse relationship. External, introjected, and identified regulations, as well as intrinsic motivation, were found to correlate with amotivation; that is, the more amotivated the student, the closer the correlation is to -1. Consistent with the Self-Determination Theory continuum, these values can be considered moderate correlations.

The remaining correlations, external regulation with introjected and identified regulation and intrinsic motivation; introjected regulation with identified regulation and intrinsic motivation; and identified regulation with intrinsic motivation, showed positive, perfect associations, reflecting a directly proportional relationship between the variables. These results demonstrated a pattern of correlations consistent with Self-Determination Theory, further evidencing the validity of the EMA.

It is relevant to understand the types of motivation driving students to pursue the Accounting Sciences program, given that the pandemic period necessitates overcoming various challenges associated with remote learning. Figure 3 presents the mean scores from the participants' academic motivation scales, assessing motivation types based on Self-Determination Theory, addressing the study's objective.

Figure 3. Mean responses on the academic motivation scales



Source: Research data.

Figure 3 shows the results related to the factor structure presented in Table 7. Regarding motivational levels, the findings indicate that students are driven by external and identified regulation, aiming to attend university to secure a prestigious and well-paid career, coupled with the belief that their program will equip them with the necessary competence to enter the job market. Consequently, they are encouraged to act consciously.

The results also showed that intrinsic motivation was the second-highest mean score among the surveyed students. This is a significant indicator for the educational process, as it demonstrates that students are motivated to learn and expand their knowledge. They strive to overcome challenges to broaden their understanding and find satisfaction in attending university, even during the pandemic and the physical separation from their professors. This type of motivation manifests when an individual engages in activities out of genuine interest and for the pleasure of the action.

In terms of integrated regulation, students pursue university studies to demonstrate their capability in completing the course, helping them to avoid disappointing others, for example. The study also reveals a low incidence of elements associated with amotivation, which is a positive indicator for the

teaching-learning process. At this motivational level, students show little interest and do not engage in proactive behavior.

Finally, to provide a comparative summary based on the referenced studies, it can be observed that Guimarães and Buzneck (2008) revealed that: university students showed the highest performance in the assessment of integrated regulation, while amotivation received the lowest score. Additionally, intrinsic motivation was noted to have the second-highest mean score. Based on the study by Leal, Miranda, and Carmo (2013), Accounting students have a self-determined motivational profile, with intrinsic motivation and integrated regulation being the most prominent factors, while amotivation was again the lowest mean score. The second highest level of motivation was associated with external regulation.

In the study by Borges, Miranda, and Freitas (2017), who also evaluated Accounting students, identified regulation stood out, followed by intrinsic motivation, while the lowest mean score was for external regulation driven by social rewards. Thus, this comparison demonstrates that, even in the pandemic, the results of this study do not diverge significantly from the baseline studies conducted when learning was in person.

Marques et al. (2024) found that the academic motivation of Accounting students declines over the course of their degree program, while amotivation increases in a statistically significant manner. This pattern was observed both in the longitudinal tracking of students from their first to fourth year and in comparisons between different cohorts of incoming and graduating students. These findings are different from our study, where the results are attributed, in part, to the pandemic context, which may have influenced students' academic motivation throughout their studies.

In light of this, it became clear that there was no discrepancy between the findings of this research and those of the studies previously mentioned. The differences likely arose from the pandemic context; according to Gusso et al. (2020), coping with emergency remote teaching and the lack of the teacher's immediate presence, along with mental health issues such as anxiety and stress, created significant challenges. Furthermore, another factor that may have hindered the learning process was that 55% of respondents accessed course content and synchronous classes from home or other locations that were likely unsuitable for studying.

It is important to emphasize that the results from this study may provide valuable insights for institutions to review their pedagogical practices. By doing so, they can implement strategies to identify the factors that directly and indirectly influence students' motivation levels, strengthening the teaching-learning process. This information obtained also helps in understanding the current context of the students, enabling adjustments that can engage those who may be losing motivation during their courses. Once these factors that lead to amotivation are detected, it will become possible for students with low levels of motivation to overcome this situation and achieve success in the university environment.

Costa et al. (2021) address the importance of improving pedagogical practices and teaching performance, highlighting that the factors related to the academic environment, teaching methodologies, and teacher-student interaction can influence student motivation. Similarly, Marques et al. (2024) emphasize the need for coordinators and teachers to develop initiatives focused on improving the aspects that influence students' academic motivation.

It is important to highlight that the context during the survey of the students in the three foundational studies was different, as it involved in-person classes. Teachers were present, interacting with students, and had access to the full educational infrastructure offered by the institutions. Consequently, these factors influenced student motivation and the characteristics of the sample to some degree.

FINAL CONSIDERATIONS

Regarding the objective of this study, which was to evaluate the motivation levels of Accounting students at Higher Education Institutions in Rio Grande do Sul concerning the transition from in-person to remote learning, through the lens of Self-Determination Theory, it was found that the majority of students are driven by external and identified regulation. These students attend university to achieve future success. It was also observed that they possess intrinsic motivation; that is, they are innately motivated to learn and expand their knowledge. These motivational levels emerged because the students were experiencing a completely atypical and challenging situation.

Students had to contend with emergency remote learning, the lack of immediate teacher presence, and daily challenges, such as technical internet issues and the use of technological tools, as well as mental health struggles like anxiety and stress. These difficulties and limitations led to a lack of motivation, which, although low, was still observed among the students.

Recognizing the significance of motivation in the learning process, it becomes evident that a student's level of motivation directly influences their engagement with academic activities and their dedication to constructing their own understanding. This issue gained particular relevance during the era of emergency remote learning, as many students faced challenges in adapting to new educational methods and needed to cultivate greater autonomy in their studies.

In this context, Self-Determination Theory (SDT) is a theoretical framework underpinning this study, as it provides insights into the motivational factors influencing learning-related behavior, consistent with the work of Deci and Ryan (1985). We also found that motivation was enhanced when students actively participated in decisions regarding their learning process, fostering greater engagement with their studies. For this reason, the theory is recognized as one of the leading contemporary theories for understanding human motivation and is widely used in educational research.

In terms of practical contributions to accounting education, this research aims to help program coordinators, faculty members, and higher education institutions in understanding the factors that influence the motivation and autonomy of accounting students. This understanding can inform the development of more effective educational practices that foster student participation and improve the teaching-learning process.

From a social perspective, the research contributes to the development of professionals who are more motivated, critical, and prepared to face the challenges of the contemporary labor market, a market characterized by the integration of behavioral competencies, critical thinking, effective communication, and practical skills. Furthermore, in the context of accounting education, the study expands knowledge on the factors related to student motivation, engagement, and autonomous learning. This provides a foundation for enhancing institutional policies aimed at strengthening the quality of training for future professionals in the field.

These findings highlight the need to monitor students throughout their academic journey and emphasize the importance of preparing faculty members to support students in maintaining their intrinsic motivation. This approach not only enhances academic performance but also makes the learning experience more enjoyable for students. From a theoretical perspective, this work initially encourages reflection on student motivation within the context of accounting education and aims to inspire further research interest in this area.

This study focused specifically on the motivations of Accounting students at three public higher education institutions. As a result, the findings may not apply to all accounting students across the country. Therefore, they should be interpreted with caution, given that the sample did not represent the entire student body of the three programs investigated, nor did it include private institutions. It would be valuable to incorporate qualitative methods, such as student interviews during in-person classes (post-pandemic, to gain a deeper understanding of the phenomena of academic motivation and amotivation. Thus, expanding the sample of respondents from higher education institutions is recommended to broaden the discussion on this topic.

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The content of the research text is within the manuscript.

AUTHORS' CONTRIBUTIONS

Author 1 – Writing: original draft, Investigation, Methodology, Software, Data curation

Author 2 – Writing: review and editing, Project administration, Supervision, Formal analysis

Author 3 – Validation, Writing: review and editing, Visualization.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest regarding this article.