

Effects of Psychological Capital on Learning Motivation and Study Engagement

Efeitos do Capital Psicológico na Motivação para o Aprendizado e Engajamento nos Estudos

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ABSTRACT

This study analyzes the evidence of the effects of psychological capital on learning motivation and study engagement. The research provides empirical evidence that contributes to the results identified in the literature on the effects of psychological capital on engagement in studies and motivation for learning. A survey was carried out with undergraduate accounting students, in which 190 valid responses were obtained. The structural equation modeling technique was applied in order to test the study's theoretical relationships. The results show a positive and significant relationship between students' psychological capital, learning motivation and study engagement. It also suggests that learning motivation enhances the relationship between students' psychological capital and their engagement with their studies. These results have implications for the learning process of students in the field of business, demonstrating the importance of promoting positive psychological factors for students to achieve satisfactory academic results. It also advances the literature on the effects of students' psychological capital as a predictor of academic learning.

Keywords: Academic Psychological Capital. Learning Motivation. Study Engagement.

RESUMO

Este estudo analisa as evidências dos efeitos do capital psicológico na motivação para a aprendizagem e no engajamento nos estudos. A pesquisa traz evidências empíricas que contribuem para os resultados identificados na literatura sobre os efeitos do capital psicológico no engajamento nos estudos e na motivação para o aprendizado. Uma pesquisa de levantamento foi realizada com estudantes de graduação em Ciências Contábeis, na qual foram alcançadas 190 respostas válidas. A técnica de modelagem de equações estruturais foi aplicada com a finalidade de testar as relações teóricas do estudo. Os resultados evidenciam uma relação positiva e significativa entre o capital psicológico dos estudantes, a motivação para o aprendizado e o engajamento nos estudos. Também sugere

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RESUMO

que a motivação para o aprendizado potencializa a relação entre o capital psicológico dos estudantes e o seu engajamento com os estudos. Esses resultados trazem implicações para o processo de aprendizado de estudantes da área de negócios, demonstrando a importância da promoção de fatores psicológicos positivos para que os estudantes alcancem resultados acadêmicos satisfatórios. Além disso, avança na literatura quanto aos reflexos do capital psicológico dos estudantes, como aspectos preditores da aprendizagem acadêmica.

Palavras-chave: Capital Psicológico do Estudante. Motivação para Aprendizagem. Engajamento nos Estudos.

Introduction

Psychological capital is a topic widely addressed in the organizational context (Karatepe et al., 2024; Nguyen et al., 2024; Ullah et al., 2024). The concept originates from the study by Luthans et al. (2007) and refers to a positive psychological state of development of individuals, characterized by the dimensions of self-efficacy, hope, optimism, and resilience (Luthans et al., 2007). This set of positive psychological resources can be developed and managed to obtain better individual performance (Nguyen et al., 2024).

Previous studies indicate its importance for organizations, as it leads to positive attitudes of individuals, thus contributing to organizational performance (Kidron & Vinarski-Peretz, 2024; Nguyen et al., 2024). Ullah et al. (2024) found that the promotion of psychological capital brings benefits to the organization, employees with a high degree of psychological capital take initiatives in generating and promoting ideas in their work environment, and also present lower levels of stress. Hosseini et al. (2024) explains that psychological capital positively predicts employees' innovative work behavior. In general, both researchers and practitioners are interested in investigating employees' psychological capital (You, 2016).

Due to its relevance, researchers have sought to understand how psychological capital promotes strengths for students' learning (Luthans et al., 2012; Luthans et al., 2014; Siu et al., 2023; Virgă et al., 2022). Students' psychological capital is a resource that strengthens learning, overcomes uncertainty, and facilitates the achievement of goals (You, 2016). Students with high levels of psychological capital generate multiple pathways to achieve their objectives, believe in their own ability

to mobilize cognitive resources, and adapt to adverse situations (Virgă et al., 2022). Psychological capital is related to various academic outcomes, such as student performance in the course (Liu et al., 2024; Martínez et al., 2019; Slåtten et al., 2023), engagement (Slåtten et al., 2023), burnout (Cho et al., 2022), adaptation, stress (Cho et al., 2022; Virgă et al., 2022), intrinsic motivation (Siu et al., 2014), and influences the career growth of university students (Zhou et al., 2024).

In the educational context, studies on psychological capital require more research to analyze this important psychological state in academic outcomes (Siu et al., 2023; Virgă et al., 2022; Zonatto et al., 2020). Recent studies have analyzed students' psychological capital in a fragmented manner. Zhou et al. (2024) analyzed psychological capital in relation to career growth and the role of university students' choice of major. Hidayat et al. (2024) addressed psychological capital and innovative behavior, leveraged by social capital. Wang et al. (2023) investigated the impact of psychological capital on students' well-being with family support as an antecedent and problem-focused coping. Responding to the literature's call for the analysis of psychological capital in academic contexts (Wang et al., 2023; Zhou et al., 2024) and even with study engagement (Martinie & Shankland, 2024), this research is timely to analyze such a factor in the Brazilian context, expanding the sources of evidence on the topic.

Learning motivation is characterized as the disposition to attend and learn the material provided in a university course (Nguyen et al., 2012). Self-Determination Theory has implications for the educational context, given that it is a framework that helps to understand factors that facilitate or hinder intrinsic motivation, autonomous extrinsic motivation, and students' well-being (Ryan & Deci, 2020). This theory denotes that individuals are prone to psychological growth and integration and, thus, to learning, mastery, and connection with other individuals (Ryan & Deci, 2020). The literature indicates that motivation is an antecedent of university students' engagement (Singh et al., 2022).

The concept of study engagement originates from work engagement (Schaufeli et al., 2002; Siu et al., 2014). It refers to the student's positive and rewarding mental state, consisting of vigor, dedication, and absorption in learning (Siu et al., 2014; Siu et al., 2023). Students engaged with their studies are less likely to drop out of the course and have greater chances of succeeding in academic life (Singh et al., 2022). Personal resources such as self-efficacy and psychological flexibility increa-

se study engagement (Martinie & Shankland, 2024). The literature highlights that a challenging learning environment with clear goals and standards can elicit students' engagement in academic tasks (Liu, 2023). On the other hand, factors such as academic exhaustion and burnout can negatively affect students' engagement (Cho et al., 2022). In this sense, fostering study engagement through personal resources is significant for academic success (Martinie & Shankland, 2024).

Higher education represents a distinct and critical phase in individuals' academic and professional development (Zhang et al., 2024). For the most part, university students are susceptible to different challenges, such as uncertain economy, globalization, technological changes (Siu et al., 2014), weaknesses in basic education, demand for soft skills in the labor market, lack of support, economic challenges (Samkin & Stainbank, 2016), high academic and professional demands (Martinie & Shankland, 2024), factors that put their success and permanence in the course at risk. Therefore, motivating university students to strive to achieve good academic results through positive capabilities is a factor that can lead to competitive advantage (Siu et al., 2014) and the achievement of desirable objectives (Singh et al., 2022). It is understood that positive factors can help in the student's progression in the undergraduate course, avoiding problems of academic procrastination and course dropout (Reilly et al., 2024).

Society emphasizes the importance of academic achievement as a means of obtaining personal and professional success (Liran & Miller, 2019). According to Singh et al. (2022), higher education is the opportunity for a successful career, therefore, aspects related to the motivation and engagement of university students must be analyzed. This leads to the understanding that higher education institutions assume a part in the role of obtaining this achievement. Motivation and engagement can be enhanced through institutional-level interventions, such as highlighting learning objectives, course structure, seminars, and workshops for students addressing academic planning, guidance, and methods that can build a positive academic culture oriented toward students' academic success, thus leading to motivation and engagement (Slåtten et al., 2023; Singh et al., 2022).

However, students come from different realities (Reilly et al., 2024). This can generate factors that influence undergraduate students' performance. Therefore, psychological capital can act by mitigating certain challenges encountered and fostering study engagement through the motivation to learn. Evidence indicates that

psychological capital is reported as a buffer, similar to a state, for elements that affect individuals' health (Belle et al., 2022).

Despite this, studies that have analyzed such relationships in the Brazilian reality, in the context of higher education, with a focus on students in the process of professional training in the business area, are scarce. Research focused on the academic context in the area of management and business has been receiving attention in the literature (Reilly et al., 2024; Tho, 2023; Zhou et al., 2024). In this sense, considering the evidence identified in previous studies, it is relevant to identify such characteristics in Brazilian higher education, a theoretical gap that stimulates the conduct of this research.

Given this scenario, the following research question was formulated: What are the effects of psychological capital on learning motivation and study engagement? Regarding the objective, this research seeks to analyze the evidence of the effects of psychological capital of Accounting Sciences students on learning motivation and study engagement.

This research is justified by addressing a topic little explored in the Brazilian literature applied to the educational context, with emphasis on undergraduate Accounting Sciences students. It is notable that psychological capital generates positive effects on the career management of undergraduate students (Zhou et al., 2024). Engaged students obtain better academic results (Slåtten et al., 2023). Furthermore, motivated students employ greater effort in learning activities (Cole et al., 2004; Nguyen et al., 2012). However, the teaching and learning environment can be challenging, demanding more resilience from the student (Samkin & Stainbank, 2016). Therefore, the promotion of these resources can provide benefits for undergraduate students. Thus, the analysis of factors that benefit the learning process becomes relevant in the academic context.

Theoretical Background and Research Hypotheses

STUDENTS' PSYCHOLOGICAL CAPITAL AND STUDY ENGAGEMENT

The concept of psychological capital derives from positive psychology (Luthans et al., 2007) and can contribute to learning outcomes (Liu et al., 2024). Over the past few

years, this personal resource has been receiving attention in the literature in the context of higher education institutions, as revealed by the literature review of Zhang et al. (2024). It was from the studies of Luthans et al. (2012) and Luthans et al. (2014) that the possibility of investigating psychological capital in the context of students arose.

Students' psychological capital refers to confidence in employing the necessary effort to succeed in academic activities (self-efficacy), positive attributions about current and future academic outcomes (optimism), persistence in achieving academic objectives and organizing pathways to achieve them (hope), and perseverance when confronted with difficulties (resilience) to achieve academic success (Martínez et al., 2019; Siu et al., 2014; Siu et al., 2023; Zonatto et al., 2020).

University students reap the psychological benefits of psychological capital in relevant academic outcomes, given that such state increases the ability to obtain positive reactions, presents reduced stress, and improves learning activities (Vîrgă et al., 2022). Psychological capital plays an elementary role in study engagement, academic performance, and student well-being (Slåtten et al., 2023). Concomitantly, psychological capital acts as a personal resource that increases engagement and academic performance and decreases students' burnout and boredom (Vîrgă et al., 2022). Siu et al. (2014) suggest that psychological capital can be determinant for students' disposition to face the challenges of academic life.

While psychological capital manifests students' internal states (Martinie & Shankland, 2024), study engagement is a state understood as the involvement and effort employed by students in academic activities (Schaufeli et al., 2002; Singh et al., 2022). In the same manner as in the organizational context (Schaufeli et al., 2002), study engagement has three dimensions. Vigor is the understanding of whether studying is inspiring, provides energy, and is worth the effort. Dedication is the understanding of studying as meaningful and important, and absorption reflects whether students are immersed in their role of being students (Schaufeli et al., 2002; Slåtten et al., 2023).

Recent findings on the topic have revealed implications of study engagement. It was found that a learning process with clear goals and standards fosters students' engagement (Liu, 2023). The study by Saleem et al. (2022) indicates that positive emotions tend to have positive effects both on students' psychological capital and on academic engagement.

Thus, it is believed that students' psychological capital is positively associated with study engagement, which allows formulating the first research hypothesis:

H1: *Students' psychological capital exerts positive effects on study engagement.*

PSYCHOLOGICAL CAPITAL AND LEARNING MOTIVATION

The development of psychological capital helps students to overcome obstacles that lead them to academic performance, providing reduction of stress, exhaustion, resistance to change, and also serving as a competitive advantage for business students (Luthans et al., 2012). The psychological capital of business academics can be positively affected by short-term training (Luthans et al., 2014). This denotes that this capability is malleable and possible to be developed. Strategies to develop students' psychological capital also encompass additional strategies, such as placing oneself in positive situations, identifying pathways to achieve objectives, and physical exercises (Luthans et al., 2014).

This personal resource does not only act by promoting the quality of university life. It also exerts influence on students' satisfaction with the experiences and opportunities that the higher education institution provides (Tho, 2023). It may be capable of creating an environment conducive to learning. Thus, psychological capital can drive learning motivation. Self-efficacy is the belief and confidence of students in their ability to understand and/or succeed in course activities (Singh et al., 2022). For example, Tang and He (2023) identified that self-efficacy is positively associated with the motivation to learn. In this sense, knowing the relationship between psychological capital and learning motivation can help to understand how these factors interact and cooperate toward desirable academic outcomes.

Intrinsic motivation refers to the natural human propensity to learn and assimilate (Ryan & Deci, 2000), what is known is that intrinsic motivation leads to significant benefits in formal education (Ryan & Deci, 2020). In turn, extrinsic motivation refers to the degree to which a person completes an activity or goes to the institution for external reasons (Kriegbaum et al., 2018). Both are relevant to the academic context (Ryan & Deci, 2020). The findings of Liu et al. (2024) denote that intrinsic motiva-

tion, extrinsic motivation, emotional engagement, and psychological capital impact academic performance. Similar findings to Kriegbaum et al. (2018), who show that motivational constructs, such as expectations, are considerable predictors of school achievement.

Regarding learning motivation, such state guides the student's decision-making process, generating focus on learning and increasing students' level of effort in academic tasks (Cole et al., 2004; Nguyen et al., 2012; Zonatto et al., 2020). The literature shows that the motivation to learn is preceded by factors such as psychological resilience (Nguyen et al., 2012), emotional intelligence, and social support (Tang & He, 2023). Attitudes such as creating strategies to maintain focus on tasks and studying with adequate materials provide the construction of student confidence, leading to motivation (Reilly et al., 2024). The study by Lin and Tsai (2021) demonstrated that the implementation of a pedagogical model increased students' learning motivation.

In this way, it can be admitted that, in a supportive educational environment in which individuals develop their psychological capital, these students tend to present greater motivation to learn, which allows formulating the second research hypothesis:

H2: *Students' psychological capital exerts positive effects on learning motivation.*

LEARNING MOTIVATION AND STUDY ENGAGEMENT

Student motivation is a factor that influences the learning process, academic outcomes, and effort to learn (Feraco et al., 2023; Marques et al., 2024; Nguyen et al., 2012; Singh et al., 2022; Zonatto et al., 2020). Although the evidence highlights its importance, university students are subject to social, cultural, and economic challenges that can affect their motivation with their studies, generating low motivation and difficulties in obtaining good academic performance (Siu et al., 2014; Szegedi et al., 2024). In a longitudinal study with undergraduate Accounting Sciences students, it was found that students' motivation changed throughout the course, showing a reduction in internal motivation to know and to achieve, and in external motivation of identification (Marques et al., 2024).

Study engagement is associated with the psychological flexibility of undergraduate students. This suggests that students need to deal with their internal states constructively in order to remain engaged in their studies (Martinie & Shankland, 2024). Singh et al. (2022) analyzed the relationship between motivation and student engagement in the context of higher education, involving different areas of training. The results suggest that motivation factors increase student engagement. However, factors that result in students' demotivation make them disengaged from learning. In a quasi-experiment with postgraduate students, Chukwuedo et al. (2021) found that a self-directed learning intervention increased students' motivation, which, in turn, generated positive effects on study engagement.

Learning motivation and study engagement are interconnected. Motivation acts as an incentive to engagement. The latter, in turn, generates more satisfactory learning outcomes (Siu et al., 2014). Aspects associated with the student's experiences, self-perception, and support from teachers and peers influence students' motivation and engagement (Singh et al., 2022).

Ali et al. (2022) conducted a survey with students to analyze the relationship between mindfulness and study engagement, with psychological capital and intrinsic motivation as mediators. The results showed mindfulness as essential to study engagement. Thus, more attentive students are more engaged in their studies. The authors also confirmed the mediation analysis, demonstrating that, in addition to mindfulness, psychological capital and intrinsic motivation influence study engagement.

In this sense, considering that motivation is an antecedent of engagement (Singh et al., 2022), the third hypothesis is proposed, establishing a positive relationship between learning motivation and study engagement of undergraduate Accounting Sciences students:

H3: *Learning motivation exerts positive effects on study engagement.*

MEDIATING EFFECT OF LEARNING MOTIVATION

Studies on the influence of academics' psychological capital on study engagement should not be limited to analyzing direct relationships, as this relationship may be influenced by mediating factors, such as learning motivation. Learning mo-

tivation plays a role in predicting the quality of life of university students (Nguyen et al., 2012) and in their propensity to act to learn (Pletsch & Zonatto, 2018).

According to the Self-Determination Theory of Ryan and Deci (2000; 2020), intrinsic motivation and extrinsic motivation predict positive outcomes at various educational levels and cultural contexts. Furthermore, they provide support for students' basic needs through autonomy, competence, and relatedness (Ryan & Deci, 2020).

Motivation is a factor that indicates an individual's internal drive to achieve a certain objective (Feraco et al., 2023; Kriegbaum et al., 2018). For example, the findings of Reilly et al. (2024) suggest that studying in groups motivates students and creates the potential to minimize academic procrastination. Tang and He (2023) suggest that students' emotional intelligence is associated with greater motivation to learn. This suggests the relevance of motivating academics to elicit desirable academic outcomes.

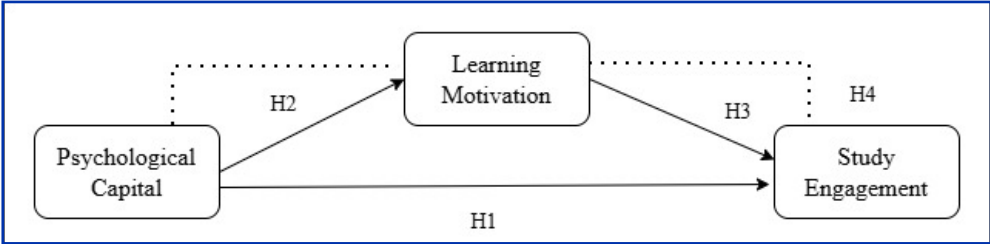
Entering a higher education institution can be considered a challenging and demanding endeavor. The student may need to face problems and obstacles to a greater or lesser degree (Slåtten et al., 2023). In turn, psychological capital, as a personal resource that can be managed, can be stimulated so that the student can overcome the adversities of academic life (Vîrgă et al., 2022), in a way that it can favor the student in remaining engaged with the academic demands.

Added to this, the motivation to learn, defined as the disposition to learn the material provided in a university course (Nguyen et al., 2012), may come to potentiate this condition. This is because psychological capital increases the motivation to learn (Pletsch & Zonatto, 2018), which tends to positively influence their engagement in studies. In this sense, it is proposed that learning motivation may be established as an intervening variable between psychological capital and study engagement, which allows formulating the fourth research hypothesis:

H4: *Learning motivation exerts a mediating effect on the relationship between students' psychological capital and study engagement.*

Figure 1 illustrates the theoretical analysis model with the hypotheses established for the research.

Figure 1. Theoretical Analysis Model.



Note: The dashed line indicates the mediating effect of learning motivation on the relationship between psychological capital and study engagement (H4).

Source: Prepared by the authors.

In this manner, the theoretical model is structured to test the influence of psychological capital on study engagement (H1), the influence of psychological capital on learning motivation (H2), and the direct effect of learning motivation on study engagement (H3). Finally, H4 to investigate the mediating effects of learning motivation on this relationship, as a promoting mechanism of the indirect effects of students' psychological capital on their study engagement.

Methodological Procedures

RESEARCH DESIGN, POPULATION, AND SAMPLE

A survey was conducted with undergraduate Accounting Sciences students from a public, in-person higher education institution. The choice of institution is attributed to its importance in the national scenario and for constituting a reference institution in higher education, being listed in several rankings of the best public institutions in the country. The analyzed sample is non-probabilistic, reached by accessibility.

Studies with students in the area of management, including Accounting Sciences, are usually conducted (Marques et al., 2024; Luthans et al., 2014; Nguyen et al., 2012; Pereira & Beuren, 2023; Reilly et al., 2024; Tho, 2023; Zhou et al., 2024). Thus, the option to analyze the perception of Accounting Sciences students derives from the fact that these professionals in training are susceptible to different factors that can compromise their training and, consequently, their professional success.

Therefore, analyzing positive factors for the learning process is relevant for the understanding of the predictors of their study engagement.

The study population comprises 386 undergraduate Accounting Sciences students enrolled in the current semester at the studied HEI. For data collection, a questionnaire was applied in the classroom during the month of November 2024. Subsequently, the questionnaires were organized, with 195 responses counted. Of these, five questionnaires were incompletely answered and were therefore excluded from the study. Therefore, the research sample consists of 190 students who effectively answered the data collection instrument.

Regarding methodological limitations, the use of an accessibility sample, composed of students from a single public HEI, is highlighted, which implies risks of selection bias. The socioeconomic and academic profile of these undergraduates may differ from the profile observed in private institutions or HEIs located in other regions of the country, which may influence levels of psychological capital, learning motivation, and engagement. From an analytical standpoint, the sample specificity suggests caution in generalizing the research findings, since the identified relationships may reflect contextual characteristics specific to the analyzed educational environment. Thus, although the findings contribute to the understanding of the effects of psychological capital on academics' engagement, their extrapolation to other educational contexts should be carried out with parsimony.

To verify the adequacy of the sample size, the parameters of Faul et al. (2009) were taken into account. The G*Power software was used to perform the calculation. The parameters considered were: effect size (0.15), type error probability (0.05), minimum power (0.80), and maximum number of predictors in the dependent variable (2.00). This scope requires a minimum sample of 68 responses. Thus, based on these parameters, the 190 responses are sufficient to test the structural equation modeling.

In summary, in the analyzed sample, the data indicate the predominance of female students (56.84%). The predominant age range is 19 to 25 years (126 responses). Regarding the stage of the course, 27% are in the fourth year of undergraduate studies and 9% are in the conclusion stage. Furthermore, 28% of students work in accounting firms and 30% of respondents were not working at the time data collection was conducted.

Table 1 shows the profile of the research participants.

Table 1. Sample Composition (n=190).

Category	Percentage (%)	Frequency
Gender		
Female	56,84 %	108
Male	43,16 %	82
Age Range		
Up to 18 years	6,00 %	11
19 to 25 years	66,00 %	126
25 to 30 years	17,00 %	32
31 to 35 years	6,00 %	9
Over 35 years	6,00 %	12
Year of Study		
1st year (1st and 2nd semester)	25,00 %	47
2nd year (3rd and 4th semester)	22,00 %	41
3rd year (5th and 6th semester)	18,00 %	34
4th year (7th and 8th semester)	27,00 %	51
5th year (9th and 10th semester)	9,00 %	17
Professional Activity		
Accounting Firm	28,00 %	54
Private Company	26,00 %	49
Public Sector	14,00 %	26
Third Sector	2,00 %	4
Not currently employed	30,00 %	57

Source: Research data.

RESEARCH CONSTRUCT AND INSTRUMENT

The theoretical analysis model consists of three variables: students’ psychological capital, learning motivation, and study engagement. The statements were translated and adapted from previous studies developed on the topic. Regarding the scales used, the process involved backtranslation, seeking to ensure the conceptual equivalence of the instruments used. For its application, a seven-point Likert scale was used, ranging from one, indicating low disagreement, to seven, indicating high agreement with the presented statements.

To ensure students' understanding of the questions, a pre-test procedure was initially carried out, in which a PhD professor in Accounting Sciences and two *stricto sensu* postgraduate students from the institution participated, in which specific modifications in the description of the questionnaire statements were suggested. It is noteworthy that such changes were necessary for better understanding of the statements. The pre-test is a procedure used in other studies in the academic context (Saleem et al., 2022; Slåtten et al., 2023), constituting an appropriate technique for aligning the data collection instrument with the purposes of the work performed. In addition to this action, the data collection instrument was registered with the Research Ethics Committee of the institution where the authors work.

Students' psychological capital was measured using the research instrument of Slåtten et al. (2021). The scale consists of ten statements. Students were asked to answer questions involving self-efficacy, hope, optimism, and resilience in relation to their studies in the undergraduate Accounting Sciences course. Learning motivation was analyzed through five statements from the study by Nguyen et al. (2012). Students indicated the degree of motivation to learn the contents of the undergraduate course. To measure study engagement, the scale of Slåtten et al. (2023) was used. These authors carried out an adaptation of the scale of Schaufeli et al. (2002) for the academic context. Students should indicate their degree of disagreement or agreement regarding their engagement in the disciplines of the current semester of their undergraduate studies.

DATA ANALYSIS PROCEDURES

After collecting data in the classroom, data treatment was carried out. Because the data were collected from a single source, at a single point in time, and using self-reported questionnaires, this information may be exposed to common method biases (Bido et al., 2018). However, the recommendations of Podsakoff et al. (2024) were used to control for possible common method bias arising from data collection. To this end, Harman's single factor test was performed, which revealed that the set of indicators analyzed in the research explains, in its first factor, only 39.48% of the variation in the variables (total explained variation). This value is adequate, considering that the common limit is 50% (Podsakoff et al., 2024). Therefore, these evidences suggest the non-existence of common method bias problems.

Regarding the validation and analysis procedures of the results, these were performed through Structural Equation Modeling (SEM), using the Partial Least Squares (PLS) technique, carried out using the SmartPLS 3 software. The PL-S-SEM method is adequate for the research approach, as it allows testing the relationships without imposing distributional assumptions on the data (Hair et al., 2019). The model analysis was performed in two stages: validation of the measurement model and analysis of the structural model. The parameters used are in accordance with those recommended by Hair Jr. et al. (2022). The research results are presented below.

Research Results

MEASUREMENT MODEL

The first stage of data analysis consists of the validation of the measurement model (Hair et al., 2019). To this end, tests of internal consistency (Cronbach's Alpha and composite reliability), convergent validity (AVE), and discriminant validity by the criterion of Fornell and Larcker (1981) were initially performed, as well as descriptive analysis of the data. Table 2 presents the synthesis of these results.

Table 2. Descriptive statistics, reliability and discriminant validity.

Variables	Min.	Max.	Mean	Std. Dev.	Factor Loadings	Cronbach's α	rho_A	Comp. Reliability	AVE
Psychological Capital	1.00	7.00	5.21	1.44	[0.561; 0.847]	0.861	0.871	0.895	0.554
Learning Motivation	1.00	7.00	4.08	1.78	[0.742; 0.855]	0.863	0.866	0.902	0.648
Study Engagement	1.00	7.00	4.25	1.86	[0.701; 0.856]	0.882	0.897	0.914	0.679

Discriminant Validity (Fornell and Larcker, 1981)			
Variables	PC	SE	LM
PC	0.744		
SE	0.560	0.805	
LM	0.478	0.779	0.824

Note: PC = Psychological Capital; LM = Learning Motivation; SE = Study Engagement.

Source: Prepared by the authors.

Regarding the descriptive statistics, the results found revealed minimum and maximum responses on the scale used. These findings reveal that not all students participating in the research present high psychological capital. Likewise, they indicate that some students have difficulties presenting motivating behavior to learn, as well as engagement in their studies.

According to Belle et al. (2022), psychological capital, when developed, promotes students’ self-regulation (coping styles), which, to a certain extent, determines their well-being. Students with high levels of psychological capital are susceptible to enjoying greater quality of university life (Tho, 2023). Furthermore, the development of interventions that reinforce the characteristics of psychological capital (self-efficacy, hope, optimism, and resilience) promotes study engagement and academic performance of university students (Vîrgă et al., 2022).

On the other hand, students who do not develop their psychological capital may experience negative experiences in the academic environment, resulting in demotivation, stress, anxiety, and low performance (Cho et al., 2022; Szegedi et al., 2024; Zhang et al., 2024). Under these conditions, they become more prone to dropping out of the course (Reilly et al., 2024). These findings are also concerning in the professional context, since more demotivated professionals may present greater difficulty in learning (Lei et al., 2024) and transferring their knowledge to the labor market (Pletsch & Zonatto, 2018).

Such evidence reinforces the importance of the analysis proposed in this research, so that the predictive roles of psychological capital in promoting learning motivation and study engagement can be better understood. Psychological capital

is a determining element for achieving satisfactory results in the academic context (Siu et al., 2023; Wang et al., 2023). Furthermore, learning motivation impacts academic performance (Liu et al., 2023), as well as positive factors that influence study engagement (Siu et al., 2023; Slåtten et al., 2021).

Regarding the tested structural model, the results found indicate the internal consistency of the model. The values of Cronbach’s Alpha and composite reliability were above the minimum indicated (>0.70) by the literature (Hair Jr. et al., 2022). Convergent validity (AVE), which denotes that the construct explains at least 50% of the variance of its items, also presents values above the minimum expected (>0.50), as recommended by Hair et al. (2019). Thus, they indicate high predictive quality of the model.

Regarding the discriminant validity test, the results presented in Table 2 also confirm this validation. It was verified that the values of the square roots of the AVE are greater than the existing correlations between the analyzed variables, as required by Fornell and Larcker (1981). Thus, hypothesis testing and the analysis of such relationships through structural equation modeling become possible. The results are presented below.

STRUCTURAL MODEL

The structural model analysis comprises the beta coefficients (β), the t-statistic, and the p-value of the relationships proposed for the study. Also the Pearson determination coefficient (R^2), the variance inflation factor (VIF), the predictive relevance (Q^2), and the effect size (f^2) (Hair et al., 2019). These results are presented in Table 3.

Table 3. Structural Model Results and Hypothesis Testing.

Rela- tionships	Std. Coef.	Stan- dard Error	Efeitos Diretos						
			t-value	p-value	Result	R ²	VIF	Q ²	f ²
PC → SE	0.244	0.048	5.107	0.000	Supported	0.648	1.296	-	0.404
PC → LM	0.478	0.063	7.586	0.000	Supported	0.224	1.000	0.410	0.469
LM → SE	0.662	0.042	15.697	0.000	Supported	0.648	1.296	0.148	0.516

Indirect Effects					
PC → LM → SE	0.317	0.046	6.891	0.000	Supported

Nota: PC = Psychological Capital; LM = Learning Motivation; SE = Study Engagement; n=190; Significant at the ***0.01 level.

Source: Research data.

The first hypothesis of the study (H1), which establishes the positive effects of students’ psychological capital on study engagement, was supported ($p=0.000$), with a structural coefficient of 0.244 and large effect size. H2, which establishes that students’ psychological capital exerts positive effects on learning motivation, was also supported, revealing a positive and statistically significant relationship ($p=0.000$), with a structural coefficient of 0.478 and large effect size (>0.35). The same is observed with the third research hypothesis (H3), which addresses the effects of learning motivation on study engagement. This hypothesis, also accepted with a p-value of 0.000, presented a structural coefficient of 0.662 and an effect size greater than 0.35, revealing the greatest strength of the analyzed relationships (Hair et al., 2019).

The high coefficient associated with learning motivation indicates that this variable plays a central role in explaining study engagement, acting as a mechanism that brings students’ personal resources and their behavior with their studies closer together (Singh et al., 2022). This result suggests that, in the analyzed sample, although psychological capital represents a relevant structure of positive resources, composed of self-efficacy, hope, optimism, and resilience (Slåtten et al., 2023), it is learning motivation that effectively mobilizes vigor, dedication, and absorption in studies (Singh et al., 2022). Motivation directs effort and sustains continuous involvement with academic activities (Singh et al., 2022). Considering Self-Determination Theory, this finding contributes to the refinement of the literature by evidencing that more self-determined motivational states function as an explanatory link between personal resources and study engagement. In this sense, psychological capital can create favorable conditions for undergraduates’ studies, but they are not sufficient, with motivation being the factor that potentiates a condition of greater engagement with studies.

Regarding the last hypothesis tested in the research (H4), which investigates the mediating effects of learning motivation on the relationship between psychological capital and study engagement, it also presented statistical significance ($p=0.000$), indicating that learning motivation potentiates the relationship between students' psychological capital and study engagement. According to the literature, when all direct relationships between the variables present statistical significance, this implies a complementary partial mediation (Hair Jr. et al., 2022). Therefore, it can be inferred that learning motivation partially mediates the relationship between psychological capital and study engagement. Regarding the quality of the model, the results show that the determination coefficient (R^2) for the relationship between psychological capital and study engagement, and between learning motivation and study engagement, was 64.48%. This indicates the high explanatory power of the model. The R^2 of the relationship between psychological capital and learning motivation was 22.4%. The variance inflation factor (VIF) is used to assess the multicollinearity of formative indicators. Values below 3 are acceptable, according to the literature (Hair et al., 2019). Thus, the research data did not present multicollinearity.

The predictive relevance (Q^2), which shows the accuracy of the model, should present values greater than zero (Hair Jr. et al., 2022). Considering this criterion, it is concluded that the model exhibits predictive accuracy. Regarding the effect size (f^2), as a general rule, values greater than 0.02, 0.15, and 0.35 represent, respectively, small, medium, and large effect sizes (Cohen, 1988). Therefore, in the analyzed sample, it can be inferred that all direct relationships presented large effect sizes, which is why it can be stated that study engagement is explained by the psychological capital and learning motivation of the students who participated in the research (Hair et al., 2019).

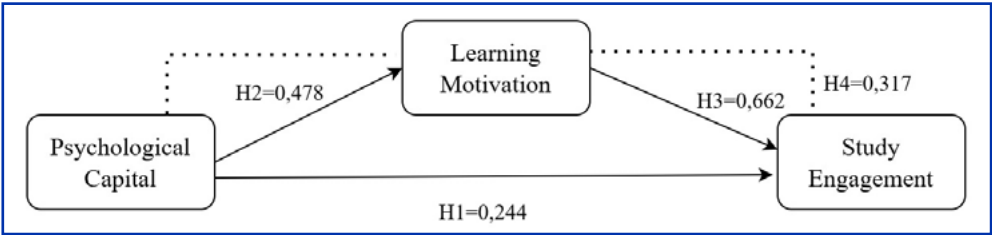
DISCUSSION OF RESULTS

The research results indicate that statistically all proposed theoretical relationships are supported (H1, H2, H3, H4). Figure 2 presents the synthesis of the results found through the path coefficients (β).

Based on the results found in this research, it was confirmed that students' psychological capital, through the dimensions of self-efficacy, hope, optimism, and resilience, potentiates study engagement (H1) of Accounting Sciences academics.

This result reinforces findings identified in the literature (Ali et al., 2022; Sallem et al., 2022; Slåtten et al., 2023; Siu et al., 2014; Siu et al., 2023; Virgă et al., 2022). Psychological capital, as a personal resource, is considered essential and a promoter of relevant results related to studying (Martinie & Shankland, 2024; Slåtten et al., 2023).

Figura 2. Modelo teórico com coeficientes de caminhos.



Source: Prepared by the authors.

Students with positive psychological capital resources tend to mobilize more energy with the purpose of organizing learning strategies and directing attention in managing their academic tasks, which enables a greater degree of study engagement (Slåtten et al., 2023). Furthermore, study engagement is a factor that needs to be encouraged, given that it improves learning outcomes, academic performance, and the reputation of undergraduate students (Singh et al., 2022).

This denotes the importance of promoting psychological capital as an important antecedent of learning. Through it, students tend to have more confidence to succeed in academic activities, will be susceptible to having a positive mindset about their studies, will maintain persistence in achieving academic objectives, and will have resilience in academic life, leading them to remain engaged in their studies.

H2, which assumes positive and significant effects of psychological capital on learning motivation (PC → LM), was also supported, corroborating results identified in the revisited literature on the topic (Datu et al., 2018; Pletsch & Zonatto, 2018; Tang & He, 2023). This finding is consistent with the assumption that psychological capital positively influences individuals' attitudes (Belle et al., 2022; Slåtten et al., 2023). Psychological capital is a determining factor for students' well-being (Belle et al., 2022). Learning motivation has positive impacts on the quality of life of university students (Nguyen et al., 2012; Siu et al., 2014). Therefore, it was concluded that characteristics

such as confidence, hope, optimism, and resilience are antecedents for the student to remain motivated to learn the contents of the chosen undergraduate course.

The third hypothesis of the study (H3) suggests that higher levels of learning motivation have positive effects on study engagement (LM → SE) of undergraduate Accounting Sciences students, a hypothesis also supported. This finding is consistent with the prior literature that students' motivation increases study engagement (Ali et al., 2022; Cho et al., 2022; Lei et al., 2024; Singh et al., 2022; Siu et al., 2014).

Students demand a certain level of expectation of success in order to commit more to their academic duties (Martinie & Shankland, 2024). Thus, educators can make use of motivation as an instrument to generate student engagement, through personalized interventions (Singh et al., 2022). This result can be supported by Self-Determination Theory (2000; 2020), which denotes that both intrinsic and extrinsic motivation positively influence educational experiences. In view of this, it becomes possible to conclude that more motivated university students tend to present greater engagement in their studies and the contents addressed in undergraduate courses.

It was proposed in this research that learning motivation acts as a mediating variable in the relationship between students' psychological capital and study engagement (PC → LM → SE). The findings allow supporting this hypothesis (H4). Siu et al. (2014) analyzed intrinsic motivation in this relationship, obtaining confirmation that motivation is an intervening factor between psychological capital and students' engagement. They concluded that the motivation to learn can potentiate personal factors (such as psychological capital and study engagement), which lead to satisfactory results in students' learning process.

This result confirms the mediating role of learning motivation in explaining the mechanisms through which psychological capital potentiates study engagement. This suggests that psychological resources do not act directly on engagement, but through motivational states oriented towards learning. In this sense, this finding dialogues with the literature by reinforcing that motivation constitutes a link between each student's characteristics and their academic outcomes, corroborating evidence that stronger students tend to present greater willingness to invest effort, persistence, and interest in academic activities (Ali et al., 2022; Cho et al., 2022; Nguyen et al., 2012; Siu et al., 2014).

The results of this research denote that positive psychological factors are important for the learning process of undergraduate business students. The findings show that psychological capital is relevant to the academic context. These results are consistent with the evidence in the literature (Pletsch & Zonatto, 2018; Slåtten et al., 2023; Zhang et al., 2024), demonstrating that, beyond the organizational context (Karatepe et al., 2024; Kidron & Vinarski-Peretz, 2024), psychological capital is a factor that needs to be observed in individuals in the process of professional training.

These findings provide an important explanation for academic learning. In particular, they reveal the roles of cognitive and personal factors as predictors of students' intention to behave proactively engaged in their studies. Undergraduate education involves a broader dynamic of challenges, academic pressures, exhaustion, and stress. For this reason, it becomes important to understand the factors that precede learning motivation and study engagement.

By understanding how psychological capital reflects in this context, new evidence of its enabling effects on academic learning is provided. These findings allow academic managers, course coordinators, and undergraduate students to adequately understand the effects of psychological capital in the teaching environment (Zonatto et al., 2020). Likewise, it offers information that can contribute to enabling these actors to carry out actions aimed at minimizing stressors and improving learning, generating positive results for educators, educational managers, and academics (Zhang et al., 2024).

The research reinforces the need to understand academic engagement as a processual phenomenon, in which positive psychological resources influence students' behavior through motivational states, broadening the dialogue between the literature on psychological capital, motivation, and study engagement in the field of Management and Accounting.

Conclusion

This study analyzed the evidence of the effects of students' psychological capital on learning motivation and study engagement. To this end, data from 190 undergraduate Accounting Sciences students from a single public, in-person HEI were

analyzed through the structural equation modeling technique. The results showed that psychological capital has positive effects on the motivation to learn and on the study engagement of academics. The evidence demonstrated that learning motivation exerts a partial mediating effect on this relationship.

It was concluded that higher levels of psychological capital can increase the student's ability to remain engaged with the course's tasks. This finding can bring relevant implications for the academic environment, aimed at the promotion of teaching and learning in higher education institutions, by providing greater understanding of the role of psychological capital in students' learning process. Psychological capital is a malleable personal resource (Luthans et al., 2014); therefore, possible to be encouraged.

This research presents implications for the literature. It generates evidence of the importance of psychological capital in the academic context, a growing area of research in higher education (Slåtten et al., 2023; Tho, 2023; Zhou et al., 2024; Zonatto et al., 2020), of study engagement (Martinie & Shankland, 2024; Slåtten et al., 2023), and of learning motivation. It responds to the literature's calls for research that advances on the topic of factors that influence the learning of students in professional training (Martinie & Shankland, 2024). It also advances the literature in Management and Accounting education in Brazil (Brognoli et al., 2024; Marques et al., 2024; Pereira & Beuren, 2023), providing new knowledge on the topic.

These results also serve practical purposes. Teachers, course coordinators, educational managers, and students can use such findings to improve teaching and learning planning. For example, dropout is a recurring problem in higher education, derived from different factors, among them, students' learning difficulties. In view of this, the adoption of better educational practices, student support, and the promotion of positive psychological factors can contribute to elevating students' psychological capital, generating study engagement and making them more motivated to employ additional efforts to obtain personal and academic success, reducing dropout intention.

The literature on the topic emphasizes that teachers can influence the development of personal resources, such as students' self-efficacy and their psychological capital (Zonatto et al., 2020), in addition to providing guidance toward achieving better student performance (Martinie & Shankland, 2024). Therefore, it can contribute

to identifying how the promotion of individual cognitive and motivational resources can influence students' predisposition to learning.

Considering the framework proposed by Whetten (2003), this research offers relevant theoretical and empirical contributions to the field of Management by investigating, in an integrated manner, the effects of psychological capital on learning motivation and study engagement in the context of Brazilian higher education. In theoretical terms, the research contributes by demonstrating that learning motivation is the central theoretical mechanism that connects positive psychological resources to study engagement. The results indicate that the motivation to learn presents greater explanatory power over engagement, which reinforces the importance of self-determined motivational processes in the activation of psychological capital. This result contributes to the literature by suggesting that Self-Determination Theory is relevant for understanding students' engagement, especially by highlighting that psychological capital, by itself, is not sufficient to explain engagement without considering the motivational states that guide the student's action. From an empirical standpoint, the study advances by testing a model in a context little explored in the national literature, contributing to reducing gaps related to the integration between Management and Accounting.

Although the research suggests new evidence, it is also subject to limitations. First, data collection was conducted in a single HEI, public and in-person modality. Conducting the study with other student realities may generate different results, due to the particularities of each type and modality of teaching. Second, the sample of only undergraduate students and from a specific area (Accounting Sciences) restricts the generalization of findings to other scenarios, such as, for example, level of education (primary, secondary, and vocational education), teachers (basic, higher, and postgraduate education), and even organizations.

Future studies can delve deeper into other variables seeking to elucidate the impact of psychological capital in the academic context, such as social capital (Hidayat et al., 2024) and well-being (Slåtten et al., 2023) of students. Furthermore, the use of antecedent factors can help to identify and generate a broader scenario of psychological capital and other positive and negative factors in the Brazilian higher education environment, capable of influencing learning motivation and study engagement. Additionally, future studies may adopt multi-institutional designs, including

public and private HEIs from different regions, as well as longitudinal approaches, in order to test the robustness and stability of the relationships over time. Such aspects constitute important research opportunities on the topic.

Based on the findings, a research agenda is outlined aimed at deepening the psychological mechanisms that sustain students' motivation and engagement in the fields of Management and Accounting. The research results also raise theoretical questions that deserve further investigation in future research. Specifically, the central role of motivation as a mediating mechanism suggests the need for investigations that explore different types of motivation and their interactions with the components of psychological capital, contributing to the refinement of new explanatory models of study engagement. Furthermore, questions that articulate the development of these psychological resources in the educational context and their manifestation in organizational environments can advance the understanding of continuity between academic training and professional behavior in the fields of Management and Accounting.

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