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# THE ROLE OF SELF-REGULATED LEARNING IN THE SELF-ASSESSMENT OF ACADEMIC PERFORMANCE AMONG GRADUATE STUDENTS

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## ABSTRACT

This study aimed to investigate the influence of Self-Regulated Learning (SRL) on the Self-Assessment of Academic Performance among graduate students in the field of business. Methodologically, a quantitative and descriptive research design was adopted, with data collected through a survey and analyzed using Pearson's Correlation and Simple Linear Regression to examine the relationship between self-regulatory strategies and the Self-Assessment of Academic Performance. The findings revealed that SRL is positively and significantly correlated with academic performance. The analysis further indicated that SRL functions as a predictor of performance, enabling individuals to translate intention into performance and to navigate the challenges of graduate studies, thereby fostering a more dynamic and cyclical approach to learning. However, certain limitations were identified, including the small sample size (34 respondents) and the subjective nature of self-assessment, highlighting the importance of future research to address these constraints and deepen the analysis. Therefore, this study contributes to the literature on SRL in graduate education. By linking Social Cognitive Theory with empirical findings, it advances the understanding of how universities can act as promoters of autonomy, supporting graduate programs that seek to enhance the learning process and student retention.

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## 1 INTRODUCTION

In higher education, being autonomous and understanding the responsibilities associated with academic demands are essential for students to achieve strong academic performance (Frison et al., 2021; Yossatorn et al., 2024). Throughout their academic trajectory, students face various difficulties, most of which are related to anxiety, stress, procrastination, and a lack of motivation to carry out academic tasks (Frison et al., 2021; Fynn, 2022). When such obstacles intensify, they tend to lead to student dropout, a phenomenon that has been gradually increasing in both undergraduate and graduate education (Fynn, 2022; Miranda et al., 2022).

Self-Regulated Learning (SRL) emerges as a potential strategic mechanism to mitigate these obstacles (Fior et al., 2022; Yossatorn et al., 2024), as this learning strategy enhances students' autonomy, fosters awareness of their own capabilities, improves adaptation to the university environment among newcomers, and increases motivation to carry out academic activities (Deng et al., 2022; Fior et al., 2022; Frison et al., 2021; Koh et al., 2022; Yossatorn et al., 2024).

Understanding SRL, as proposed by Zimmerman (1989; 2002), requires examining Social Cognitive Theory (SCT), developed by Bandura (1986). This theory describes the construct of self-regulation and how it can affect the individual. SCT introduces the concept of agency, referring to individuals as capable of modifying their behavior and environment based on their goals (Bandura, 1986; Silva, 2019).

In this regard, Bandura (1986) proposes the triadic model, aimed at understanding human behavior, which comprises three main components: Person, Behavior, and Environment. The author emphasizes that these elements are interrelated, highlighting that the Person is not merely a product of the Environment, as individuals can modify it through self-regulation and self-efficacy, the latter understood as the belief in one's own capabilities.

Zimmerman (1989; 2002) applies Bandura's (1986) construct to the learning context, defining self-regulation as goal-directed thoughts and behaviors. As a metacognitive process, the effective application of Self-Regulated Learning requires individuals to understand their limitations, adopt a proactive stance, and engage in continuous effort to overcome barriers and enhance their capabilities (Zimmerman, 1989; 2002).

SRL comprises three cyclical phases: the forethought phase, the performance phase, and the self-reflection phase (Zimmerman, 1989). The forethought phase is directly related to students' preparation for the task to be performed and their motivation (Silva, 2019). The performance phase is connected to the actual learning process (Silva, 2019; Zimmerman, 2002). Finally, the self-reflection phase is the moment in which individuals learn from their successes and mistakes during the activity (Silva, 2019; Zimmerman, 2002).

From this perspective, the application of Self-Regulated Learning is complex due to the subjectivity inherent in this construct and the central role of self-knowledge in its implementation (Zimmerman, 2002). This effort is supported by several studies that highlight SRL as a critical factor for academic success at the undergraduate level, associating it with self-efficacy, academic motivation, and institutional support (Frison et al., 2021; Silva, 2019; Koh et al., 2022).

Studies such as those by Frison et al. (2021), Koh et al. (2022), and Fior et al. (2022) demonstrate that pedagogical interventions based on SRL reduce dropout rates and improve adaptation, especially among vulnerable students. Furthermore, Silva (2024) and Koh et al. (2022) identify personality traits and ethnic contexts as moderators of self-regulatory strategies, while Yossatorn et al. (2024) demonstrate the mediating role of task value in the relationship between SRL and academic performance.

However, the literature has largely neglected graduate students, focusing primarily on undergraduates and on context-specific variables for this population. Nevertheless, Miranda et al. (2022) point out that master's and doctoral students face challenges similar to those identified by Frison et al. (2021), such as anxiety, stress, and lack of motivation. In addition, the application of emotional self-regulation contributes to students' emotional stability, thereby supporting their well-being (Silva et al., 2021). Moreover, Frison et al. (2021) emphasize that these variables negatively affect academic performance, an issue that can be mitigated through strategies grounded in Self-Regulated Learning.

In light of the above, the following research question emerges: What is the effect of the levels of Self-Regulated Learning demonstrated by graduate students on their academic performance? In this context, the objective of this study is to analyze the effect of the levels of Self-Regulated Learning presented by graduate students in the fields of Business Administration and Accounting on their academic performance, using the Academic Self-Regulation Scale as an assessment instrument.

Recent studies highlight that SRL strengthens self-efficacy, understood as the individual's confidence in their own abilities, as well as intrinsic motivation and student retention (Koh et al., 2022; Xu et al., 2023). These factors are particularly critical in graduate programs, where intellectual demands and pressures for productivity are intensified.

Accordingly, investigating Self-Regulated Learning among graduate students becomes essential to support them in coping with academic challenges such as anxiety, lack of motivation, and adaptive difficulties, in addition to the ongoing need for effective time management (Fior et al., 2022; Frison et al., 2021; Miranda et al., 2022). Although the literature underscores the importance of SRL for undergraduate students, there remains a notable scarcity of studies addressing this construct in the context of graduate education, despite its clear relevance for this population.

This study contributes by examining whether SRL strategies enhance both academic performance and the understanding of learning among graduate students. From a practical standpoint, the findings are expected to inform the development of institutional policies, such as mentoring programs and advisor training initiatives, aimed at strengthening students' self-regulatory capacity and reducing dropout rates. Furthermore, the study advances scientific discussion within the field of business and promotes broader dissemination of the topic to external audiences through workshops and lectures.

## 2 THEORETICAL FRAMEWORK

### 2.1 Social Cognitive Theory (SCT)

Social Cognitive Theory, developed by Bandura (1986), establishes agency as the central theoretical axis for understanding processes of self-development, adaptation, and transformation in individuals. According to this perspective, agency consists of the ability to deliberately intervene in one's own behavior and in the context in which one lives (Silva, 2019). Within this framework, individuals are conceived as self-organizing, proactive, self-regulating, and self-reflective beings who actively contribute to their living conditions, rather than being merely products of them (Bandura, 1986; Silva, 2019; Zimmerman, 2015).

From this standpoint, human agency encompasses four fundamental characteristics (Bandura, 1986): intentionality, forethought, self-reactiveness, and self-reflectiveness. Intentionality refers to the formulation of purposes, including the design of strategies and operational plans aimed at their achievement. Forethought enables the temporal extension of

agency, allowing individuals to set goals and anticipate the likely outcomes of their actions in order to guide and motivate their efforts in advance (Bandura, 1986; Silva, 2019).

Moreover, self-reactiveness involves the adoption of personal standards, as well as the monitoring and regulation of one's own actions through self-influences (Bandura, 1986; Silva, 2019). Similarly, self-reflectiveness refers to the capacity for self-examination of one's functioning. Through functional self-awareness, individuals reflect on their personal efficacy, the soundness of their thoughts and actions, and the meaning of their pursuits, making adjustments when necessary (Bandura et al., 2008).

The cyclical interaction of these four characteristics is essential, as intentionality leads to the anticipation of plans and outcomes (Bandura et al., 2008; Pajares & Olaz, 2008; Silva, 2019). In turn, self-reactiveness involves the execution of these plans, which subsequently feeds into self-reflection regarding the effectiveness of actions and the validity of the original intentions, potentially leading to adjustments in future intentions and plans (Pajares & Olaz, 2008).

The application of these characteristics results in changes in behavior and, consequently, in the environment in which the individual is embedded (Bandura, 1986). In this sense, another central concept within Social Cognitive Theory is the triadic model, which describes human functioning as the product of the dynamic interplay among personal, behavioral, and environmental influences (Bandura et al., 2008). These three factors continuously interact and mutually influence one another in shaping behavior.

Personal influences are associated with cognitions, affects, biological factors, and human agency (Bandura et al., 2008). Among cognitive factors, two main constructs stand out as essential for explaining and promoting adaptive human functioning: perceived self-efficacy and self-regulatory capability. Self-efficacy refers to individuals' beliefs in their own abilities to organize and execute the actions required to achieve specific outcomes (Bandura et al., 2008; Koh et al., 2022; Xu et al., 2023).

Self-regulation, in turn, describes how individuals exert control over their thoughts, feelings, motivations, and actions based on their goals (Bandura, 1986; Zimmerman, 2002). This mechanism operates through three primary subfunctions: self-monitoring of behavior, judgment of behavior in relation to personal standards and environmental circumstances, and affective self-reaction (Bandura, 1986; Fior et al., 2022).

Thus, the complexity of this construct and its applicability across multiple fields of study become evident, particularly in the field of education (Silva, 2019). Self-Regulated Learning (SRL), as developed by Zimmerman (1989, 2002, 2015), is one of the most influential and comprehensive models addressing this theme within the educational domain (Fior et al., 2022).

## 2.2 Self-Regulated Learning (SRL)

Self-Regulated Learning (SRL) seeks to examine how students activate and sustain cognitions, behaviors, and affects in order to achieve their learning goals (Zimmerman, 1989; 2002; 2015). It is a self-directed process that transforms mental abilities into academic skills, enabling students to regulate their behavior and emotions (Silva, 2019; Zimmerman, 2002). Its relevance lies in promoting autonomy, motivation, and self-awareness, positioning the learner as the primary agent of their own learning (Fior et al., 2022; Koh et al., 2022; Zimmerman, 2002).

By applying these strategies, students monitor, control, and take responsibility for their metacognitive, motivational, and behavioral processes, which is essential for academic success (Fior et al., 2022; Frison et al., 2021; Koh et al., 2022; Zimmerman, 2002). However, for these benefits to be observed, it is essential that this approach be implemented in a cyclical and continuous manner, given the importance of feedback in sustaining and refining the process (Zimmerman, 2002; 2015).

This learning cycle, as outlined by Zimmerman (1990; 2002; 2015), is structured into three phases: the forethought phase, the performance phase, and the self-reflection phase. The forethought phase precedes task execution and involves task analysis, the establishment of goals (specific and proximal), and the strategic planning of activities (Silva, 2019; Zimmerman, 2002). At this stage, students organize their approach in order to understand the challenge at hand and identify potential gaps in their knowledge that need to be addressed (Silva, 2019).

The performance phase occurs during the execution of learning. At this stage, students employ self-control processes, such as the use of task-specific strategies, in order to manage attention, regulate time allocation, recognize their limitations, and determine when it is necessary to seek external assistance (Silva, 2019; Zimmerman, 2015). The self-reflection phase takes place after the learning attempt and includes self-judgments, such as self-evaluation and causal attributions, that is, identifying the causes of success or failure (Silva, 2019; Zimmerman, 2002).

Based on the identification of key mistakes and successes within the learning process, students use this information in the subsequent forethought phase, making the process cyclical and interrelated (Silva, 2019; Zimmerman, 2015). In this way, the application of SRL contributes to the development of student autonomy and enhances their ability to manage their own learning, supporting both undergraduate and graduate students in overcoming challenges inherent to their academic programs (Fior et al., 2022; Koh et al., 2022).

University students frequently face adaptation difficulties and must develop autonomous study practices while maintaining motivation (Fior et al., 2022; Frison et al., 2021). In this context, SRL helps students become active agents in their educational process by enabling them to plan, monitor, and regulate their learning (Koh et al., 2022; Xu et al., 2023). Ultimately, the development of these competencies supports students in dealing with academic demands, improving performance, enhancing retention, and mitigating obstacles such as procrastination, anxiety, and lack of motivation (Frison et al., 2021; Semprebon et al., 2017; Silva, 2019).

### 2.3 Previous Studies

The contemporary literature on Self-Regulated Learning (SRL) in higher education has highlighted its central role as a mechanism for coping with academic challenges. In this context, recent studies have sought to understand how self-regulatory strategies influence students' academic trajectories and retention, acting as essential tools in addressing obstacles such as anxiety, lack of motivation, and difficulties in time management.

First, Frison et al. (2021) identified anxiety and family-related issues as key factors underlying academic underperformance, emphasizing the strengthening of self-regulatory practices as a means to mitigate these challenges. Pedagogical interventions have proven to be promising in reversing this scenario, as demonstrated by Fior et al. (2022), who showed that courses focused on promoting self-regulation expand both knowledge and the use of learning strategies, generating positive impacts, particularly among students from public school backgrounds.

This perspective suggests that individual characteristics can influence the use of self-regulatory practices. This was evidenced by Koh et al. (2022), who found that first-generation students, defined as those who are the first in their families to attend higher education, tend to exhibit lower levels of self-efficacy and self-regulation. Furthermore, Silva (2024) emphasizes that personality traits, based on the Big Five model, are strong predictors of individuals' propensity to apply SRL strategies.

Yossatorn et al. (2024) further demonstrated that Self-Regulated Learning is positively associated with students' perceived task value, indicating that individuals who are proficient in self-regulatory strategies tend to assign greater meaning to academic tasks. In line with this, Deng et al. (2022) highlight that students with high intrinsic task value and greater use of self-regulatory

strategies exhibit better academic performance, reinforcing that such strategies enhance intrinsic motivation and foster greater autonomy.

The relationship between individual characteristics and academic success is also mediated by self-regulatory capacity. Koh et al. (2022) found that academic self-efficacy positively influences planning and monitoring, acting as a crucial mediating mechanism for the success of first-generation students. Supporting the importance of these variables, Deng et al. (2022) observed that although students frequently employ goal-setting strategies, monitoring and self-evaluation are less commonly applied. However, those who attribute intrinsic value to tasks and consistently employ self-regulatory strategies demonstrate superior academic performance.

Based on these findings, SRL can be considered a strategic tool for mitigating social inequalities, as significant differences in self-efficacy and self-regulation are observed across cultural and ethnic groups. The use of personalized feedback tailored to each student can help address these specificities. The literature also highlights the role of institutions and educators in integrating SRL into students' daily academic practices, as its implementation facilitates student retention by enhancing motivation, strengthening self-efficacy, and alleviating the primary causes of academic underperformance.

## 3 METHODOLOGICAL PROCEDURES

Regarding its objectives, this study is classified as descriptive, as it details the phenomenon under analysis and establishes correlations between variables (Gil, 2019). Furthermore, a survey was adopted as the data collection procedure in order to capture specific attributes of the sample through questionnaires (Freitas et al., 2000). In terms of the research approach, a quantitative design was employed to investigate relationships between variables expressed through numerical data (Creswell & Creswell, 2021).

The study complied with the provisions of Resolution No. 510/2016 of the Brazilian National Health Council (CNS), which establishes the guidelines applicable to research in the Human and Social Sciences involving methodological procedures that include the use of data directly obtained from participants or identifiable information, or that may entail risks beyond those encountered in everyday life (CNS, 2016). The study is registered on the Plataforma Brasil under opinion number 7,730,189.

The study focused on graduate students from a Federal University in the southern region of Rio Grande do Sul, Brazil. The target population consisted of students enrolled in Business Administration and Accounting programs in 2025, which, according to program coordinators, comprised 40 students in Business Administration and 25 in Accounting. Data collection was conducted during the second semester of 2025.

The final sample consisted of 35 graduate student respondents, including 18 from Business Administration and 17 from Accounting, who completed the questionnaire distributed via email or WhatsApp. This population segment is supported by Wyse et al. (2023), who identified the presence of self-sabotaging mechanisms among students in these fields, demonstrating that such behavioral patterns negatively influence their academic development.

The research instrument was accompanied by an Informed Consent Form (ICF), ensuring participants' privacy and confidentiality throughout the data collection process. The questionnaires were administered online using the Google Forms platform and were structured in three sections. The first section addressed the respondents' profile. The second section consisted of 20 statements assessing the level of self-regulation, using a five-point Likert scale ranging from Never to Always, based on Silva (2019). The third section was developed from a questionnaire comprising eight items, using a Likert-type scale ranging from 0 to 10, aimed at capturing respondents' academic performance, based on Amaro's dissertation (2014).

Based on the collected statistical data, data treatment and standardization were performed using electronic spreadsheets, and the Statistical Package for the Social Sciences (SPSS) software was employed for data analysis. The analytical procedures included Pearson's Correlation (ρ) and Simple Linear Regression (SLR). Pearson's correlation coefficient (ρ) measures the linear relationship between two variables, ranging from −1 to 1, where a positive value indicates that the variables increase or decrease together, while a negative value indicates that one variable increases as the other decreases (Fávero & Belfiore, 2017).

The strength of the correlation can be classified into three levels: high (0.7 to 1.0), moderate (0.4 to 0.6), and low (below 0.3) (Field, 2009). In addition, the p-value indicates the statistical significance of the correlation, which is considered significant when it is less than 0.10 (Hair et al., 2009). Simple Linear Regression aims to model the linear relationship between a dependent variable and a single independent variable, allowing for the prediction of values and the quantification of the predictor's effect on the outcome (Fávero & Belfiore, 2017).

Furthermore, Fávero and Belfiore (2017) emphasize that SLR seeks to describe the behavior of one variable as a function of the variation in another, providing an equation that represents this functional relationship. For the results of Simple Linear Regression to be valid and efficient, several assumptions must be satisfied, including linearity between variables, normality of the data, homoscedasticity, that is, constant variance of the residuals, normality of residuals, and independence of errors (Fávero & Belfiore, 2017).

## 4 DATA ANALYSIS

Data collection was carried out through the distribution of the research instrument via email or WhatsApp. However, due to the limited effectiveness of these methods, QR codes were implemented in the research laboratories of the Accounting and Business Administration programs in order to facilitate and expand the dissemination of the study.

### 4.1 Analysis of Respondents' Profile

Based on the analysis of respondents' profiles, one Business Administration participant was identified as presenting anomalous responses in relation to the self-assessment of Academic Performance. This was evidenced by a value below three standard deviations from the mean, classifying the case as an outlier and leading to its exclusion from the sample (Hekimoglu & Koch, 2000).

Thus, with 34 respondents, the sample still represents approximately 52% of the target population, corresponding to 43% of graduate students in Business Administration and 68% of those in Accounting. The subsequent analysis of the profile, correlations, and Simple Linear Regression was based on the examination of mean responses by program and their respective standard deviations, as presented in Table 1.

**Table 1**
*Sample Comparison*

| **Scales** | **Self-Regulated Learning** | | **Academic Performance** | |
|---|---|---|---|---|
| **Programs** | **Accounting** | **Business Administration** | **Accounting** | **Business Administration** |
| Mean by Program | 3.84 | 3.84 | 8.91 | 8.55 |
| Overall Mean | 3.84 | | 8.73 | |
| Standard Deviation | 0.95 | 0.81 | 1.15 | 1.12 |

Source: Prepared by the authors.

Based on these results, the similarity between the samples was confirmed, allowing for their aggregation and the continuation of the analysis. In addition, the demographic composition revealed a predominance of female participants (67%; n = 23) compared to males (33%). This prevalence reflects trends also observed at the undergraduate level, where female participation often exceeds 57%, indicating the persistence of this profile among graduate students (Deng et al., 2022; Koh et al., 2022; Yossatorn et al., 2024). Furthermore, the study sought to examine the occupation and workload of the sample, with this relationship presented in Table 2.

**Table 2**
*Occupation–Workload Relationship*

| **Occupation** | **Formal Employment** | **Informal Employment** | **Scholarship Holder** | **Full-Time Student** | **Other** | **Total** |
|---|---|---|---|---|---|---|
| Respondents | 22 | 1 | 9 | 1 | 1 | 34 |
| Workload | **44 Hours** | **40 Hours** | **30 Hours** | **20 Hours** | **Not Employed** | **Total** |
| Respondents | 5 | 19 | 2 | 2 | 6 | 34 |

Source: Prepared by the authors.

These findings indicate that a significant portion of the sample is engaged in formal or informal paid employment and allocates a substantial part of their week to these activities. In this regard, Miranda et al. (2022) argue that balancing the demands of graduate studies with professional work, as well as personal and family life, places a considerable burden on students and directly affects their stress levels, consequently impacting their academic performance.

The assessment of students' level of Self-Regulated Learning was conducted by summing the items of the established scale, resulting in a mean score of 76.74 and a standard deviation of 9.49. These findings indicate that respondents demonstrate a strong application of self-regulatory strategies, as their scores are above the midpoint of the scale, which ranges from 20 to 100.
Silva et al. (2021) highlight that graduate students tend to exhibit a strong ability to manage their affective dimensions and regulate their emotions, reflecting a high level of emotional self-regulation, a result that is consistent with the findings of this study.

Based on the sum of the corresponding items of the academic performance scale, it was observed that graduate students evaluate themselves positively, as evidenced by a mean score of 69.79 and a standard deviation of 5.80. This mean is relatively high within the possible range of the scale, which varies from 0 to 80. The study by Semprebon et al. (2017) demonstrated similar findings, as their respondents also reported a positive perception of their academic performance when the same scale was applied.

### 4.2 Simple Linear Regression

For the development of the Simple Linear Regression, it is essential to first apply Pearson's Correlation in order to verify the existence of a linear relationship between the variables under study. For the proper application of this correlation, it is necessary that the data exhibit normality (Fávero & Belfiore, 2017). Accordingly, normality tests were conducted using the Kolmogorov–Smirnov test, which is suitable for samples with more than 50 observations, and the Shapiro–Wilk test, which is appropriate for smaller samples. Based on these results, Table 3 was constructed.

**Table 3**
*Normality Test*

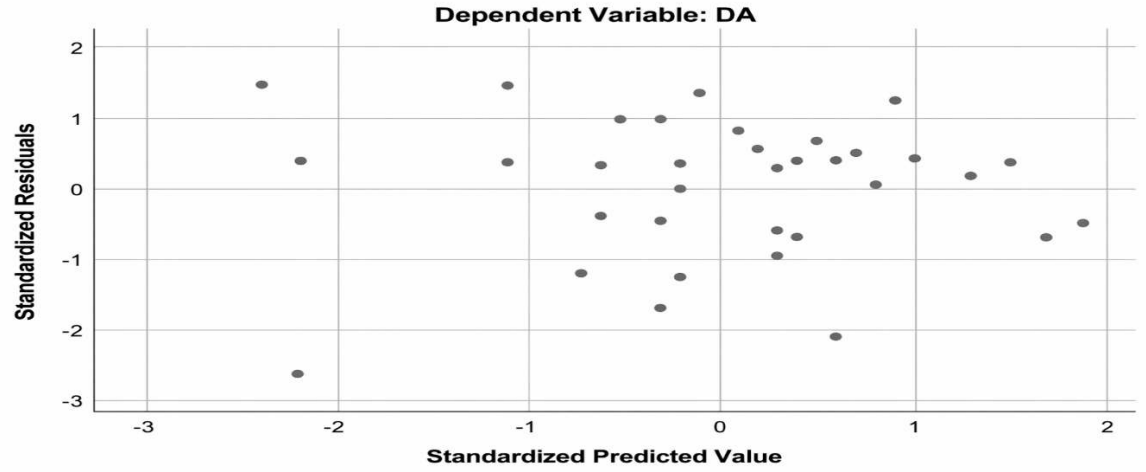
| Kolmogorov-Smirnov | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|
| Statistic | Df | Sig. | Statistic | df | Sig. |
| 0,178 | 34 | 0.008 | 0.949 | 34 | 0.113 |

Source: Prepared by the authors.

Since the significance value of the Shapiro–Wilk test was greater than 0.05, it can be concluded that the data exhibit normality. The application of Pearson's Correlation showed that both variables vary jointly, as indicated by a correlation coefficient (r) of 0.568 ($p < 0.001$). This positive correlation is moderate, requiring careful interpretation; however, its statistical significance is evident, given that the p-value is below 0.10, as highlighted by Hair et al. (2009). These results reinforce the linear relationship between the dependent variable Academic Performance and the independent variable Self-Regulated Learning.

According to Fávero and Belfiore (2017), meeting the assumptions of normality and linearity allows the analysis to proceed using Simple Linear Regression. To assess homoscedasticity, it is necessary to examine the residual plot, which should display a random dispersion pattern, as illustrated in Figure 1.

**Figure 1**
*Scatter Plot*

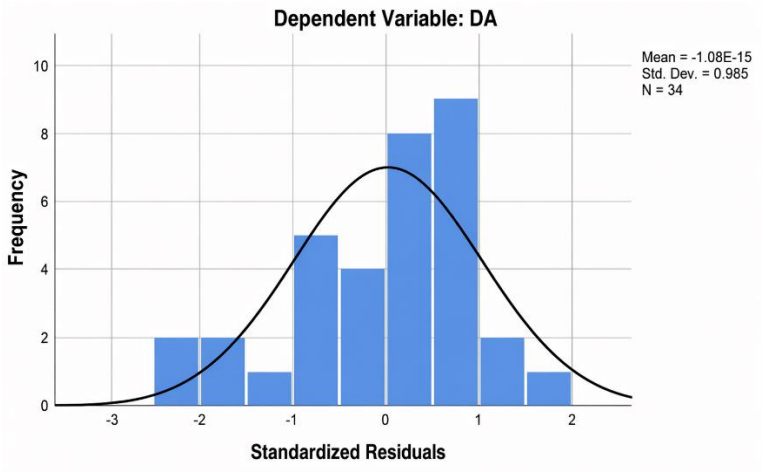



Source: Prepared using SPSS.

From Figure 1, it can be observed that this assumption is satisfied, as no funnel-shaped pattern is present (Fávero & Belfiore, 2017), supporting the conclusion that the variance can be considered constant across all levels of the independent variable under study.

The next assumption involves verifying whether the regression errors, that is, the residuals, are normally distributed. This assessment is conducted through the histogram of the residuals, as illustrated in Figure 2.

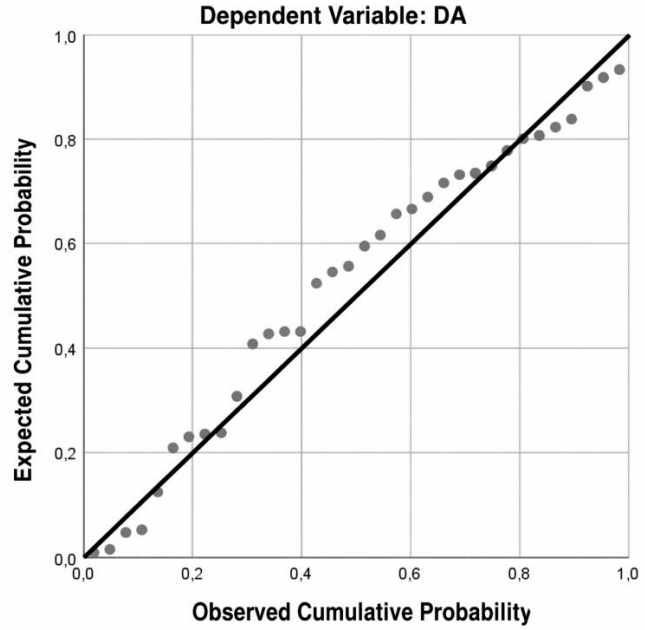
**Figure 2**
*Histogram of Residuals and Normal Distribution*




Source: Prepared by the authors.

Figure 2 compares the histogram of the residuals with a normal distribution, showing an acceptable level of discrepancy between them. Furthermore, to better assess this assumption, it is also necessary to examine the Q–Q plot, which compares the observed quantiles with the theoretical quantiles of the reference distribution, as presented in Figure 3.

**Figure 3**
*Quantiles vs. Quantiles (Q–Q Plot)*




Source: Prepared by the authors.

Figure 3 shows a certain discrepancy between the regression residuals and the theoretical quantiles; however, a general linear pattern of the residuals can still be observed, as noted by Fávero and Belfiore (2017), allowing for the acceptance of the normality assumption of the residuals. The final requirement for conducting Simple Linear Regression is the independence of errors, which is assessed using the Durbin–Watson test. Its value should be close to 2 (Durbin & Watson, 1950).

The test yielded a value of 1.85, indicating compliance with the acceptable range and confirming the independence of the regression errors. Given that the assumptions of Simple Linear Regression were satisfied, the analysis proceeded with the Coefficient of Determination ($R^2$), which indicates the extent to which variation in Self-Regulated Learning, the independent variable, explains variation in the Self-Assessment of Academic Performance, the dependent variable. To present this coefficient, Table 4 was constructed.

**Table 4**
*Coefficient of Determination ($R^2$)*

| R | $R^2$ | Adjusted $R^2$ | Standard Error of the Estimate |
|---|---|---|---|
| 0.568 | 0.323 | 0.302 | 4.845 |

Source: Prepared by the authors.

The coefficient of determination indicates that 32.3% of the variability in the Self-Assessment of Academic Performance is explained by Self-Regulated Learning, suggesting an adequate model fit. However, to further support this result, it is necessary to examine the ANOVA test and the t-test, which aim, respectively, to assess the overall statistical significance of the model and to evaluate whether the independent variable effectively influences the dependent variable.

For the ANOVA test, a null hypothesis is established to determine whether the model explains the variation in the dependent variable. This is assessed through the F-value, which must present a significance level below 0.05 (Fávero & Belfiore, 2017). Accordingly, the null hypothesis is rejected, as the F-value was 15.267 with a significance level of 0.00, indicating that the model has explanatory power for Academic Performance. For the t-test and the formulation of the regression equation, Table 5 was constructed, enabling a clear visualization of the variables to be analyzed.

**Table 5**
*Regression Equation*

| Variables | B | Error | Beta | t | Sig. |
|---|---|---|---|---|---|
| (Constant) | 43.15 | 6.869 | | 6.281 | 0 |
| SRL | 0.347 | 0.089 | 0.568 | 3.907 | 0 |

Source: Prepared by the authors.

The t-test aims to determine whether the independent variable has a significant effect on the dependent variable. For this purpose, the significance level of SRL must be below 0.05. Based on the results, it can be concluded that Self-Regulated Learning has a statistically significant effect on Academic Performance. This context allows for the formulation of the regression equation, which indicates that the Self-Assessment of Academic Performance corresponds to 43.15 + 0.347 × (Self-Regulated Learning), with SRL measured using the Self-Regulated Learning Scale proposed by Silva (2019).

### 4.3 Discussion

The analysis of the Simple Linear Regression results, detailed in the previous section, demonstrated a positive and statistically significant relationship between the levels of Self-Regulated Learning (SRL) and the Self-Assessment of Academic Performance among graduate students in Business Administration and Accounting. This finding aligns with a substantial body

of research that identifies self-regulated learning as a robust predictor of academic success, associating it with greater content retention and increased engagement with studies (Deng et al., 2022; Frison et al., 2021; Koh et al., 2022; Silva, 2024; Xu et al., 2023).

Studies investigating the causes of academic underperformance highlight the importance of SRL. Frison et al. (2021) identified lack of motivation, anxiety, and low persistence as the main factors perceived by students as contributing to academic failure, all of which can be mitigated through the application of SRL. Similarly, procrastination, defined as the act of delaying tasks, is understood as a behavioral manifestation of a failure in self-regulation and exerts a negative influence on academic performance (Semprebon et al., 2017).

In this sense, SRL emerges as a fundamental mechanism for enhancing students' academic performance by mitigating such obstacles and improving behavioral management, a point reinforced by the findings of this study. Social Cognitive Theory provides the theoretical foundation for understanding this relationship, as it adopts an agentic perspective in which individuals are viewed as proactive, self-regulating, and self-reflective beings who actively contribute to their life conditions, rather than merely being shaped by them (Bandura et al., 2008).

Accordingly, the high levels of SRL observed indicate that students effectively apply the self-regulatory processes described by Bandura (1986). Through these strategies, they act as agents capable of modifying their functioning and enhancing their academic performance, as evidenced by the results. In this regard, SRL can be understood as the operationalization of human agency within the domain of learning.

As noted by Silva (2019), self-regulation in the educational context requires students to adopt an active stance, taking responsibility for deliberately managing their metacognitive, motivational, and behavioral dimensions. From this perspective, the statistical results of this study reflect the continuous pursuit of improvement characteristic of graduate education, suggesting that students become active architects of their own scientific knowledge, as they apply these strategies and develop an understanding of how to overcome their limitations and strengthen their capabilities.

Although the relationship between SRL and performance was evidenced in this study, caution is warranted in its interpretation due to the complexity of the learning process, which involves multiple psychological variables that may influence this relationship. For example, Koh et al. (2022) highlight that self-regulation strengthens self-efficacy, and it is this enhanced belief that sustains the effort and persistence required to improve academic performance.

Expanding on this analysis, Yossatorn et al. (2024) propose a cascading model, arguing that task value, understood as the student's perception of the importance and interest of an activity, mediates the relationship between self-regulation and self-efficacy. The authors describe a more detailed causal chain: (i) the student applies SRL strategies; (ii) this active engagement leads them to perceive the task as more meaningful and valuable; (iii) this increased valuation enhances their confidence in their ability to complete the task successfully; and (iv) this elevated self-efficacy ultimately translates into improved academic performance.

Self-Regulated Learning is not merely a tool for the enactment of human agency, but also a motivational catalyst that triggers a positive psychological cascade, highlighting the complexity inherent in the learning process. It is also important to recognize the existence of other variables that may influence this relationship, such as task value, self-efficacy, and student motivation. The findings of this study, by confirming SRL as a key predictor of performance, generate direct implications for pedagogical practices in graduate education.

The main conclusion is that self-regulation should not be viewed as a fixed personality trait, but rather as a set of processes that learners employ and adapt to each learning task, which can be taught through instruction (Koh et al., 2022; Silva, 2024; Zimmerman, 2002). This assertion is reinforced by Fior et al. (2022), who demonstrated that an elective course grounded in SRL-

based methodologies enhanced students' understanding of these strategies and how to apply them according to individual specificities.

The need for pedagogical practices grounded in SRL is further supported by the literature, which associates the lack of self-regulatory skills with academic underperformance (Frison et al., 2021). Such practices should be differentiated to address the diverse needs of students, considering that personal factors, such as being the first individual in the family to attend higher education, may influence initial levels of self-efficacy and self-regulation (Koh et al., 2022). From this perspective, individual characteristics, such as personality traits, play a determining role in the adoption of self-regulatory practices by students (Silva, 2024).

Thus, through targeted interventions involving self-regulatory variables, it is possible to teach students how to enhance their learning, better understand their capabilities, and mitigate the obstacles that hinder their comprehension processes (Deng et al., 2022; Fior et al., 2022; Frison et al., 2021; Koh et al., 2022; Xu et al., 2023). Finally, the linear relationship between Self-Regulated Learning and the Self-Assessment of Academic Performance represents an opportunity to understand how learning strategies can improve the training of students and professionals within an institution, as well as the institution's responsibility to promote and support the development of such strategies.

## 5 CONCLUSION

This study aimed to analyze the effect of Self-Regulated Learning (SRL) on the Self-Assessment of Academic Performance among graduate students in Business Administration and Accounting. The results confirmed the central hypothesis of the research, demonstrating a positive and significant relationship between the use of self-regulatory strategies and Academic Performance, indicating that Social Cognitive Theory, together with Self-Regulated Learning, can be effectively applied in the context of graduate education.

The observed linear relationship identifies SRL as a predictor of Academic Performance, based on the premise that students with high levels of SRL act as proactive agents of their own learning, deliberately planning, monitoring, and adjusting their cognitive, motivational, and behavioral processes to achieve their goals. In this sense, SRL emerges as a dynamic and cyclical mechanism that enables individuals to translate intention into performance, playing a fundamental role in helping graduate students navigate and overcome the recurring challenges of advanced academic training.

Recognizing the relevance of Self-Regulated Learning makes it imperative for graduate programs to adopt a proactive stance in fostering its development. However, caution is warranted in interpreting the results of this study, as although these strategies contribute to academic performance, other psychological variables also play a role in enhancing student outcomes, such as task value and self-efficacy.

Thus, this study contributes to the literature by extending the concepts of Social Cognitive Theory and SRL models to the context of graduate education. The confirmation of a positive linear relationship between self-regulation and performance within this sample demonstrates that the principles of human agency become increasingly prominent as academic demands intensify. The positive and statistically significant results provide a baseline, confirming that findings predominantly established among undergraduate students also hold at more advanced levels of academic training.

Empirically, the results demonstrate the relevance of implementing policies grounded in Self-Regulated Learning for graduate students. In this regard, this study provides a rationale for the creation and implementation of support policies, mentoring programs, and workshops focused on the development of metacognitive skills, with the aim of improving academic performance, promoting student well-being, and potentially reducing dropout rates in higher education.

As a limitation of the study, the relatively small number of participants is highlighted, resulting from low response rates through digital outreach. Therefore, caution is advised in generalizing the findings, as they may represent a specific case rather than a broader trend. Additionally, the simplification of Academic Performance should be noted, as the study relied on the concept of Self-Assessment of Academic Performance, which involves subjectivity and may be susceptible to respondent bias. It is thus important to consider incorporating external measures of academic performance to strengthen the validity of the assessment scale.

Finally, the findings of this study suggest that, beyond quantitative relationships, it is essential to understand the student's subjective experience. In this sense, a valuable direction for future research would be the use of qualitative methods, allowing for a deeper exploration of how graduate students experience the challenges of self-regulation, what barriers they perceive, and which strategies they consider most effective in their daily routines. Such an approach would complement quantitative data, generating richer insights for the development of more empathetic and effective support systems.

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## CONFLICT OF INTERESTS

The authors declare no conflict of interests.

## DATA AVAILABILITY

The dataset is publicly available at: https://doi.org/10.5281/zenodo.18248525.

## AUTHOR CONTRIBUTIONS

| Roles | 1st author | 2nd author | 3rd author | 4th author | 5th author |
|---|---|---|---|---|---|
| Conceptualization | ♦ | ♦ | | | |
| Data Curation | ♦ | ♦ | | | |
| Formal Analysis | ♦ | ♦ | | | |
| Funding Acquisition | | | ♦ | ♦ | ♦ |
| Investigation | ♦ | | | | |
| Methodology | ♦ | | | | ♦ |
| Project Administration | ♦ | | | | |
| Resources | | | ♦ | ♦ | ♦ |
| Software | | | ♦ | ♦ | ♦ |
| Supervision | ♦ | | ♦ | ♦ | |
| Validation | ♦ | | | | |
| Visualization | ♦ | ♦ | | | |
| Writing – Original Draft | ♦ | | | | |
| Conceptualization | ♦ | ♦ | ♦ | ♦ | ♦ |