

PSICOLOGIA ARGUMENTO

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Social support perceived as a predictor of academic engagement among adolescents

*Suporte social percebido como preditor de engajamento
acadêmico na adolescência*

*Apoyo social percibido como predictor de compromiso
académico en la adolescencia*

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Como citar: VIEIRA, M. C.; TROMBINI, L.; KRUSZIELSKI, L.; CORTEZ, P. A. Social support perceived as a predictor of academic engagement among adolescents. *Psicologia Argumento*, 43(123). 1167-1179, 2025. <https://dx.doi.org/10.7213/psico-largum.43.123.AO05>.

Abstract

Studies have shown that social support from teachers, family, and friends positively impacts adolescent academic engagement. This study presents an explanatory model of the relationship between academic engagement and social support from the adolescents' perspective. The sample consisted of 1,904 high school students from 25 different campuses across Brazil, with an average age of 15.9 (SD = .93). Most students attended morning classes (56.1%) and identified as female (63.2%), white (65.1%), and heterosexual (74.8%). The Multidimensional Scale of Perceived Social Support (MSPSS) and the Academic Engagement Scale were employed in this study. Based on multiple regression analysis, we found that teacher support is the variable that best explains overall academic engagement; it also represents the most relevant aspect of emotional and institutional engagement. As for cognitive/behavioral engagement, family support is the most relevant factor, followed by teacher support. Friend support showed a significant negative association with cognitive/behavioral engagement. The findings may not be generalizable to other educational contexts due to the convenience sampling method used in this study. However, they could contribute to informing educational practices that emphasize school and family support in the context of academic engagement.

Keywords: Student engagement; Teachers; Adolescents; Education.

Resumo

Estudos têm evidenciado que o suporte social advindo de professores, familiares e amigos tem impacto significativo no engajamento acadêmico de adolescentes. O objetivo deste trabalho foi apresentar um modelo explicativo das relações entre engajamento e suporte social percebido por estudantes adolescentes. Participaram da amostra 1904 estudantes de ensino médio de 25 campi de uma instituição brasileira de ensino, com idade média de 15,9 anos (DP = 0.93). Estes, em sua maioria, estudavam em turno matutino (56,1%), se autodeclararam do gênero feminino (63,2%), brancos (65,1%) e heterossexuais (74,8%). Utilizou-se a Escala Multidimensional de Suporte Social Percebido e a Escala de Engajamento Acadêmico. Realizou-se análise de regressão múltipla, verificando-se que o suporte docente é a variável que melhor explica o engajamento acadêmico geral. O suporte docente também é o mais relevante para explicar o engajamento emocional e o institucional. O suporte familiar foi o mais significativo para explicar o engajamento cognitivo/comportamental, seguido do suporte de docentes. O suporte de amigos explicou significativamente, embora com efeito negativo, o engajamento cognitivo/comportamental. Destaca-se como limite do estudo a amostragem por conveniência que pode dificultar a generalização para outros contextos educacionais. Tais achados podem contribuir para subsidiar práticas educacionais que valorizem o apoio docente e familiar no engajamento acadêmico.

Palavras-chave: Engajamento estudantil; Professores; Adolescentes; Educação.

Resumen

Los estudios han evidenciado que el apoyo social proveniente de profesores, familiares y amigos tiene un impacto significativo en el compromiso académico de los adolescentes. El objetivo de este trabajo fue presentar un modelo explicativo de las relaciones entre el compromiso y el apoyo social percibido por estudiantes adolescentes. Participaron en la muestra 1904 estudiantes de bachillerato de 25 campus de una institución pública federal brasileña, con una edad media de 15,9 años (DE = 0,93). En su mayoría, estudiaban en el turno matutino (56,1%), declararon a sí mismos como del género femenino (63,2%), blancos (65,1%) y heterossexuales (74,8%). Se utilizaron la Escala Multidimensional de Apoyo Social Percibido y la Escala de Compromiso Académico. Se realizó un análisis de regresión múltiple, verificando que el apoyo docente es la variable que mejor explica el compromiso académico general. El apoyo docente también es el más relevante para explicar el compromiso emocional y el institucional. El apoyo familiar fue el más significativo para explicar el compromiso cognitivo/comportamental, seguido del apoyo de docentes. El apoyo de amigos explicó significativamente, aunque con un efecto negativo, el compromiso cognitivo/comportamental. Se destaca como límite del estudio la muestra por conveniencia que puede dificultar la

generalización a otros contextos educativos. Estos hallazgos pueden contribuir a respaldar prácticas educativas que valoren el apoyo docente y familiar en el compromiso académico.

Palabras clave: *Envolvimiento académico; Profesores; Adolescentes; Educación.*

1. Introduction

Academic engagement among adolescents has sparked the interest of many researchers (Maroco, Maroco, Campos, & Fredericks, 2016; Salmela-Aro et al., 2021). Understanding how teenagers interact and engage in school activities may help develop new strategies to improve academic performance (Festas, Prata, Oliveira, & Veita, 2018) and school satisfaction (Bălătescu & Cernea-Radu, 2025), as well as reduce school dropout rates (Gil et al., 2021). The literature has shown that stronger support from teachers, family, and significant others, such as friends or colleagues, has a positive impact on engagement in school activities among adolescents (Carvalho & Veiga, 2023; Chan, Sharkey, Nylund-Gibson, Dowdy, & Furlong, 2022; Clark, Dorio, Eldrige, Malecki, & Demary, 2020; Kilday & Ryan, 2019).

Academic engagement is a multidimensional concept with three interconnected components: behavioral, cognitive, and emotional. This flexible construct is also influenced by how the student interacts with the school, family, and friends (Carvalho & Veiga, 2023; Chan et al., 2022).

Behavioral engagement can be easily observed and consists of displaying positive behaviors, such as paying attention, actively participating in class, or engaging in extracurricular activities (Pestana, 2015). The concept also involves persistent effort, attendance, commitment to academic activities, and other desired behaviors (Coelho & Dell'Aglio, 2018).

Unlike behavioral engagement, the cognitive and emotional domains cannot be observed. Emotional engagement refers to student satisfaction with the school, a sense of belonging to the institution, and relationship quality (Coelho & Dell'Aglio, 2018; Festas et al., 2018). Pestana (2015) explains that social support from parents, friends, and significant others exerts the greatest influence on this domain.

In contrast, cognitive engagement highlights the role of the school, from the student's perspective, in shaping personal and future goals. Furthermore, cognitive engagement includes the effort students invest in learning and using strategic thinking to solve problems (Sharkey, Matthew, & Mayworm, 2014).

Although the academic engagement construct considers behavioral and cognitive engagement as distinct domains, both positively influence academic performance, study completion, and emotional adjustment (Coelho & Dell'Aglio, 2018). As such, both domains may be evaluated together, which is the model we chose for this study.

Beyond the individual component, we can also assess students based on how the school staff engages in their learning process and deals with their needs, difficulties, and performance. This perception is known as institutional engagement (Vitória, Casartelli, Rigo, & Costa, 2018), which can be defined as the institutional effort to provide and promote resources and foster an embracing teacher-student relationship (Martins & Ribeiro, 2017).

Understanding academic engagement requires investigating the sources of support for a student, as friends, family, and teachers directly influence an adolescent's cognitive development (Carvalho & Veiga, 2023). Unlike children, adolescents are more capable of accepting others' thoughts, engaging in causes, and feeling a sense of belonging. When students feel supported by teachers and peers, and when both teaching methods and the curriculum are challenging and aligned with their interests, they become more invested, satisfied with the school environment, and, consequently, demonstrate improved academic performance (Papalia & Feldman, 2022).

Perceived social support consists of the information that makes an individual feel protected, valued, and loved, perceiving and receiving support and assistance from their social environment (Cohen, Janicki-Deverts, Turner, & Doyle, 2015). This aspect of social relationships involves both material assistance and emotional protection, leading to positive emotional and behavioral effects (Yano et al., 2021). Social support throughout adolescence plays a crucial role, as teenagers undergo significant physical and psychosocial changes (Papalia & Feldman, 2022).

Both social support and a sense of belonging encourage teenagers to develop and engage in school activities. School, teachers, family, and friends serve as essential sources of support for healthy development, as these protective factors counterbalance risk factors that negatively impact development (Coelho & Dell'Aglio, 2018; Gil et al., 2021; Tao et al., 2022). A positive psychosocial school environment—characterized by strong relationships between students, peers, and teachers—promotes academic engagement (Carvalho & Veiga, 2023; Pestana, 2015). When teachers adopt

a more democratic approach, they foster greater student motivation and engagement in school activities (Toshalis & Nakkula, 2012).

Peer relationships are among the most significant social influences during adolescence, as teenagers spend considerable time with friends or alone. The quality of peer relationship can also affect student interest, serving as either a risk or protective factor (Wang & Eccles, 2012). Some studies suggest that greater perceived social support may correlate negatively with academic engagement and class attention. Teenagers who excessively seek peer acceptance and friendship tend to focus less on academics (Hernandez, Oubrayrie-Roussel, & Prêteur, 2016).

Peer social support can influence both behavioral and emotional engagement. Students whose friends exhibit poor academic performance or engage in bullying tend to be less engaged in school. Conversely, academic engagement increases when teenagers feel accepted and free to exchange diverse perspectives with peers (Coelho & Dell'Aglio, 2018).

Pescini (2019) conducted a study with 634 students aged 10 to 14 and concluded that family support was the most influential factor across all engagement dimensions. However, Coelho and Dell'aglio (2018) found contrasting results in their study of 504 students (average age of 15.88 years), identifying teacher support as the most influential factor, with family support predicting only cognitive/behavioral engagement. Kilday and Ryan (2019) examined self-perceived classroom satisfaction among 761 students, finding that both peer and teacher support significantly influenced behavioral engagement, while teacher support also strongly affected emotional engagement.

Studying and understanding academic engagement and its predictors can inform the development of more effective teaching strategies. Low engagement often leads to school dropout, delinquency, and health-risk or aggressive behaviors (Coelho & Dell'Aglio, 2018).

Given this context, this study aimed to present an explanatory model of the relationships between perceived social support and engagement among students from a federal public technical high school in southern Brazil.

2. Method

2.1 Participants

The study sample consisted of 1,904 Brazilian high school students from 25 campuses of a federal public school in southern Brazil, with an average age of 15.9 years ($SD = .93$). The majority of students declared themselves female (63.2%; $n = 1,204$), heterosexual (74.8%; $n = 1,425$), and white (65.1%; $n = 1,239$). A total of 56.1% ($n = 1,068$ students) attended morning classes, while 29% ($n = 553$) attended both morning and afternoon classes. Most participants (49.2%; $n = 937$) reported being satisfied with their academic performance, and 58.6% ($n = 1,115$) reported being mostly satisfied with their learning. Nearly 70% of the students (68.2%; $n = 1,298$) reported having all their basic needs met, including food, shelter, health, and well-being.

2.2 Instruments

Multidimensional Scale of Perceived Social Support at the University (Yano et al., 2021): a self-report questionnaire, with 11 items, to identify the perceived level of social support at the university. This instrument consists of three components: family support (4 items), friends support (4 items), and teacher support (3 items). Responses were rated on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree).

Academic Engagement Scale: instrument adapted from the First-Year Experience Questionnaire (FYEQ) (Krause & Coates, 2008). It consists of four items assessing emotional engagement, five items assessing behavioral engagement, three items assessing cognitive engagement, and three items assessing institutional engagement. Responses were rated on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree).

Sociodemographic questionnaire: developed by the scientists involved in this study to evaluate the characteristics of each participant, such as age, gender identity, affectional orientation, race, morning or afternoon classes, socioeconomic status, satisfaction with the school, and academic performance.

2.3 Procedures

Data were collected through online questionnaires answered in person across 25 campuses of the institution in November 2019. The study was conducted in collaboration with the Observatory Xará (Observatório do Clima Institucional e Prevenção da Violência em Contextos Educacionais). The school assigned a team to administer the questionnaire; the administration process was communicated and planned, as teachers needed to allocate class time for the study. Researchers instructed the teachers and explained the study's objectives, risks, and benefits to the students. Since most participants were minors, families received informed consent forms. After obtaining parental permission, the application team sought students' assent (or refusal). Students used classroom computers—most of which were individually assigned—or computer lab workstations to complete the questionnaires. Participation was voluntary, and students took approximately 20 minutes to answer all questions. This study was approved by the Research Ethics Committee (reference number 3.607.418, CAEE 02575618.2.3004.8156).

2.4 Data analysis

The psychometric properties of the Multidimensional Scale of Perceived Social Support at University and the Academic Engagement Scale were examined through factor structure analysis and internal consistency assessment. Factor structure was tested using exploratory factor analysis (EFA) with the Kaiser criterion and parallel analysis. Bartlett's test of sphericity and the Kaiser-Meyer-Olkin (KMO) test were employed to assess the interpretability of the correlation matrix (Field, 2020). Internal consistency was evaluated using Cronbach's alpha and McDonald's omega (Revelle & Condon, 2019). Statistical analyses were performed in Jamovi 2.3 (The Jamovi Project, 2022).

Explanatory models of the relationships between perceived support and academic engagement were developed using multiple regression analysis. These models examined how perceived support from family, friends, or school leads to emotional, cognitive/behavioral, or institutional engagement.

3. Results

3.1 Psychometric properties of the engagement and support tools

First, we tested all the measurement models applied in this study to ensure the correspondence and representativeness of the phenomenon under investigation. Data matrices with KMO index above .85 and Bartlett's test of sphericity with a significant level of $p < .01$ for both instruments were considered appropriate for exploratory factor analysis (EFA). We employed this technique to evaluate the model's adequacy for measuring academic engagement and perceived social support.

EFA, combined with the Kaiser criterion and parallel analysis, indicated the retention of three factors for academic engagement and three factors for perceived social support. Although the initial model proposed four factors for academic engagement (emotional, institutional, cognitive, and behavioral), factor loadings suggested merging cognitive and behavioral engagement into a single factor in our study. Thus, cognitive/behavioral engagement refers to academic performance, incorporating student satisfaction, interest, challenges, and organization.

The academic engagement instrument presented factor loading $> .50$, while the perceived social support instrument exhibited factor loading $> .80$. Both instruments showed internal consistency levels above .70, which is considered acceptable. Tables 1 and 2 present the psychometric properties of the measurement models for both instruments.

Table 1 – Psychometric Properties of the Measurement Model for the Instrument of Perceived Social Support at the University

Items	Family Support	Friends Support	Teachers Support
I get the emotional help and support I need from my family.	.94	-.02	-.02
My family tries to help me.	.89	-.01	-.01
My family is willing to help me make decisions.	.85	.02	.01
I can talk about my problems with my family.	.78	.04	.04
I have friends with whom I can share my joys and sorrows.	-.08	.90	-.03
I can talk about my problems with my friends.	-.01	.88	-.01
I can count on my friends when things go wrong.	.01	.88	.03
My friends try to help me.	.02	.81	.02
In general, I feel my teachers support me when I need them.	.01	-.01	.89
I have a teacher I can't count on during tough times.	-.03	.04	.68
The teachers listen to the students when they have problems.	.01	-.04	.53
Explained variance (%)	27.80%	27.70%	14.70%
Total explained variance		69.80%	
Cronbach's alpha (α)	.92	.92	.73
McDonald's omega (ω)	.93	.92	.75

Source: Authors (2025).

Table 2– Psychometric Properties of the Measurement Model for the Instrument of Student Engagement

Items	Behavioral/Cognitive Engagement	Institutional Engagement	Emotional Engagement
I feel a deep sense of satisfaction when studying.	.76	-.06	.14
I take pleasure in the intellectual challenge of the curricular components/courses I study.	.70	.05	-.01
Classes spark my interest in the curricular components/courses.	.62	.21	.04
I ask questions in class.	.52	-.01	-.16
I organize my schedule to be able to study.	.50	-.02	-.05
Faculty members make an effort to understand the learning difficulties of the students.	.02	.83	-.02
Most of the school staff take an interest in my learning progress.	.09	.69	.01
The school staff endeavors to make classes interesting.	-.02	.66	.10
I like going to school.	-.03	.07	.72
I like being a student.	.24	.04	.60
I am happy with the curricular components/courses I am studying.	.01	.25	.44
Explained variance (%)	20.60%	17.90%	12.40%
Total explained variance		50.90%	
Cronbach's alpha (α)	.76	.80	.74
McDonald's omega (ω)	.78	.81	.75

Source: Authors (2025).

3.2 Explanatory model of the relationships between social support perceived and academic engagement

After establishing the psychometric properties, we investigated how perceived social support correlates with academic engagement. The first model explained 8% of the variance ($F(1, 1,902) = 161, p < .001$; adjusted $R^2 = .08$), with teacher, family, and friend support as explanatory variables for general engagement (emotional, cognitive/behavioral, and institutional engagement). Teacher support was the most influential factor for academic engagement ($\beta = .42$; $p < .01$), followed by family support ($\beta = .25$; $p < .01$) and friends support ($\beta = -.05$; $p < .05$). Additional models were generated to further examine the relationship between academic engagement and perceived social support.

3.3 Relationship between perceived social support and emotional engagement

The second model explained 6% of variance ($F(1, 1,902) = 117, p < .001$; adjusted $R^2 = .06$), with teacher, family, and friend support as explanatory variables for emotional engagement. Teachers support was the most influential factor for emotional engagement ($\beta = .33$; $p < .01$), followed by family support ($\beta = .21$; $p < .01$). Friends support was the least representative factor of emotional engagement and considered non-significant ($\beta = -.02$; $p > .05$). To further investigate these relationships, we elaborated a third model.

3.4 Relationship between social support perceived and cognitive/behavioral engagement

The third model explained 3% of the variance ($F(1, 1,902) = 54,7, p < .001$; adjusted $R^2 = .03$), with teachers, family, and friends support as explanatory variables for cognitive/behavioral engagement. Family support ($\beta = .30$; $p < .01$) and teacher support ($\beta = .21$; $p < .01$) were the most influential factors for cognitive/behavioral engagement. In contrast, friend support had a negative effect, decreasing cognitive/behavioral engagement ($\beta = -.09$; $p < .01$).

3.5 Relationship between social support perceived and institutional engagement

The fourth model explained 8% of the variance ($F(1, 1,902) = 174, p < .001$; adjusted $R^2 = .08$), with teacher, family, and friend support as explanatory variables for institutional engagement. Teacher support was the most influential factor for academic engagement ($\beta = .40$; $p < .01$), followed by family support ($\beta = .18$; $p < .01$). Friend support was non-significant ($\beta = -.01$; $p > .05$), reducing its theoretical and practical relevance.

4. Discussion

This study aimed to develop an explanatory model of the relationship between emotional, cognitive/behavioral, and institutional engagement and perceived social support among adolescents. Our findings identified teacher support as the most significant predictor of general academic engagement, followed by family and friend support. Emotional engagement was similarly most influenced by teacher and family support. In contrast, family support emerged as the primary factor influencing cognitive/behavioral engagement, followed by teacher support. While friend support showed significance, it demonstrated an inverse relationship with cognitive/behavioral engagement. For institutional engagement, teacher support again emerged as the most influential factor, followed by family support.

The results indicate that emotional engagement is most strongly influenced by teacher support. Emotional engagement reflects students' affective responses to school and learning (Furlong et al., 2003). Our findings emphasize the crucial role of teacher support in fostering academic engagement, particularly in enhancing learning satisfaction and sense of belonging. These results align with previous research by Estell and Perdue (2013) and Coelho and Dell'Aglio

(2018), who identified teacher support—manifested through proximity, autonomy promotion, and student guidance—as the most significant factor in academic engagement.

Cognitive/behavioral engagement showed different patterns, being most strongly predicted by family support. Students with stronger family support systems demonstrated greater engagement in school activities. Previous research (Gerard & Booth, 2015) suggests that family support enhances classroom participation while reducing learning difficulties and behavioral problems.

Interestingly, friend support showed a negative association with cognitive/behavioral engagement, suggesting that stronger peer influence may decrease academic engagement. During adolescence, youth increasingly value support from non-familial sources, making teacher and peer relationships particularly influential (Gerard & Booth, 2015). While positive peer relationships can foster healthy development through acceptance and open dialogue (Coelho & Dell'Aglío, 2018), peer influence may also negatively impact academic engagement.

Regarding institutional engagement, our findings confirmed teacher support as the primary predictor, consistent with previous research (Vitória et al., 2018). Institutional engagement reflects students' perceptions of their school's commitment to their learning and well-being.

The comprehensive model highlights teacher support as the most influential factor for overall engagement, underscoring educators' pivotal role in academic outcomes (Tao et al., 2022). Family support also significantly contributes to general engagement, with positive family-school relationships facilitating engagement strategies (Gil et al., 2021). These findings corroborate Loureiro's (2017) conclusion that students in supportive school environments with strong family-school partnerships typically demonstrate better academic performance. While friend support remains relevant, teacher and family support demonstrate stronger effects, emphasizing the need to reconsider family-school dynamics when developing engagement strategies (Tao et al., 2022).

Although the models explained a relatively small proportion of the variance in academic engagement (adjusted $R^2 \leq .08$), this aligns with the multifaceted nature of the construct. Academic engagement is influenced by a complex interplay of individual, social, and institutional factors beyond perceived social support (Fredricks et al., 2016; Sengsouliyai et al., 2020). For instance, intrinsic motivation, self-efficacy, school climate, and socioeconomic background may account for additional variance not captured in this study (Wang & Eccles, 2012). The modest R^2 values underscore that while teacher, family, and peer support are significant predictors, they represent only part of a broader ecosystem shaping engagement.

Understanding academic engagement among adolescents and the influence of social support contributes to developing new strategies to improve academic performance (Festas et al., 2018). Furthermore, the sources of social support need to be made aware of their role in this improvement.

Understanding adolescent engagement patterns and social support influences can inform interventions to enhance academic performance (Festas et al., 2018). Furthermore, stakeholders should recognize their respective roles in this process. A multifaceted approach incorporating supportive teacher practices that foster democratic classroom environments (Toshalis & Nakkula, 2012), collaborative learning opportunities that promote positive peer interactions (Coelho & Dell'Aglío, 2018), and family involvement in academic and extracurricular activities (Loureiro, 2017) may significantly improve student outcomes compared to those lacking such support systems.

5. Conclusions

This study developed an explanatory model of the relationship between perceived social support and academic engagement among adolescents. The findings identified teacher support as the most influential factor for both cognitive/behavioral and institutional engagement, followed by family support.

Several limitations should be acknowledged. First, the convenience sampling method may limit the generalizability of findings to diverse educational contexts or the broader Brazilian population. Although the sample included nearly 2,000 students from 25 campuses, the study focused on a single institution in a specific geographic

region. Schools in technical education systems often have unique characteristics (e.g., emphasis on workforce preparation, specific student profiles) that could shape how social support influences engagement differently than in regular schools. Future studies should test these models in diverse educational settings (e.g., private schools, different regions) to assess broader applicability.

Second, although sociodemographic data were collected (e.g., socioeconomic status, gender identity, race), these variables were not included in the predictive models. Prior evidence suggests that such factors may interact with social support in shaping engagement. For instance, students from disadvantaged backgrounds might rely more heavily on teacher support due to varying family resources. Additionally, gender or cultural norms could influence how peer support affects engagement behaviors. Future research could integrate these variables as moderators or controls to refine the model's accuracy. To advance this field, we suggest longitudinal designs to examine whether the observed relationships persist over time, and qualitative approaches (e.g., student interviews) to explore why peer support showed negative associations in this sample.

Methodologically, this study provides psychometric validation for both the Multidimensional Scale of Perceived Social Support at University and the Academic Engagement Scale, supporting their use in future research. From a social and policy perspective, these findings significantly advance our understanding of academic engagement and social support dynamics. The results may inform diagnostic assessments, psychopedagogical interventions, and the development of effective educational policies. By demonstrating the crucial role of teacher and family support in fostering emotional, cognitive/behavioral, and institutional engagement among adolescents, this research underscores the importance of cultivating positive relationships in educational settings.

Data availability statement

The data supporting the findings of this study contain sensitive information and are therefore not publicly available. Access to the data is restricted in accordance with ethical and editorial guidelines.

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Editores Responsáveis: Thainara Granero de Melo

Recebido/Received: 28.04.2025 / 04.28.2025

Aprovado/Approved: 30.09.2025 / 09.30.2025