

Causality Orientations as Predictors of Academic Psychological Capital Among University Students: A Path Analysis

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Abstract

Academic psychological capital (PsyCap), defined as a composite of hope, efficacy, optimism, and resilience, has been found to consistently predict student motivation, engagement, and achievement, but there have been few direct studies of the link with self-determination theory (SDT) orientations to cause. This is somewhat counterintuitive in that both frameworks are focused on questions of student agency and regulation. To fill this gap, the present study examined autonomous, controlled, and impersonal causal orientations as predictors of academic PsyCap among university students, with the covariates being grade point averages (CGPA) and age. The students of 5th-8th Semester BS Honors and MSc programs of the University of Sargodha were selected by a convenience sampling method, with a total sample size of 300 (150 boys and 150 girls). Academic PsyCap was quantified using a composite of four existing scales, and the General Causality Orientation Scale (GCOS) (Deci & Ryan, 1985) was used for assessing causality orientations. The results of the path analysis revealed that autonomous (controlled) causality orientation positively predicted academic PsyCap, while impersonal causality orientation negatively predicted academic PsyCap. The CGPA also appeared to be a positive predictor with no significant relation with the outcome in the case of age. A good fit of the data was obtained with the model. The results expand the application of self-determination theory to the academic context of PsyCap, and indicate that autonomy-supportive and (to a certain degree) pressure-driven regulation styles are linked to psychological resourcefulness among students, whereas an experience of impersonal, uncontrollable outcomes seems to negatively affect it. Consequences for student support programs and suggestions for future longitudinal studies are considered.

Key Words: Academic Psychological Capital, Causality Orientations, Self-Determination Theory, University Students, Path Analysis

Introduction

According to King and Caleon (2020), students' academic psychological capital is a changeable set of positive psychological resources, including hope, efficacy, resilience, and optimism, which can help support students' motivation, engagement, performance, and adjustment. Academic psychological capital is defined as a malleable set of positive psychological resources (hope, efficacy, resilience, and optimism) that can support students' motivation, engagement, performance, and adjustment (Li et al., 2023; King & Caleon, 2020; Pham et al., 2025). In the field of higher education, PsyCap is linked to academic success, retention, reduction in burnout, adaptive functioning, and engagement, and can mediate the impact of positive academic experiences such as supportive relationships on student outcomes (Datu et al., 2018; Martínez et al., 2019; Sweet & Swayze, 2020).

Self-determination theory also recognizes causality orientations as fairly enduring individual differences within the interpretation, initiation, and regulation of action involved in students' learning and doing (Hagger & Hamilton, 2020; Wong, 2000). Autonomy orientation involves experiencing and self-perceived choice; control orientation involves experienced regulation to either internal or external pressures; and impersonal orientation involves ineffectiveness and lack of intentional control (Hagger & Hamilton, 2020; Wong, 2000).

This allows for the theoretical relevance of causality orientations to academic PsyCap, as both traditions focus on students' personal agency, competence-related beliefs, and adaptive regulation under challenge (Pham et al., 2025; Liu & Huang, 2022; Zhang et al., 2024). However, the literature has seldom brought together these two frameworks at the same time, leading to a distinct gap: causality orientation research explains why students are motivated to engage in academic demands in their volition, pressure, or helplessness, and academic PsyCap research explains how students' orientations are translated into their performance and persistence through hope, efficacy, resilience, and optimism (Li et al., 2023; Martínez et al., 2019; Zhang et al., 2024).

Literature Review

The first part of the rationale comes from causality orientation theory. Hagger and Hamilton (2020) conducted a meta-analysis of 83 studies and found that autonomy orientation was positively related to autonomous motivation, control orientation was positively related to controlled motivation, and impersonal orientation was negatively related to autonomous motivation and positively related to controlled motivation. The same process model suggested that autonomy orientation relates to behavior partly via autonomous motivation, whereas impersonal orientation relates to poorer motivational pathways (Hagger & Hamilton, 2020).

Conducted in academic settings, the primary studies converge in the same direction. Autonomy orientation is associated with a more positive academic experience, whilst control orientation is associated with poorer academic performance and commitment given control (Wong, 2000). In addition, autonomous students are more likely to be focused on learning goals and to feel well academically, whereas impersonal students are more likely to be focused on performance goals and to feel helpless academically (Koestner & Zuckerman, 1994). A more recent study has also shown the negative mental contrasting around academic goals to be predicted by controlled orientations and positive mental contrasting by amotivated orientations, while autonomy induction resulted in higher spontaneous mental contrasting compared to a neutral condition (Tamim et al., 2024).

Patterns are important for PsyCap because academic PsyCap is always interrelated with adaptive motivation and self-regulation. PsyCap accounts for autonomous motivation, controlled motivation, engagement, and achievement cross-sectionally and longitudinally, with autonomous motivation being a mediator of part of the effect of PsyCap on achievement and engagement (Datu et al., 2018). A similar resource pattern also predicts optimal motivation and engagement in younger samples, indicating that the same resource pattern extends across educational stages (King & Caeon, 2020). For Chinese university students, PsyCap positively predicts autonomous motivation and GPA, and autonomous motivation is between PsyCap and performance (Liu & Huang, 2022).

A second line of evidence is that the actions and outcomes of academic experiences are mediated by the proximal resource of PsyCap. The results showed that the relation between basic psychological need satisfaction and academic performance was mediated fully by PsyCap, which suggests that the academic performance of students in a need-supportive environment is mediated by need-supportive factors including hope, efficacy, resilience, and optimism (Tamim et al., 2024). Reviews have consistently found that PsyCap acts as a mediator for relationships between teacher-student relationships, parent-child relationships, peer support, school climate, positive emotions and academic outcomes (Li et al., 2023; Pham et al., 2025).

Need-based motivational research enhances this rationale. Examining the results of a large meta-analysis, competence was the most important predictor of self-determined motivation, followed by autonomy and relatedness, while teacher autonomy support was a stronger predictor of need satisfaction and self-determined motivation than parental autonomy support was (Bureau et al., 2021). In higher education, autonomous motivation and perceived competence positively predict achievement and negatively predict dropout intentions, while controlled motivation predicts dropout intentions and is unrelated to achievement (Jeno et al., 2018). Given that orientations involving competence, volition, and adaptive goal pursuit are expected to be more conducive to higher PsyCap than orientations involving helplessness and externally pressured regulation (King & Caeon, 2020; Liu & Huang, 2022), orientations that cover these aspects are expected to be more compatible with higher PsyCap.

This is particularly true in the case of impersonal orientation as a negative predictor. It is theoretically defined as impersonal orientation when a perceived lack of control (Wong, 2000) occurs. It relates to decreased autonomous motivation, low confidence, helpless responses to failure, self-depreciation, and lower self-confidence (Hagger & Hamilton, 2020; Koestner & Zuckerman, 1994; Uruthirapathy & Dyke, 2022) empirically. The opposite properties to these are the four dimensions of academic PsyCap, and a negative path from impersonal orientation to academic PsyCap, which is conceptually opposite to it, is very convincing.

The argument for autonomous orientation as an indicator of a positive orientation is also clear. Positive academic experiences, learning goals, confidence, persistence, and mastery-oriented responses to failures are related to autonomy orientation (Wong, 2000; Koestner & Zuckerman, 1994). These characteristics are very similar to those of motivational resources within PsyCap, particularly hope, efficacy and resilience (King & Caleon, 2020).

The evidence around controlled orientation as a positive predictor of academic PsyCap is not as robust. Control orientation is positively related to controlled motivation in the causalisation-orientation literature (Hagger & Hamilton, 2020). In one of the longitudinal student studies, the level of controlled motivation was positively related to the level of psychological resources, suggesting that in certain situations, there is no conflict between controlled motivation and psychological resources (Datu et al., 2018). However, controlled motivation is not related to achievement, but rather controlled orientations predict negative mental contrasting, whilst control orientation predicts poorer academic performance and commitment, and controlled motivation predicts dropout intentions in higher education (Tamim et al., 2024; Wong, 2000; Jeno et al., 2018). Controlled orientation might then have a weak positive, null, or even negative association with overall PsyCap depending on the relative dominance of short-term activation or longer-term strain.

The most critical gap is the lack of direct tests of causality orientations as predictors of academic PsyCap found in the provided literature. The field, however, has been based on an inferential chain; that is, causal orientations predict motivational quality and motivational functioning with confidence, and PsyCap predicts motivation, engagement, and achievement (Datu et al., 2018; Li et al., 2023; Nabais et al., 2024). The SDT and PsyCap literatures have grown separately, with few attempts to combine them into a single framework (Li et al., 2023; Zhang et al., 2024).

Hypotheses

Causality orientations are considered distal motivational orientations, and academic PsyCap is considered a proximal psychological resource. Overall, the literature is well-integrated to support a strong justification for testing the autonomous and impersonal orientations as positive and negative predictors of academic PsyCap. It doesn't secure the ability to treat controlled orientation in the same way with the same degree of confidence. Based on this, we suggest the following hypotheses:

1. Autonomous causality orientation positively predicts academic PsyCap.
2. Impersonal causality orientation negatively predicts academic PsyCap.
3. Controlled causality orientation is related to academic PsyCap, but the direction should be treated as exploratory or weakly positive rather than confidently positive.

Material and Method

Sample

The cross-sectional survey research design was used in the present study. A convenience sampling technique was used to select the sample of (N = 300) students of the University of Sargodha. The students of 5-8th semesters of BS Honors (4-year program) and MSc (2-year program) were included in the main study. Both boys (n = 150) and girls (n = 150) from regular programs (n = 150)

and self-support programs ($n = 150$) were included in the main study. The average age of the students was 22.13 years with a standard deviation of 5.19 years.

Instruments

The study variables were operationalized through self-report instruments, which were chosen according to their theoretical relevance and use in previous studies. Emphasis was placed on measures which have been extensively used in a variety of cultural settings and which have not been heavily culturally biased. Also, all instruments used in the study had satisfactory psychometric properties. The participants received the following measures.

Academic PsyCap Measure

Academic Psychological Capital (Academic PsyCap) was measured as a second-order construct consisting of four first-order factors: academic self-efficacy, academic optimism, academic hope and academic resilience. These components were measured through four widely used instruments: the Perceived Self-Efficacy subscale of the Student Approaches to Learning Scale, the Life Orientation Test—Academics Scale, the Academic Hope Scale and the Academic Resilience Scale. The items of the four scales were rated on a common 5-point Likert scale ranging from 0 (Strongly Disagree) to 4 (Strongly Agree). Items were reverse-coded beforehand, and the total score calculated, with higher scores reflecting higher Academic PsyCap. This composite measure was comprised of 25 items and was found to have good internal consistency in the current study (Cronbach's $\alpha = .80$).

Perceived Self-Efficacy Subscale from Student Approaches to Learning Scale. The four item Perceived Self-Efficacy subscale of the Student Approaches to Learning Scale (SALS) (Marsh, et al., 2006) was used to measure academic self-efficacy. There are no reverse-scored items on the scale. Marsh et al. (2001) found acceptable internal consistency for the subscale ($\alpha = .87$).

Life Orientation Test-Academics Scale. The Academic optimism scale of the Life Orientation Test—Academics scale developed by Chang et al. (2011) was used to assess academic optimism. Items 2, 4 and 5 were reverse coded and the total score calculated. The scale was found to have acceptable internal consistency (Cronbach's $\alpha = .77$) by Chang et al.

Academic Hope Scale. The Academic Hope Scale (Shorey & Snyder, 2004) was used to measure academic hope with nine items. There are no reverse-scored items on the scale. The measure's developers reported adequate reliability for the measure (Cronbach's $\alpha = .79$).

Academic Resilience Scale. Academic resilience was measured with the six-item Academic Resilience Scale by Martin & Marsh (2006). There are no reverse-scored items on the scale. It has excellent model fit measures (CFI = .97, NNFI = .97) that support its construct validity. High internal consistency (Cronbach's $\alpha = .89$) was also reported by the authors.

General Causality Orientation Scale

Deci and Ryan (1985) developed the General Causality Orientation Scale. It is composed of 12 vignettes and 36 items. Each vignette explains a typical social or achievement-oriented situation. This was a 7-point Likert scale (1 = very unlikely to 7 = very likely). It consists of three subscores: autonomy, controlled, and impersonal subscales. The Cronbach's alpha of the total scale is 0.75, and test-retest reliability is 0.74 after 2 months. Items of autonomous orientation are 1c, 2a, 3c, 4a, 5a, 6b, 7b, 8c, 9c, 10b, 11b, and 12a ($\alpha = .90$). The item 1b, 2c, 3a, 4b, 5c, 6c, 7a, 8a, 9b, 10c, 11a, and 12b ($\alpha = .87$) represent controlled orientation. The items of impersonal orientation are 1a, 2b, 3b, 4c, 5b, 6a, 7c, 8c, 9a, 10a, 11c, and 12c ($\alpha = .84$). The items of each subscale were added to compute each subscale. No scale items are reverse-worded.

Procedure

Once formal approval from the Department of Psychology, University of Sargodha was received, data collection was started. While most participants were approached in their classrooms, the rest were recruited at various other places on campus, such as the library, canteen, and university grounds. Researcher rapport-building before administration of questionnaires was done to create a comfortable setting for participants and to ensure a true response. The volunteer nature of participation and the purpose and objectives of the study were explained. All participants were informed that the information would be kept confidential, and written informed consent was given before data collection. Afterwards, participants filled out a demographic information form and then the study questionnaires. The instructions for filling out the questionnaires were clear, and with the help of an assistant, the questionnaires were filled out whenever necessary without influencing the answers given. The average time taken to complete the questionnaires was about 45 minutes. At the end of the workshop, the participants were thanked for their valuable time and cooperation.

Results and Discussion

Before testing the hypothesized model, preliminary data screening was carried out to check the suitability of the data for parametric analysis. Missing values, outliers, and normality of the study variables were examined, and no cases were found to warrant exclusion from the main analysis. Descriptive statistics, reliability coefficients, and skewness values for all study variables are presented in Table 1, followed by bivariate correlations among the variables in Table 2. Path analysis was then used to test the proposed model linking causality orientations, CGPA, and age to academic psychological capital, and the standardized estimates along with model fit indices are reported in Table 3 and depicted in Figure 1.

The means, standard deviations, ranges, skewness, and alpha coefficients for each of the variables used in the current research are shown in Table 1. Mean scores indicate representation of their respective standard deviation scores, and there is not much of a difference between the actual and potential range, which indicates that restriction of range is not relevant for the present study. As seen in Table 1, all the instruments in their reliability are high, and this fact justified their use in the present research. With these distributions, skewness is in the range of .12 to .95, which were deemed normative and thus permitted the use of parametric tests of these distributions.

Table 1
Descriptive Statistics and Alpha Reliability Coefficient of the Scales (N = 300)

Scales	M	SD	Range		Sk ^a	α
			Actual	Potential		
Age	22.13	5.19	19-26	18-30	.20	
CGPA	2.85	0.44	1.96-3.96	0-4	.12	-
Academic PsyCap	64.25	9.81	21-82	0-100	-.62	.80
Autonomic Causality Orientation	61.13	9.18	34-79	12-84	-.67	.78
Controlled Causality Orientation	57.69	8.49	35-72	12-84	-.004	.70
Impersonal Causality Orientation	48.62	9.94	26-72	12-84	.04	.72

^aStandard error of skewness = .14

Results in Table 2 suggest that age was only negatively related to impersonal causality orientation, whereas CGPA was negatively related to impersonal causality orientation and positively related to academic PsyCap. had a significant negative correlation with self-handicapping and impersonal causality orientation, whereas it had significant positive relationships with academic PsyCap and academic hardiness. Academic stress had significant negative relationships with academic PsyCap and academic hardiness, whereas it had significant positive relationships with study engagement and all types of causality orientations. The three causality orientations were positively related to one another. Finally, academic PsyCap had positive relationships with autonomous and controlled causality orientations and a negative relationship with impersonal causality orientation.

Table 2
Pearson Correlations among Variables of the Present Study (N = 300)

Variables	1	2	3	4	5	6
1 Age	-	-.08	-.07	-.12	-.17*	-.08
2 CGPA	-	-	.02	-.04	-.38**	.30**
3 Autonomous Causality	-	-	-	.72**	.31**	.31**
4 Controlled Causality	-	-	-	-	.41**	.31**
5 Impersonal Causality	-	-	-	-	-	-.18*
6 Academic PsyCap	-	-	-	-	-	-

* $p < .01$; ** $p < .001$.

The findings reported in Table 3 generally supported the hypothesized model (see Figure 1). Specifically, autonomous and controlled causality orientations emerged as positive predictors of academic psychological capital, whereas impersonal causality orientation was a negative predictor. CGPA also contributed positively to academic psychological capital, whereas age was not significantly related to the outcome. Significant covariances among the exogenous variables indicated that the predictors were meaningfully associated with one another. Furthermore, the model exhibited an acceptable overall fit, indicating that the proposed structural model adequately represented the observed data.

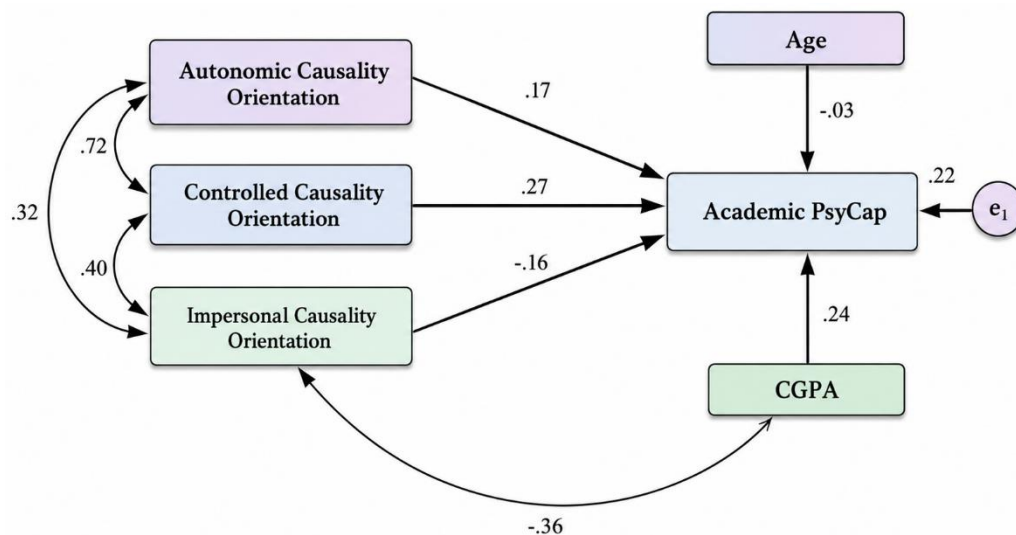


Figure 1 Path Diagram of the Proposed Model of the Present Study

Table 3
Standardized Estimates and Model Fit Indices for the Final Path Analysis Model (N = 300)

Parameter	Standardized Estimates	SE	p	95% CI
Direct Effects				
Autonomous Causality → Academic PsyCap	.17	.08	.02	.02 – .33
Controlled Causality → Academic PsyCap	.27	.08	.001	.11 – .42
Impersonal Causality → Academic PsyCap	-.16	.07	.045	-.30 – -.01
CGPA → Academic PsyCap	.24	.06	.001	.13 – .37
Age → Academic PsyCap	-.030	.05	.531	-.13 – .06
Correlations				
Autonomous Causality ↔ Controlled Causality	.72	.03	.001	.66 – .76
Autonomous Causality ↔ Impersonal Causality	.32	.05	.001	.22 – .41
Controlled Causality ↔ Impersonal Causality	.40	.05	.001	.30 – .49
CGPA ↔ Impersonal Causality	-.36	.05	.001	-.45 – -.27

Model fit: $\chi^2(6) = 17.14$, $\chi^2/df = 2.85$, CFI = .972, TLI = .95, GFI = .97, RMSEA = .059 (90% CI [.036, .124]), $p_{close} = .118$, SRMR = .054.

Discussion

The aim of the present study was to investigate if there is a relationship between academic PsyCap and a set of relatively stable dispositions that emerged from a literature review and were theoretically predicted to be related to academic PsyCap, namely, causality orientations and self-determination theory dispositions. The path model provided reasonably strong support for two of the three hypotheses and yielded a rather strong result for the third.

In line with Hypothesis 1, autonomous causality orientation was a positive predictor of academic PsyCap ($\beta = .17, p = .02$). This result is consistent with previous studies which have correlated autonomy orientation with positive academic experiences, higher self-confidence, and more mastery-oriented responses to failure (Wong, 2000; Koestner & Zuckerman, 1994). It is also consistent with the overall trend in the literature on PsyCap, which consistently highlights autonomous motivation as a mechanism connecting psychological resources to academic achievements (Datu et al., 2018; Liu & Huang, 2022). Students who feel their academic behavior is self-chosen rather than imposed are more likely to also have these positive feelings and attitudes in relation to their academic performance that are encompassed by academic PsyCap – hope, efficacy, optimism, and resilience. Overall, this is not a particularly surprising finding by itself, but perhaps the first empirical evidence that the two constructs are linked rather than merely co-occurring across different strands of research, as both Li et al. (2023) and Zhang et al. (2024) had pointed out.

The negative path from impersonal causality orientation to academic PsyCap ($\beta = -.16, p = .045$) also confirmed Hypothesis 2, and in all likelihood is the least surprising pathway in the model as a result of how the construct is defined. Impersonal orientation is associated with helpless response patterns, low confidence, and low self-esteem (Koestner & Zuckerman, 1994; Uruthirapathy & Dyke, 2022; Wong, 2000). Those traits were practically the inverse of the ones that PsyCap is supposed to measure, and thus a negative association was perhaps to be expected. The present data add only a direct measure of the size of that relationship and a statistically reliable measure of the coefficient, which is but modestly less favorable on average than for students who feel their academic outcomes to be largely in their control.

The outcome for controlled causality orientation is the one that is the furthest away from expectations. H3 stated only a weak, exploratory, or null relationship, due to mixed literature findings: Even though controlled motivation is linked to dropout intentions and has no link to achievement, controlled orientation is also associated with lower educational performance and commitment elsewhere (Datu et al., 2018; Hagger & Hamilton, 2020; Jeno et al., 2018; Wong, 2000). However, in the present sample, controlled orientation proved to be the strongest of the three predictors ($\beta = .27, p = .001$), even more than autonomous orientation. One interpretation of this is that, for the students in this sample, external stressors and internal demands (grades, family expectations, competitive educational environments) can be more of an activating agent rather than a draining agent – at least on a cross-sectional basis. It also needs to be noted that there was a strong correlation between the autonomous and controlled orientations ($r = .72$) in this data, suggesting that some of the controlled orientation effect may be confounded with the general tendency of engaged, motivated students to report favourably on both orientations concurrently: the autonomous and the controlled. Before either interpretation can be regarded as settled, it would have to be replicated.

Academic PsyCap was also positively predicted by CGPA ($\beta = .24, p = .001$), consistent with the rest of the literature which shows that academic PsyCap and academic performance are either causally related, or consequential, or a combination of both (Martínez et al., 2019; Sweet & Swayze, 2020; Adil et al., 2019). In contrast, the relationships between age and academic PsyCap were not significant in this sample ($\beta = -.03, p = .531$), indicating that in this relatively limited age range of university students, psychological resourcefulness is more likely to be affected by motivational dispositions and academic status rather than age per se.

Overall, these findings start filling the gap between the causality-orientation research that focuses on why students are oriented towards academic demands with volition, with pressure or helplessness, and the PsyCap research that focuses on the explanatory chain from such orientations to

students' hopes, efficacy, resilience, and optimism (Li et al., 2023; Pham et al., 2025). Generally, the pattern of two positive predictors and one negative is consistent with the expected pattern of adaptive psychological states (autonomy-supportive functioning) and maladaptive psychological states (controlled regulation) as posited by SDT (Hagger & Hamilton, 2020), but further indicates that the situation for controlled regulation might be more complex and contingent than SDT suggests.

Conclusion

The results show that university students' academic PsyCap is meaningfully related to their causality orientations, with autonomous and controlled orientations being positive predictors, and impersonal orientation being a negative predictor. The remaining positive contribution came from academic standing (indexed here by CGPA), and age did not seem to play a role in this sample. The study was a first in linking the causality orientations of self-determination theory to academic PsyCap, and it provides partial support for the notion that these two streams of research are related, but not parallel, constructs of student functioning. The results for controlled orientation are very surprising, especially for this subscale, and warrant further examination rather than acceptance.

Limitations

There are a few limitations to the present study that should be noted. First, the cross-sectional design is not suitable for making causal inferences, as it could be equally true that higher academic PsyCap influences the interpretation of control and pressure as it could be that control and pressure influence PsyCap. Second, the sample was collected using a convenience sampling technique at only one institution, the University of Sargodha, and therefore these findings can be generalized to other university students, disciplines, or educational systems with a limited degree of confidence. Third, every variable was assessed using self-report data, possibly leading to shared method variance, which could lead to some of the results observed, such as the high correlation between autonomous and controlled orientations. Fourth, the study did not measure any mediator (e.g., autonomous motivation, which has been found in other studies to mediate the relationship between PsyCap and performance; Liu & Huang, 2022), leaving the pathways between causality orientations and academic PsyCap somewhat of a black box. Lastly, the age group examined was relatively small, and this may account for the lack of significance in the case of age and may suggest that these relationships may be different for a wider age range of the student life course.

Recommendations

The results reported here would benefit from future research conducted on an experimental or longitudinal design, which would allow researchers to determine the direction of the relationships reported here, especially the surprisingly strong controlled orientation pathway. If the model could be reproduced in other institutions and/or subjects, and preferably in other nations, it would be possible to determine if this pattern is typical or not, and if not, what makes a particular institution succeed with it while others do not. Based on the high correlation between autonomous and controlled orientations observed in this study, researchers might also consider looking at how these orientations interact or combine in predicting PsyCap, instead of separately and independently. To better understand these associations, testing the mediating variables like autonomous motivation or BPS, which have been shown to mediate in related studies (Datu et al., 2018; Tamim et al., 2024), would help clarify the mechanisms behind these associations. Lastly, mixed methods would help bring together the quantitative model presented here and the qualitative description of student experiences of pressure, obligation, and control.

Implications

This study builds on previous reviews that highlighted that the two literatures had evolved largely in parallel, and theoretically this was one of the first direct empirical associations between the causality orientations of the SDT and academic PsyCap (Li et al., 2023; Zhang et al., 2024). There is also a tension to be explored in this one that should not be ignored: the idea that controlled regulation

is generally less adaptive than autonomous regulation does not appear to be as clear as it is with constructs such as achievement or dropout intention for psychological resourcefulness.

The findings could also be applied practically for academic advisors, counselors, and university administrators to enhance students' psychological resources. Considering prior research on autonomy-supportive teaching (Bureau et al., 2021), the interventions that have been linked to supporting autonomy (e.g., providing autonomy in course choice or making students feel responsible for academic objectives) are likely to increase hope, efficacy, optimism, and resilience. Concurrently, as impersonal orientation exhibited the strongest negative link with academic PsyCap, targeted interventions for students reporting that their academic outcomes are largely out of their control, such as mentoring, structured feedback, or skill building to regain a sense of control, could be an especially worthwhile investment. Although the positive association between controlled orientation and academic outcomes is fascinating, it is likely not a recipe for higher levels of academic pressure on students, as there is mixed evidence elsewhere on the relationship between controlled motivation and dropout risk (Jeno et al., 2018).

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