

First-year students' academic motivation during the pandemic: The role of social support and basic psychological needs

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Abstract

Due to the COVID-19 pandemic, academic institutions needed to make swift changes in educational systems. Students needed to adapt and cope with novel challenges, which affected their academic motivation. Research shows that social support and satisfaction of basic psychological needs play an important role in maintaining academic motivation. The current study aimed to explore the role of perceived social support and satisfaction of basic psychological needs in first-year students' academic motivation. Our sample included 117 first-year students who completed the Academic Motivation Scale, Social Support Assessment Scale, and Basic Psychological Need Satisfaction and Frustration Scale. Results showed positive associations of perceived social support from professors, satisfaction of needs for autonomy and relatedness, and autonomy frustration with intrinsic academic motivation. We used hierarchical regression analysis to better understand these associations and found that satisfaction of the need for autonomy was the most important predictor of intrinsic academic motivation, and it also fully mediated the association between social support received from professors and intrinsic academic motivation. Our findings highlight the importance of autonomy-supportive learning opportunities and professors' support.

Keywords: *academic motivation; basic psychological needs; first-year students; pandemic; social support*

Introduction

The worldwide spread of coronavirus (COVID-19) resulted in a forced global shutdown of various activities, including educational activities.

Closing educational institutions affected 91% of the student population around the world (UNESCO, 2022). Moreover, students started having their lectures and exams in the online form. Learning in an online space is not a new concept of learning

in higher educational systems (Dumford & Miller, 2018). However, the pandemic did not only affect transferring to online learning space, but it also influenced the social life and mental health of students with possible long-term consequences (Chaturvedi et al., 2021). First-year university students are already undergoing a major life transition, and the consequences of the pandemic have significantly impacted their mental well-being. This has resulted in increased anxiety, depression, and other mental health issues (Ray et al., 2021). According to Allen et al. (2017), prioritizing mental health promotion increases academic scores significantly. This suggests that prioritizing mental health is beneficial for improving academic performance and motivation.

It is important to understand students' motivation, since it will have a high impact on their engagement and overall school success (López-Pérez et al., 2011). Dörnyei & Ushioda (2011) state that students' academic motivation is the driving force of their choices, engagement, effort, and persistence in learning. Amrai et al. (2011) showed a significant relationship between academic motivation and academic achievement. However, motivation is not a unidimensional concept, rather, it should be seen as a complex and multidimensional construct (Anderman & Dawson, 2011). Deci and Ryan (1985) posit in their Self-Determination Theory that behavior can be intrinsically motivated, extrinsically motivated, or amotivated. This theoretical approach led Vallerand et al., (1992) to develop a measure of academic motivation that we used in this study.

According to self-determination theory (Deci & Ryan, 2012, 2014; Ryan & Deci, 2008), there are three fundamental psychological needs: autonomy, competence, and relatedness. Students feel competent when they successfully complete assigned tasks (Skinner & Belmont, 1993), especially when they receive positive feedback. However, the pandemic has negatively impacted the fulfillment of this need. The shift to online learning and the lack of in-person feedback and support have compromised students' confidence in their abilities, resulting in a decline in their

sense of competence (Teuber et al., 2021). Autonomy is fulfilled when students perceive that they have control over their lives. Having options and choices increases intrinsic motivation, while deadlines decrease it (Zuckerman et al., 1978). With limited opportunities for social interaction and reduced flexibility in their schedules, many students have felt a loss of control in their lives. This lack of autonomy resulted in decreased intrinsic motivation, making it more difficult for students to stay engaged in their studies (Holzer et al., 2021). Finally, relatedness refers to being emotionally connected and interacting with others. Due to limited social interaction and reduced access to support networks, many students have felt emotionally disconnected and isolated (Vergara & Del Valle, 2021). Saeid Karimi and Sotoodeh (2020) demonstrated in their study that the satisfaction of the basic psychological needs for autonomy, competence, and relatedness had significant and direct positive effects on intrinsic motivation of students. However, the satisfaction of needs should be differentiated from the frustration of needs. That is to say, one's needs may not be satisfied, but dissatisfaction does not necessarily imply frustration (Tuin et al., 2020). For example, a student might struggle with the understanding of the subject and experience dissatisfaction of the need for competence, but that does not mean that this student would feel like a failure, i.e., experience frustration of the need for competence.

Since motivation is a complex and multidimensional construct, academic motivation is not only influenced by intrapersonal factors, but also by students' social environments. Tezci et al. (2015) have shown the important role of social support received from parents, teachers, and friends in academic motivation. In addition, interpersonal support promotes self-determined motivation (Deci & Ryan, 1985). According to Reeve (2002), students' motivation increases when their autonomy is supported by their teachers. Research suggests that the perceived social support students had received during the pandemic was negatively associated with their anxi-

ety (Ma & Miller, 2021). Moreover, when students perceived they had good social support, they had better coping mechanisms for their anxiety that was related to the pandemic (Ma & Miller, 2021). Adamou (2018) reported a significant relationship between peer support and student academic motivation, where peer support was found to have a strong direct effect on academic motivation.

Amidst the COVID-19 pandemic, the world has undergone a rapid shift in the way we function, particularly in the realm of education. For first-year university students, this sudden change can be especially daunting, leading to challenges in maintaining academic motivation. This study aims to shed light on the factors that contribute to academic motivation in this context. Drawing on previous research, we hypothesize that higher levels of social support, satisfaction of basic psychological needs, and lower levels of basic psychological needs frustration will be associated with higher levels of academic motivation. To explore the relative importance of these factors, we will conduct hierarchical regression analyses, entering social support variables first followed by basic psychological needs and vice versa, in order to identify the most significant predictors of academic motivation.

Method

Participants and procedure

The criteria for recruiting participants were that they were students (first-year students) who were enrolled in their first year of studying for the first time in the academic year of 2020/2021. A total of 153 people filled in the questionnaire, out of which 117 (83.8% female) students met the mentioned criteria. These students were aged between 18 and 27 years ($M = 20.06$, $SD = 0.96$), and were studying at ten different higher education institutions in Croatia, with the majority studying at the University of Zagreb (70.9%).

After obtaining ethical approval for the study,

an online questionnaire in Google Forms was posted on popular student Facebook pages (Facebook group size varied from 4k to 150k members). Data were collected during February and March 2022, two years into the ongoing COVID-19 pandemic and after first-year students had completed a year of face-to-face learning. As a result, their responses were given retrospectively. To address this, we adapted the wording of the questionnaire to the past tense and provided clear instructions for participants to respond based on their experiences during the 2020/2021 academic year.

Measures

Academic Motivation Scale (AMS; Vallerand et al., 1992) The Academic Motivation Scale (AMS) consists of 28 items. The original version of AMS showed a seven-factor structure (amotivation, three types of extrinsic motivation – external, introjected, identified, and three types of intrinsic motivation – knowledge, accomplishment, and experience). For the current study, we were interested in measuring only extrinsic and intrinsic motivation. Therefore, our scale consisted of 24 items. The items were rated on a 7-point scale, ranging from 1 (“does not correspond at all”) to 7 (“corresponds exactly”). Cronbach’s alpha was .96 for intrinsic academic motivation and .86 for extrinsic academic motivation.

Social Support Assessment Scale (SSAS; Kurtović, 2013) The social support assessment scale is an adaptation of the Social Support Appraisal Scale (Vaux et al., 1986). The scale measures three aspects of social support: support within the family, support from friends, and support at work. It is a self-assessment questionnaire, which consists of 24 items (8 for each subscale), and answers are given on a 5-point scale, ranging from 1 (“does not apply to me at all”) to 5 (“completely applies to me”). For research purposes, the items that measure social support at work have been reformulated to measure social support students perceive they receive from professors. Cronbach’s alpha was .92 for family support, .92 for friend support, and .93 for the professors’ support.

Basic Psychological Need Satisfaction and Frustration Scale (BPNSFS; Šakan, 2022) This scale is the translated version of The Basic Psychological Needs Satisfaction and Frustration Scale (Chen et al., 2015). The scale consisted of 24 items assessing three needs satisfaction subscales: autonomy satisfaction (e.g., “I feel that my choices express who I am”), competence satisfaction (e.g., “I feel capable at what I do”), and relatedness satisfaction (e.g., “I feel that people I care about also care about me”), and three needs frustration subscales: autonomy frustration (e.g., “I feel forced to do many things I wouldn’t choose to do”), competence frustration (e.g., “I feel like a failure because of the mistakes I make”), and relatedness frustration (e.g., “I feel the relationships I have are just superficial”). Participants provided their responses on a 5-point scale ranging from 1 (“I completely disagree”) to 5 (“I completely agree”). Cronbach’s alpha for six subscales was in the .63 to .85 range.

Results

Descriptive statistics and intercorrelations between all study variables are presented in Table 1. Our participants reported similar levels of intrinsic and extrinsic academic motivation and similar levels of support from friends and family. Highest need satisfaction and lowest need frustration were reported for the need for relatedness, while lowest need satisfaction and highest need frustration were reported for the need for autonomy. To examine the associations between academic motivation, social support and basic psychological needs, we calculated Pearson correlations with a significance level set at $p < .01$. Correlational analysis showed that extrinsic academic motivation was not significantly associated with social support and basic psychological needs. Significant correlations were observed for intrinsic academic motivation, which was positively associated with social support from professors, autonomy and relatedness needs sat-

Table 1. Descriptive statistics and intercorrelations between study variables ($N = 117$)

| Variable | $M(SD)$ | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
|------------------------------|----------------|-------|-----|-------|-------|-------|-------|-------|-------|-------|-------|
| 1. Intrinsic motivation | 5.12 (1.52) | | | | | | | | | | |
| 2. Extrinsic motivation | 5.28 (1.25) | .24* | | | | | | | | | |
| 3. Support friends | 4.15 (0.74) | .19 | .14 | | | | | | | | |
| 4. Support family | 4.16 (0.88) | .20 | .11 | .35* | | | | | | | |
| 5. Support professors | 2.96 (0.95) | .30* | .10 | .31* | .29* | | | | | | |
| 6. Autonomy satisfaction | 3.71 (0.84) | .58* | .03 | .22 | .21 | .35* | | | | | |
| 7. Autonomy frustration | 3.45 (0.89) | -.38* | .21 | -.13 | -.23 | -.33* | -.51* | | | | |
| 8. Competence satisfaction | 3.88 (0.80) | .35 | .01 | .22 | .25* | .27* | .41* | -.33* | | | |
| 9. Competence frustration | 2.75 (1.15) | -.34 | .07 | -.18 | -.28* | -.31* | -.46* | .59* | -.67* | | |
| 10. Relatedness satisfaction | 4.36 (0.66) | .29* | .00 | .64* | .46* | .24* | .37* | -.17 | .24* | -.29* | |
| 11. Relatedness frustration | 2.15 (0.74) | -.22 | .03 | -.51* | -.32* | -.18 | -.36* | .34* | -.28* | .40* | -.70* |

Note. * $p < .01$

Table 2. Results of the hierarchical regression analyses

| Step | Model 1 | | | | Model 2 | | | |
|------|--|----------|----------|-------|--|----------|----------|-------|
| | Beta | <i>t</i> | <i>p</i> | | Beta | <i>t</i> | <i>p</i> | |
| 1 | Support friends | .08 | 0.83 | .408 | Autonomy satisfaction | .46 | 4.79 | <.001 |
| | Support family | .11 | 1.08 | .282 | Autonomy frustration | -.15 | -1.43 | .156 |
| | Support professors | .24 | 2.54 | .012 | Competence satisfaction | .14 | 1.38 | .172 |
| | | | | | Competence frustration | .05 | 0.44 | .659 |
| | | | | | Relatedness satisfaction | .17 | 1.53 | .130 |
| | | | | | Relatedness frustration | .13 | 1.20 | .233 |
| | <i>F</i> (3,113) = 4.61, <i>p</i> = .004, adj. <i>R</i> ² = .09 | | | | <i>F</i> (6,110) = 10.97, <i>p</i> < .001, adj. <i>R</i> ² = .34 | | | |
| 2 | Support friends | .01 | 0.06 | .952 | Autonomy satisfaction | .45 | 4.58 | <.001 |
| | Support family | .02 | 0.21 | .836 | Autonomy frustration | -.13 | -1.25 | .215 |
| | Support professors | .06 | 0.67 | .508 | Competence satisfaction | .14 | 1.26 | .211 |
| | Autonomy satisfaction | .45 | 4.58 | <.001 | Competence frustration | .06 | 0.46 | .649 |
| | Autonomy frustration | -.13 | -1.25 | .215 | Relatedness satisfaction | .14 | 1.08 | .281 |
| | Competence satisfaction | .14 | 1.26 | .211 | Relatedness frustration | .13 | 1.09 | .278 |
| | Competence frustration | .06 | 0.46 | .649 | Support friends | .01 | 0.06 | .952 |
| | Relatedness satisfaction | .14 | 1.08 | .281 | Support family | .02 | 0.21 | .836 |
| | Relatedness frustration | .13 | 1.09 | .278 | Support professors | .06 | 0.67 | .508 |
| | <i>F</i> (9,107) = 7.22, <i>p</i> < .001, adj. <i>R</i> ² = .33 ΔF (6,107) = 7.70, <i>p</i> < .001, ΔR^2 = .27 | | | | <i>F</i> (9,107) = 7.22, <i>p</i> < .001, adj. <i>R</i> ² = .33 ΔF (3,107) = 0.20, <i>p</i> = .898, ΔR^2 = .00 | | | |

Note. Beta = standardized regression coefficient; *t* = *t* value; *p* = *p*-value; *F* = *F*-ratio; Adj. *R*² = adjusted coefficient of determination; ΔF = change in *F*-ratios; ΔR^2 = change in *R*²

isfaction, and negatively with autonomy frustration.

To further examine these associations, since social support and basic psychological needs were also intercorrelated, we conducted a series of hierarchical regression analyses with intrinsic academic motivation as criteria. We entered social support variables first, followed by basic psychological needs and vice versa. Results are

presented in Table 2. When social support variables were entered first in regression analysis, they explained 9% of intrinsic academic motivation with support from professors as a significant predictor. However, when basic psychological needs were entered in the second step, only autonomy need satisfaction was a significant predictor with a full model explaining 33% of the intrinsic academic motivation variance. When

basic psychological needs were entered first in regression analysis, autonomy need satisfaction was a significant predictor with a model explaining 34% of the variance. Adding social support variables in the second step did not improve prediction of intrinsic academic motivation. We tested the possible mediation from model 1 using PROCESS (Hayes, 2018). The tested model was a simple mediation model with intrinsic academic motivation as an outcome variable, social support from professors as a predictor variable, and autonomy need satisfaction as a mediator variable. The indirect effect of social support from professors on intrinsic academic motivation was found to be significant [effect = .19, 95% C.I. (.08, .32)].

Discussion

The current study aimed to explore the role of perceived social support and basic psychological needs satisfaction and frustration in academic motivation during the pandemic. Our sample consisted of first-year students who were enrolled in their first year of studying for the first time in the academic year 2020/2021. While the response rate for our survey was satisfactory, it is important to note that our sample may have been biased towards students who experienced more difficulties during the pandemic. Specifically, most of the comments in response to the question "What were your biggest challenges during the 2020/2021 academic year?" were related to student life, online class organization, and communication with professors. However, this bias could actually be seen as a strength of our study, as it allowed us to gain a more in-depth understanding of the challenges that students faced during the pandemic.

Findings showed that only intrinsic academic motivation was significantly correlated with both perceived social support and basic psychological needs satisfaction and frustration. Furthermore, regression analysis showed that perceived social support received from professors was a signifi-

cant predictor of intrinsic academic motivation, but only when basic psychological needs were not in the regression model. From all basic psychological needs' satisfaction and frustration variables, the satisfaction of the need for autonomy was the most important predictor of intrinsic academic motivation. Perceived social support and basic psychological needs satisfaction and frustration together explain 33% of the variance in intrinsic academic motivation. Mediation analysis showed that social support from professors has an effect on intrinsic academic motivation through the satisfaction of students' need for autonomy. In other words, students who get social support from professors get more satisfaction of their need for autonomy, which contributes to their higher intrinsic academic motivation.

Our results are in line with previous findings from the literature. Camacho et al. (2021) showed that students' anxiety and teachers' social support (reported by parents) were significant predictors of the decrease in students' academic motivation during the pandemic. The literature emphasizes the important role of teachers, as important contributors to fulfilling students' psychological needs when they provide structure and autonomy to the students (Deci & Ryan, 1985; Reeve, 2002). Wentzel (2009) suggests that creating a trustful relationship with teachers is a step forward in improving students' motivation and well-being. Nevertheless, we did not find support for social support from family and friends being a significant predictor of academic motivation. A possible explanation for this is students' different perceptions of social support, where they perceive parents as providers of emotional and instrumental support, classmates of informational and emotional support, and teachers of informational support (Hombrados-Mendieta et al., 2012). Furthermore, inevitable lockdowns resulted in shifting to distance learning, which influenced students' fulfillment of their basic psychological needs and their intrinsic motivation for school (Zaccoletti et al., 2020). Reeve (2002) showed that students' motivation benefits when teachers support their autonomy, which is in line with our finding that

satisfaction of the need for autonomy predicts intrinsic academic motivation. Furthermore, Niemiec and Ryan (2009) highlight the important role of autonomy and self-regulated learning in intrinsic learning motivation, showing that individualized and autonomous learning is an optimal path to students' success. Therefore, we suggest that academic institutions should support self-regulated learning and encourage students to consciously structure and plan their learning in order to feel more autonomous in their studying experience.

Limitations and future directions

The current research has some significant strengths, but also some limitations that we would like to discuss in detail.

First, since the study was conducted in 2022, students' responses were provided retrospectively. However, the phrasing of the questions accounted for this, and we believe it did not pose a major issue. Nevertheless, it is important to keep this in mind when interpreting the data. It would be worth exploring whether this could have influenced the results in any way. Secondly, although students from ten different higher education institutions participated in the study, the total number of participants was modest. This may have limited our ability to detect certain effects, given the larger number of variables in our analysis. Therefore, it is highly advisable to use a larger sample size in future research. Follow-up studies on this topic are needed, especially as COVID measures have changed in recent times. It would also be useful to investigate whether the findings from this study can be applied to other populations, or if they are particular to the sample used in this research. Finally, future studies should consider adopting different approaches to participant recruitment to ensure better representation of the student population. For instance, stratified sampling techniques can be utilized to guarantee a more diverse sample, or specific groups of students who may have been underrepresented in the current sam-

ple could be targeted. Furthermore, it would be interesting to explore whether the results of this study can be replicated in different contexts, or whether they are specific to the particular institutions and students that were included in this research.

Conclusion

The present study highlights the potential importance of perceived social support and basic psychological needs satisfaction and frustration in academic motivation of first-year students. Findings suggest that there may be a relationship between professors' support and intrinsic learning motivation. Moreover, it appears that satisfying the need for autonomy may predict students' intrinsic academic motivation. Mediation analysis suggested that the relationship between social support from professors and intrinsic academic motivation may be explained by the satisfaction of students' need for autonomy. These findings suggest that universities could benefit from promoting a supportive and autonomous environment for students, particularly during challenging times. Additionally, providing accessible communication and support between teachers and students, while encouraging self-regulatory learning experiences, could have positive implications for increasing student academic motivation.

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