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# The Relationship between Unfinished Tasks and Perceived Distress and the Role of Positive Psychological Capital in a Student Sample Isabel Dorothee Gütges

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#### Abstract

*Background:* The experience of distress is especially prevalent in university students and has shown to be associated with several mental health problems that impact students' well-being and academic success. Previous research has indicated stress-relating factors such as financial burdens or deprivation of sleep to promote the perception of stress. However, the role of unfinished tasks on perceived stress in students has not been investigated so far. The aim of this research was to explore the relationship between unfinished tasks and perceived stress in a student sample. Thereby, it was investigated what role positive psychological capital played in this relationship, more specifically whether it moderated or mediated this relationship. *Methods:* A cross-sectional online survey design was employed on a convenient sample of university students (N = 129). The survey consisted of demographic questions as well as the Perceived Stress Scale (PSS), a questionnaire on unfinished tasks and the PsyCap questionnaire. To analyze the associations, Pearson correlations were conducted and the PROCESS macro of Preacher and Hayes was implemented to investigate possible moderation and mediation effects of positive psychological capital.

*Results:* Results indicated that a higher level of unfinished tasks leads to a higher level of perceived distress for students (r = .45, p = .00). In addition, positive psychological capital partially mediated but not moderated this relationship.

*Conclusions:* A feeling of having unfinished tasks for the week is moderately and positively related to perceived stress for students. In addition, the reduced personal resource of positive psychological capital seems to explain this relationship partially. The study extends knowledge on the impact of unfinished tasks and psychological capital in the organizational environment by generalizing it to higher education and gives practical implications for the development of positive interventions to help universities reduce study-related stress in their students.

## Key words

Unfinished tasks, perceived stress, positive psychological capital, university students

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### Introduction

Mental health problems and their individual and institutional impact have raised concern internationally, distinctively within the university populace (Shuchman, 2007). Research has shown mental health problems to be more prevalent among university students than within the general population (Stallman, 2010). In this regard, particularly mental distress was identified as a distinctive symptom experienced more by university students compared to the general population (Adlaf, Gliksman, Demers, & Newton-Taylor, 2001; Stallman 2010). Stallman and Shochet (2009) confirmed this finding with a comparison of mental health surveys that showed a higher proportion of distress in university health services than in the general populace and revealed university students as an at-risk population with regards to mental distress. Mental distress in university students has shown to be associated with interpersonal conflicts, sleeping problems and lower academic performance (Clark & Rieker, 1986, Khanna & Khanna, 1990; Linn & Zeppa, 1984). In addition, it can also decrease attention, reduce concentration, impact decision making, and reduce students' abilities to establish good relationships (Shapiro, Shapiro & Shwarwz, 2000). Thus, it becomes evident that the student population has shown to be distinctively vulnerable to mental distress and deserves special attention within this research domain.

It is crucial to investigate the mechanisms that underlie the perceived distress of students. The identification of possible factors may help universities to tackle the problem of distress in their students by restructuring curricula or designing interventions. Students face a multitude of (financial, academic, and interpersonal) obstacles daily (Beiter et al., 2015; Cooke et al., 2006; Pierceall & Keim, 2007; Vaez & Laflamme, 2008) which have shown to burden students' capacity to successfully cope, leading to mental distress (Hunt & Eisenberg, 2010; Kadison, & DiGeronimo, 2004; Lee, Olson, Locke, Michelson, & Odes, 2009). Research on stress has underlined the importance of recovery (e.g., sufficient sleep and breaks) from these stressors in order to successfully cope with it (Jansen, Kant, & van den Brandt, 2002; Sonnentag & Fritz, 2007). Recovery is the restoration process of ones' resources when the person is no longer exposed to the demanding stressor (Sonnentag & Fritz, 2007), whereby deficient recovery has shown to be associated with stress and evolving health problems (Geurts & Sonnentag, 2006; Jansen, Kant, & van den Brandt, 2002). Breaks between working hours or work free days within the week are important for recovery, whereas unfinished tasks have been identified to predict recovery problems operationalized as rumination and sleep disturbances (Syrek, & Antoni, 2014).

Research on unfinished tasks has been rare and so far only one study by Syrek and Antoni (2014) has investigated the role of unfinished tasks as a stressor in relation to stressrelated variables (e.g. rumination and impaired sleep) on an employee sample of the working population. Unfinished tasks have been defined as a "goal whose pursuit has been left incomplete" (Syrek & Antoni, 2014, p. 491). In their research on unfinished tasks, Syrek and Antoni (2014) argue that unfinished tasks pose a stressor because of a high level of unfinished tasks leading to internal tensions. These tensions are a consequence of the unfulfilled need for closure. Its fulfillment, however, is important for goal achievement. Thus, it has been theorized that unfinished tasks function as a stressor because they leave an unfulfilled closure experience that individuals have to cope with.

With regards to research on unfinished tasks and its link to perceived stress, a significant gap in the literature remains in terms of a comprehensive theory integrating unfinished tasks and its relations to perceived stress in students. A lot of research on stress points to the experienced inability to successfully cope with the stressor as an important source for distress. Lazarus and Folkman (1987), within their Transactional Model of Stress and Coping, defined stress as an outcome that results when individuals perceive the demands of an external event or circumstance to be beyond their perceived ability to cope. Therefore, stress evolves as a person-environment transaction. The way a stressor is appraised determines the individual's response to the stressor as perceived as threatening or not. Whether the stressor is perceived as threatening is determined by a multitude of factors including capacities, skills, and abilities, resources and norms (Mechanic, 1978). This first appraisal is followed by a second appraisal that involves the individuals' evaluation of the personal resources for addressing the perceived threat. The process of reappraisal is ongoing and involves continually reappraising both the nature of the stressor and the resources available for responding to the stressor. In case the individual perceives an inability to cope with the stressor due to a lack of resources, negative stress evolves. On the other hand, in case an individual perceives to have sufficient resources to cope with the stressor, he or she attempts to manage and deal with the source of the stressor.

### Unfinished study-related tasks and stress

It may seem evident that students have many unfinished study-related tasks to complete daily. Examples of possible student tasks could be class preparation, assignments, studying for tests and class attendance. To successfully complete their everyday tasks, students additionally have to structure and organize their time needed for these. A higher number of unfinished tasks for student could possibly lead to distress if the resources seem insufficient for completing the tasks in time.

Linking back to the theoretical model by Lazarus (1978), unfinished tasks pose the stressor, of which a high amount can be perceived as threatening. Thereby, a high amount of unfinished tasks rather leads to a perception of having insufficient resources to cope with these, which may lead to perceived stress. In addition, due to the high amount of unfinished tasks, reappraisal is often ongoing, which involves constant reevaluations of the nature of the stressor (amount of unfinished tasks) and the source available for responding to the stressor, which could lead to more stress. Research on students has shown that there is a link between physical stress responses and the nature of the stressor. The study by Gadzella (1994) has shown that pressure, a construct containing the amount or load of deadlines and work attempts, is linked to higher physical stress responses in female students. This could indicate a similar link for the level of unfinished tasks and distress in students. This association has not been investigated so far and hence, research is needed to give insights into the relation between unfinished tasks and perceived stress in students. This study intends to address this gap to offer insights and promote progress in the synthesis for this research domain.

## Positive psychological capital

Following from the theoretical explanation, the transactional model of stress and coping implies that specific cognitive processes determine an individual's beliefs about whether one has the resources to respond effectively to a stressor (Folkman & Lazarus, 1988; Lazarus & Folkman, 1987). There have been several investigations about these different cognitions that determine stress coping. Different studies have investigated related concepts as processes such as locus of control (Rotter, 1966), sense of coherence (Antonovsky, 1987), self-efficacy (Bandura, 1997), and stress-related growth (Scheier & Carver, 1985). With the recent introduction of positive psychology, which is "the study and application of positively oriented human resource strengths and psychological capacities that can be measured. developed, and effectively managed for performance improvement" (Luthans, 2002, p. 59), researchers have empirically examined the role of positive psychological capital. Positive psychological capital (PsyCap) is constituted of four specific psychological capacities, namely hope, resilience, optimism, and self-efficacy and has been defined as "a cognitive state that involves beliefs, attributions, and expectations about oneself in relation to a particular task or context" (Avey, Wernsing, & Mhatre, 2011 p. 4). Researchers have argued positive psychological capital to represent a factor related to the second order appraisal which is

operationally defined as "an individual's positive psychological state of development that is characterized by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive expectation (optimism) about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resilience) to attain success" (Luthans, Youssef, & Avolio, 2007, p. 3). It has been argued that psychological capital prohibits individuals from perceiving the demands of the external situation to be beyond their perceived ability to cope (second order appraisal). Through effective coping, this should result in lower stress. Additionally, because individuals with high levels of psychological capital have the needed capacities to successfully deal with their external environment, they are less likely to experience feelings of uncontrollability and unpredictability and therefore do not feel the necessary discomfort to the stressor that is needed for a possible distress development (primary appraisal) (Avey, Wernsing, & Mhatre, 2011). Thus, positive psychological capital is argued to influence the second order appraisal and possibly the primary appraisal of threat.

It becomes evident that positive psychological capital plays a crucial role in the perception and also in coping with stress. However, its specific role in the relation between unfinished tasks and perceived stress in students is not clear and thus, need to be investigated. Examining its role in the relationship between these variables could offer advantages for students in their perception and coping with stressors. Studies have shown that PsyCap as an overall construct can be developed in short training interventions with employees (Luthans et al., 2006; Luthans, Avey, & Patera, 2008). This could implicate that fostering positive psychological capital in universities may enable a new approach to help students build the critical resources needed in today's stress-filled university environment.

#### The current study

Previous research on perceived distress has shown that students are distinctively vulnerable to stress and are, therefore, in need of special attention in further investigations concerning this research domain. Despite the great amount of general research on stress and its consequences for health and well-being, research exploring the underlying factors, especially unfinished tasks is limited. Relating back to the level unfinished tasks students experience and the theoretical insights of an impeded closure experience it is suggested unfinished tasks to be a stressor. By combining these insights and the Transactional Model of Perceived Stress and Coping (Lazarus, 1978), the current study attempts to target this research

gap by investigating the relationship between unfinished tasks and perceived stress in students. In doing so, personal resources are taken into consideration that have been argued, when united, to play a role in the second order appraisal for the perception of efficient coping with the stressor. These resources optimism, hope, self-efficacy, and resilience compose the core construct positive psychological capital, a construct that has shown to better predict satisfaction than each individual concept by itself (Avey et al., 2011) and might be better understood when representing a core underlying construct in this research. The goal is to create an increased understanding of the role of unfinished tasks in relation to perceived stress and the role of positive psychological capital in students to support universities tackle the problem of distress in their students by restructuring curricula or developing interventions.

In order to investigate a possible relationship between unfinished tasks and perceived stress and the role of positive psychological capital in this relation, cross-sectional survey data will be used to assess the students' perceptions on these variables. Due to the fact that no previous research exists to hypothesize about the relations, formulations of research questions in an explorative manner seem to be appropriate:

*RQ 1: Is a higher level of unfinished study-related tasks related to a higher level of perceived distress in students?* 

RQ2: Is the relationship between unfinished tasks and perceived distress in students moderated by positive psychological capital? In other words, is the relationship between unfinished tasks and perceived distress stronger for students that score lower on positive psychological capital than for students that score higher on positive psychological capital?

RQ 3: Is the relationship between unfinished tasks and perceived stress mediated by the students' positive psychological capital? In other words, can this relationship between a higher level of unfinished tasks and a higher level of perceived distress in students be explained by a lower level of positive psychological capital?

### Methods

### **Participants**

In total, 172 participants of the University of Twente and other Universities were recruited for the study. Participants were recruited via personal invitations, social networks (e.g. Facebook and Instagram), and an online study participation system named SONA. In SONA, students of the Behavioral, Management and Social science Faculty (BMS) of the

University of Twente could receive test subject hours as compensation for their efforts. All participants confirmed an online informed consent after they were given general information about the study and clarified about their right to withdraw at any moment. The BMS ethics committee approved the study. The exclusion criteria were not being a student and being below 18 years of age.

Table 1 displays the general demographic characteristics of the 129 students whose data were suitable for this study. 43 participants were excluded for not being a student or because of missing data in the questionnaire. The mean age of the suitable sample was 22 years with a range from 18 to 29 years. Most of the participants were German students that were studying something else than Psychology or Communication science. In average participants were studying in their third year. Furthermore, most participants were students of the Bachelor phase (85.9%) in comparison to the master phase (for more details see Table 1).

# Table 1

Mean Characteristics of the Sample

		All students
Characteristic	Category	(N=129)
Age, years (SD)		21.84 (1.73)
	<b>P</b> 1	
Gender, n (%)	Female	80 (62)
Nationality, n (%)		
	Dutch	4 (3.1)
	German	104 (80.6)
	Other	21 (16.3)
Studies, n (%)		
	Psychology	48 (37.2)
	Communication science	6 (4.7)
	Other	75 (58.1)
Years of study, (SD)		2.96 (2.16)
Phase of study, n (%)		
	Bachelor (B) year 1	29 (22.5)
	B2	20 (15.5)
	B3	32 (24.8)
	B4 or higher	30 (23.3)
	Master (M) year 1	9 (7.0)
	M2	7 (5.4)
	M3 or higher	2 (1.6)

### Materials

**Sample characteristics and other constructs.** As part of a larger research project at the faculty of Psychology, Health and Technology of the University of Twente, an online questionnaire of 81 items was constructed which was predicted to take approximately 15 to 20 minutes. This questionnaire was used to map the participants' demographic characteristics (gender, age, nationality, student status, and highest educational level), level of unfinished tasks, as well as the dependent variable perceived stress in the last week. In addition, it targeted constructs such as rumination, self-efficacy, conscientiousness, and positive psychological capital. This study will solely focus on positive psychological capital in relation to perceived stress. Language of the questionnaire was English and it was made available to the students via a link.

Perceived Stress. In order to measure the dependent variable perceived stress, the Perceived Stress Scale (Cohen, 1983) was used. The Perceived Stress Scale is a self-report inventory intended to measure perceived individual stress levels in aspects of one's life as uncontrollable, unpredictable and overloading. The original English Version has been validated with mainly college students and workers (Roberti, Harrington, & Storch, 2006) and has shown to have reliability of  $\alpha = .93$ . Correlational studies have supported sufficient validity of the instrument. For instance, perceived stress was related to greater vulnerability to stressful life-event-elicited depressive symptoms and number of days without drinking problems (Khalili, Ebadi, Tavallai, & Habibi, 2017). The version in this study was adapted to measure perceived stress in the past week instead of in the past month (as the original scale intends). Therefore, every item was adapted to ask about the feelings and thoughts of the previous week. With regards to validity for the adapted version, principal component analysis revealed all items loading on one factor. This is in line with the original scale measuring one construct. Thus, the current scale seems to have sufficient validity. In addition, the adapted scale had internal consistency reliability of  $\alpha = .90$  and was, therefore, a suitable scale for measuring perceived stress in the last week. This scale contained 10 items for example "In the last week, how often have you been upset because of something that happened unexpectedly?" or "In the last week, how often have you felt nervous and "stressed"?", measuring the construct of individuals' perceived stress of the last week. Participants were asked to respond to each question on a five-point Likert scale ranging from 0 ="never" to 4 ="very often", indicating how often they have felt or thought a certain way within the past week. The scores range between 0 and 40 with higher scores indicating higher perceived stress. These scores were obtained by reversing responses to the four positively stated items

(items 4, 5, 7, and 8) and then summing across all scale items (See Appendix A for the Perceived Stress Scale).

**Unfinished Tasks.** The variable Unfinished Tasks was measured using the questionnaire generated within their study by Syrek, Weigelt, Peifer, & Antoni, (2017). This scale contained the 6 items "I have not finished important tasks that I had planned to do this week.", "I have not finished a large amount of due tasks this week.", "I have not completed this week's urgent tasks.", "I have not even started with important tasks, I wanted to fulfill this week", "I need to carry many of this week's due tasks into the next week", "I have not started working on urgent tasks that were due this week") which were answered on a five-point Likert scale ranging from 1 = "strongly disagree" to 5 = "strongly agree" (Appendix B). Students were asked to consider their tasks of the past week when answering the questionnaire. The scores were obtained by summing across all scale items. Scores range between 6 and 30 with a higher score indicating a higher degree of unfinished tasks. The scale by Syrek et al. (2017) had reliability of  $\alpha = .93$ . The current research confirmed the internal consistency of the measurement scale with internal consistency reliability of  $\alpha = .82$ .

**Positive Psychological Capital.** The construct Positive Psychological Capital was measured with the PsyCAp Questionnaire (PCQ) by Liran and Miller (2019). The original questionnaire was developed by Luthens et al. (2007) to measure PsyCap as a general positive resource of state-like nature in an occupational context but adapted by Liran and Miller (2019) to fit the University context. This PsyCap student-scale consists of 24 items with a 5point Likert scale ranging from 1 = "strongly disagree" to 5= "strongly agree". Four six-item subscales reflect the four capacities self-efficacy (items: 1, 6, 10, 21, 24), hope (items: 2, 7, 12, 15, 20, 23), optimism (items: 5, 9, 11, 14, 17, 19) resilience (items: 3, 4, 8, 13, 18, 22). Examples of items are "I feel confident analyzing a long-term problem to find a solution" (self-efficacy), "There are lots of ways around any problem" (hope), "I usually take stressful things at my studies in stride" (resilience), and "When things are uncertain for me within my studies I usually expect the best" (optimism) (See Appendix C for the whole PsyCap scale). Scores of the PCQ range from 24 to 120, with a higher sum score of all items indicating higher levels of PsyCap. The scores were obtained by reversing responses to the three negatively stated items (9, 17, and 22) and then summing across all scale items. This scale has shown to have overall internal consistency reliability of  $\alpha = .89$ . The current research confirmed the overall internal consistency reliability of the measurement scale  $\alpha = .90$ .

#### Procedure

The participants received a link from the researcher that they had to click on in order to be redirected to the first page where the participants were reminded of their rights (e.g. that they could withdraw from the study at any time) and informed what would be done with their data. In addition, they were provided with information about the purpose of the study which was to find out about the relationship between unfinished study-related tasks and perceived distress in students by taking into account possible associated variables. Lastly, they were provided with the request for informed consent.

The participants were then directed to the survey. The survey consisted of a questionnaire where they first had to answer demographic questions (age, gender, nationality, year and type of study, student status), questions about their perceived stress in the previous week, as well as questions about different variables (Unfinished Tasks, Perceived Distress, followed by the Psychological Capital Questionnaire, scales assessing rumination as a trait and as a state variable and a scale assessing Conscientiousness. After completion of the main questionnaire, the students were asked to indicate their level of understanding the questions of the survey in order to screen for possible outliers and finally thanked for their participation in the research.

The survey was composed in a way that every item was forced to be responded to with one answer in order to assure complete data sets for each respondent. The Facebook and WhatsApp accounts of the researchers were used to recruit students not studying at the University of Twente. Additionally, the questionnaire was made accessible via the SONAsystem of the University of Twente, which is available for psychology students and communication science students. The participation in the research was granted with 0.5 SONA credits.

#### **Design and Analysis**

The design of the research was cross-sectional. From the 170 initial participants, 42 participants were removed for not being students or because of missing data in the questionnaire. Consequentially, the final sample suitable for analysis consisted of 128 participants for the variables unfinished tasks and perceived stress and 120 participants for positive psychological capital.

To analyze the data, IBM SPSS Statistics 24 was used. Before starting to conduct the analysis to examine the research questions, descriptive statistics including means, standard deviation, skewness, kurtosis and Cronbach's alpha for all three variables were computed.

Next, it was investigated whether the variables were normally distributed. The normality tests Shapiro-Wilk did not show significant results for the variables unfinished tasks (p = .07) and positive psychological capital (p = .06) due to p > 0.05. Thus, the distributions of these two variables were normal. Moreover, the same test of normality showed significant results in the distribution of perceived stress, indicating non-normality for this variable. The skewness and Kurtosis for all variables are depicted in Table 2.

Further, Pearson correlations were computed between all variables (RQ 1). To circumvent the problem of non-normality of perceived stress, correlation results were based on 5000 bootstrap samples. For the Pearson correlations, the effect sizes were interpreted at .30 (medium effect) and .50 (large effect). The statistical significance was set at p < .05 and p < .001.

Furthermore, interaction and indirect effects were tested using the multiple linear regression approach of the PROCESS macro developed by Hayes and Preacher (2014). First, to test whether positive psychological capital moderated the relationship between unfinished tasks and perceived stress (RQ 2), interaction effects were tested with unfinished tasks as independent variable and perceived stress as dependent variable. Then, it was analyzed whether the variable positive psychological capital mediated the relationship between unfinished tasks and perceived stress (RQ 3), again with unfinished tasks as independent variable and perceived stress as dependent variable. The results for the main effect of unfinished tasks on perceived stress (Model 1) were taken from the results-output of the mediation analysis since these results are not given in the moderation analysis when using the PROCESS macro. Lastly, in order to bypass the concern of non-normality, the models were analyzed with a bootstrap sampling of 5000. This procedure is supported by Hayes and Preacher (2014). Accordingly, moderation and mediation analyses can be applied with more confidence in case of non-normality by applying bootstrap sampling. In these analyses, moderation/mediation is significant if the 95% Bias Corrected and accelerated confidence intervals for the interaction/ indirect effect do not include 0 (Preacher & Hayes, 2004).

#### Results

Table 2 depicts the descriptive statistics and zero-order correlations for the three variables of the moderator and mediator model. Generally, participants did not score high on the variable unfinished tasks. The mean score M = 16.33 (5.55) indicated a medium to low score in the possible range between 6 and 30. With regards to the variable perceived stress, the mean score M = 18.71 (7.40) showed that in general participants scored medium to low

when considering the possible range 0 to 40. Finally, the mean score of M = 83.17 (12.44) indicated that participants, in general, scored higher for the variable positive psychological capital considering the range of possible scores between 24 and 120 of the scale PsyCap.

## Table 2

Scales	Ν	М	SD	Skew- ness	Kurto- sis	1.	2.	3.
1. Unfinished tasks	129	16.33	5.55	06	53	(.82)		
2. Perceived Stress	129	18.71	7.40	.31	46	.45**	(.90)	
3. PsyCap	120	83.17	12.44	34	1.28	38**	58**	(.90)

Descriptive Statistics and Correlations

*Note*. Entries on the main diagonal are Cronbach's alpha for each scale. Pearson's r was calculated to examine the associations between all variables. Results are based on 5000 bootstrap samples.

\*\*p < .001 (2-tailed).

#### **Correlation analysis**

Pearson correlation was conducted to test research question 1 (Table 2). The moderately strong correlation between unfinished tasks and perceived stress was found to be significant and positive. With regards to research question 1, participants that scored high on unfinished tasks also scored high on perceived stress or vice versa.

Moreover, unfinished tasks correlated significant and negative with positive psychological capital and this correlation showed to moderately strong. Thus, participants that scored higher on unfinished tasks, scored lower on positive psychological capital and vice versa.

Finally, a significant, negative and strong correlation between positive psychological capital and perceived stress was found. Thus, participants that scored higher on positive psychological capital scored lower on perceived stress (see Table 2).

#### **Moderation analysis**

Firstly, the relationship between unfinished tasks and perceived stress (Model 1) was tested. As shown in table 3, the analysis of the main effect of unfinished tasks on perceived stress revealed that unfinished tasks significantly predicted the level of perceived stress.

Unfinished tasks explained a significant proportion of variance in the scores of perceived stress,  $R^2 = .19$ , F(1, 118) = 28,32, p < .001. Therefore, 19 % of a person's perceived stress can be accounted to one's level of unfinished tasks.

In order to answer research question 2, positive psychological capital was as a potential moderator of the association between unfinished tasks and perceived distress. The variance explained by the proposed model (Model 2) was significant ( $R^2$  = .39, F(3, 116) = 24,99, p < .001). As shown in table 3, unfinished tasks were significantly associated with PsyCap and perceived stress.

### Table 3

Perceived stress Predicted from Unfinished tasks (Model 1) and Unfinished tasks and PsyCap (Model 2)

			Model 1			Model 2			
Predictor	R <sup>2</sup>	b	р	LLCI ULCI	R <sup>2</sup>	b	р	LLCI	ULCI
Unfinished tasks**	.19	.59	.00	.37, .81	.39	.35	.00	.14,	.56
PsyCap**						28	.00	38,	18
Interaction									
(Unfinished tasks						.00	.61	02,	.01
x PsyCap)									

*Note.* LLCI and ULCI represent the lower and upper limit of the 95% confidence interval. \*\* $p \le .001$ 

However, model 2, which includes the interaction term, did not account for significantly more variance than unfinished tasks and positive psychological capital did by themselves ( $\Delta R^2 = .00$ , F(1, 116) = .26, p = .61) with a confidences interval not excluding zero. Thus, regarding the second research question, positive psychological capital did not significantly moderate the relationship between unfinished tasks and perceived stress. Figure 1 illustrates the absence of any interaction effect.



*Figure 1*. Interaction Plot of Model 2 (N = 120).

The figure depicts that positive psychological capital did not moderate the relationship between unfinished tasks and perceived stress. The lines of the graph are parallel and do not cross. Thus, the relationship between unfinished tasks and perceived stress does not differ between different levels of positive psychological capital.

Although positive psychological capital did not moderate the relationship between unfinished tasks and perceived stress, the results indicated a significant main relationship between positive psychological capital and perceived stress. Therefore, this finding allowed further analysis for a possible mediation effect of positive psychological capital.

## **Mediation analysis**

With regards to the main effect (Model 1), the results indicated that unfinished tasks were significantly related to perceived stress (see Table 3). Unfinished tasks explained a significant proportion of variance in the scores of perceived stress ( $R^2 = .19$ , F(1, 118) = 28,32, p < .001).

## Table 4

Mediation analysis with PsyCap as mediator

Parameter	R <sup>2</sup>	b	$SE_b$	t	Sig.	95% Confidence	
						Interval	
Effects	-					Lower	Upper
						Bound	Bound
From unfinished tasks to PsyCap	.14				.00		
(Constant)		97.23	3.37	28.83	.00	90.55	103.91
Unfinished tasks		84	.19	-4.4	.00	-1.22	46
From unfinished tasks and	.39				.00		
PsyCap to perceived stress							
(Constant)		36.87	4.83	7.63	.00	27.30	46.44
Unfinished tasks (Direct effect		.35	.11	3.40	.00	.14	.59
of X on Y)							
PsyCap		29	.05	-6.16	.00	38	19
Indirect effect of X on Y		.24	.09			.09	.43

*Note*. N=120

Table 4 reports the direct effects of the independent variable unfinished tasks, the mediator positive psychological capital and the dependent variable perceived stress, as well as the indirect effect of positive psychological capital (Model 2). Unfinished tasks were significantly associated with positive psychological capital. Furthermore, the association between PsyCap and perceived stress was also significant. When controlling for the indirect effect, the association between unfinished tasks and perceived stress was still significant (direct effect) which could indicate partial mediation. Combined, unfinished tasks and positive psychological capital explained 39% of the variance in the scores of perceived stress. Finally, the indirect effect of the mediator positive psychological capital was significant because the bootstrap confidence interval did not include zero and therefore, predicted the relationship between unfinished tasks and perceived stress. With regards to the third research question, the relationship between unfinished tasks and perceived stress was significantly mediated by positive psychological capital. These results are depicted in Figure 2.



*Figure 1.* Overview of the results. Model of unfinished tasks as a predictor of perceived stress, mediated by positive psychological capital. The value in parentheses indicates the indirect effect. \*\*p<.001.

#### Discussion

The purpose of this study was to explore the relationship between unfinished tasks and perceived distress in university students and whether positive psychological capital moderated or mediated this relationship. This study represents the first cross-sectional analysis of unfinished tasks in relation to stress. Taken together, the results indicate that a higher level of unfinished tasks is moderately related to a higher level of distress and that positive psychological capital partially explains this relationship. This means that students that perceive less unfinished tasks also perceive less stress, which can be partially explained by their personal resource of positive psychological capital. However, this relationship did not appear to be moderated by positive psychological capital, which means that the relationship did not differ between different levels of positive psychological capital.

The results demonstrated a positive relationship between unfinished tasks and perceived stress which indicates that students who have a higher level of unfinished tasks, also perceive a higher level of distress. This relationship has not been investigated so far and this study is the first one to demonstrate this present association. Nevertheless, this result is in

line with the argumentation of previous research by Syrek and Antoni (2014) that have investigated unfinished tasks to be associated with stress-related concepts in employees. In their research, they demonstrated that unfinished tasks work as a stressor by impairing sleep through constant rumination about the tasks that were left undone. Additionally, they have indicated rumination and sleep disturbances also to be associated with distress, which indicates a similar possible explanation for the relationship between unfinished tasks and perceived stress.

Besides the mentioned main association between unfinished tasks and perceived stress, a strong negative correlation between positive psychological capital and perceived stress was found in the present study. This indicates that a higher level of perceived stress strongly relates to individuals lower score of positive psychological capital. This result has been investigated in previous research only within an organizational context (Abbas & Raja, 2015; Avey et al., 2011). Therefore, this outcome expands the findings from an occupational to an academic context by stressing that positive psychological capital plays an important role in coping with stress for university students. This finding contributes to the insight that today's students need to draw from positive resources, such as positive psychological capital, to help them cope with stress.

In addition, the findings did not show a significant moderating role but a partially mediating role of positive psychological capital on the positive relationship between unfinished tasks and perceived stress in students. This means that students who have a higher level of unfinished tasks perceive more stress because of a lower level of positive psychological capital. Due to the lack of research on unfinished tasks, the specific role of positive psychological capital on the main relationship had hitherto not been clear. The present results indicate positive psychological capital to have a partially explaining role in the relationship between unfinished tasks and stress which is in line with previous research that has shown a higher level of positive psychological capital to explain a reduction in stress (Avey et al., 2011).

Furthermore, the mediating role of PsyCap in the relationship between unfinished tasks and perceived distress is also in accordance with the findings of other researchers that underline personal resources, as those that found PsyCap (self-efficacy, hope, optimism, and resilience), to hinder the appraisal of subjective work or college demands as stressing. It has been demonstrated in different organizational studies that employees, who possess personal resources such as self-efficacy and optimism, believe that they are able to meet the demands that they are facing, and experience lower stress and more life satisfaction (Storm, 2003,

Xanthopoulou et al. 2007; Schaufeli, Salanova, 2007). Regarding the study-related environment, it has been shown that self-efficacious students were more likely to feel capable of meeting the demands of university life than were low self-efficacious students who perceive those demands as threatful. The appraisal of these demands to be threatful was associated with higher levels of perceived distress in students (Chemers, Hu, and Garcia, 2001). In addition, it has been underlined that individuals possessing personal resources take active steps to remove or rearrange stressors (Rothmann & Storm, 2003). These studies support the results of the present study in the light of the proposed Transactional Model of Stress and Coping by underlining these personal resources to aid reducing the appraisal of work demands as not having the resources to effectively cope (second order appraisal).

This study provided several strengths. First of all, the study showed to be quite reliable due to the chosen measurement instruments and sample size. The internal consistency for all measures on the important variables unfinished tasks, perceived stress, and positive psychological capital was high, which supports high reliability of the study. In addition, the study fulfilled the criterion to conduct relative reliable research by collecting the data of more than 100 suitable students. Moreover, the sample of the present study was rather heterogeneous with regard to gender, nationality, and field of study. Thus, the sample of the present study supports generalizability of the results, which means that the results are broadly applicable to many different kinds of students. Lastly, the demographic baseline characteristics age and gender were not found to be correlated with the measures on the three main variables perceived stress, unfinished tasks, and PsyCap. Therefore, it can be concluded that these specific baseline measures do not confound the results.

However, some limitations of this research should be taken into account when interpreting the results. Although the study benefitted from low costs due to the research design of a cross-sectional online survey, the data was measured at only one point in time, which does not allow to make causal inferences (Levin, 2006). Therefore, conclusions about unfinished tasks to have an effect on perceived stress cannot be made and this circumstance should be considered in expanding this line of research. For example, it is possible that those that score lower on positive psychological capital, do so because they already experience more distress and thus, perceive a higher level of unfinished tasks, rather than vice versa. Thus, causal ordering cannot be concluded and it is not possible to exclude possible alternative explanations for this relationship due to the applied research design. A future longitudinal study can provide more convincing evidence on the direction of the relationship. In order to diminish the problem of causality, an experimental procedure is recommended for future investigations, which facilitates confident estimations of the order of concepts, as well as exclusions of alternative explanations regarding this relationship. This would allow the interpretation of causal conclusion that a higher of level unfinished tasks accounts for more perceived stress in students and that positive psychological capital explains this effect.

Moreover, the present study collected data via questionnaires that represent participants' cognitive evaluations and feelings in a primarily subjective manner. Future research should, therefore, develop tools for collecting such data by a more objective procedure. Measuring physical stress symptoms or indicating the nature and number of unfinished tasks in terms of a diary study or interview, for instance, could also offer more insights into the constructs of interest specifically for students. Therefore, it is recommended for future research to consider rather objective and direct measures or qualitative research such as interviews, to receive more qualitative information about how unfinished tasks can influence stress and how positive psychological capital accounts for this effect.

Lastly, using experimental or rather qualitative procedures to gain insights into the temporal precedence and nature of constructs would also allow more insights into the specific role that positive psychological capital plays in relation to these concepts. The present results support the previous demonstration that positive psychological capital explains a reduction in stress since students high in PsyCap have the perception of being able to efficiently cope with these unfinished tasks (second appraisal). However, in order to gain more insights into the primary appraisal, future research is suggested to test whether PsyCap also predicts the perception of unfinished tasks as threatening. This would allow more confident conclusions of PsyCap to play a role in the appraisal of unfinished tasks as a threat (primary appraisal). Hence studies that, for example, focus on the development of PsyCap in individuals are suggested to not only analyze how PsyCap interventions may influence the actual stress experienced by students at universities but also how it affects the appraisal of the stressors such as unfinished tasks.

This study contributed to a new field of research by gathering important insights to open the perspective on unfinished tasks as a crucial stressor with the aim of drawing conclusions for practice and further research. The results give evidence that unfinished tasks do not only seem to be a stressor in work-related context as previous research has indicated but also in a study-related context. The average level of unfinished tasks in the current sample was even higher than in the previous study by Syrek et al. (2014) that focused on employees

in an occupational context. This underlines the importance of especially attending to university students within this new field of research. Due to the fact that a disconcerting drift in university student health is the reported increase in students stress (Gillespie et al. 2001; Robotham & Julian, 2006; Sax, 1997; Stallman, 2010), it is crucial to observe trends regarding stress in students and develop targeting interventions to decrease the level or higher perception of unfinished tasks.

In addition, this research lends support that positivity matters to enhancing individuals' lives in terms of stress and academic performance. Since the state like nature of PsyCap indicates openness to development of this capacity (Luthans, 2002), research on training/intervention development is needed to enhance this personal resource in students. Interventions may support students' perception of having the capability to cope with unfinished tasks and other study-related stressors in general. Additionally, positive training could facilitate stress-management and coping and will not only benefit the students but also universities that are interested in their students' well-being and academic progress.

Implications for university educators include the development of a more positive outlook administered in the classroom by incorporating elements of PsyCap in their education. For instance, the facilitation of a more optimistic explanatory style, more constructive envisioning of the future, and lower levels of distressed thinking, that students scoring high on PsyCap involve in naturally, may help less psychologically resilient students. Luthans et al. (2006) have validated the development of PsyCap in online and short training classroom interventions. Thus, strengthening capacities as Seligman (1998) in his book "learned optimism" suggests, may help students that naturally score lower on positive psychological capital with their threat perception of stressors like unfinished tasks or to better cope with stress.

Intervention suggestions to tackle the perception of uncompleted tasks have been indicated to focus on setting sub-goals that can be achieved in order to facilitate the feeling of closure when these smaller sub-goals are met (Masicampo, & Baumeister, 2011; Syrek, Weigelt, Peifer, & Antoni, 2017). This way the inner tension may be reduced and students feel rather to be able to cope with the stressor. Similar exercises are executed in training interventions for PsyCap that include activities to enhance the components efficacy, optimism, hope, and resilience. These training interventions also focus on working toward goal achievement using "stepping methods" of identifying smaller sub-goals as a way to reap the benefits of even modest achievements to enhance self-efficacy and optimism (Avey, Luthans, & Jensen, 2009). Hence, stepwise sub-goal interventions could combat stress by facilitating goal achievement, which is important for the appraisal of unfinished tasks and the development of personal capacities.

In conclusion, despite the mentioned limitations, the results from this study support the theory that the rather newly recognized concept of unfinished tasks relates to perceived stress and that this relationship is partially explained by PsyCap rather than depending on different levels of positive psychological capital. Particularly, these findings suggest the need to focus future research and practice on how interventions like the "sub-goal approach" may be a valuable part of students' stress management in universities. Completely eliminating student stress is neither realistic, nor desirable. Helping students effectively to cope with stress, however, will be a critical objective for Universities.

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## **Appendix A: Perceived Stress Scale**

The questions in this scale ask you about your feelings and thoughts during the **last week**. In each case, you will be asked to indicate how often you felt or thought a certain way.

[0] Never, [1] Almost never, [2] Sometimes, [3] Fairly often, [4] Very often

- 1. In the last week, how often have you been upset because of something that happened unexpectedly?
- 2. In the last week, how often have you felt that you were unable to control the important things in your life?
- 3. In the last week, how often have you felt nervous and "stressed"?
- 4. In the last week, how often have you felt confident about your ability to handle your personal problems?
- 5. In the last week, how often have you felt that things were going your way?
- 6. In the last week, how often have you found that you could not cope with all the things that you had to do?
- 7. In the last week, how often have you been able to control irritations in your life?
- 8. In the last week, how often have you felt that you were on top of things?
- 9. In the last week, how often have you been angered because of things that were outside of your control?
- 10. In the last week, how often have you felt difficulties were piling up so high that you could not overcome them?

## Appendix B: Items for unfinished tasks

In the following statements, consider the tasks of you had to do for your study at the university in the **past week**. Please check the answer that is most appropriate.

[1] Strongly disagree, [2] Somewhat disagree, [3] Neither agree nor disagree, [4] Somewhat agree, [5] Strongly agree

- 1. "I have not finished important tasks that I had planned to do this week.",
- 2. "I have not finished a large amount of due tasks this week."
- 3. "I have not completed this week's urgent tasks."
- 4. "I have not even started with important tasks, I wanted to fulfill this week."
- 5. "I need to carry many of this week's due tasks into the next week."
- 6. "I have not started working on urgent tasks that were due this week."

## Appendix C: Psychological Capital Questionnaire

The following statements describe how you may think about yourself right now. Please indicate by means of the options how strongly you agree or disagree with each statement from your perspective as a higher education student.

[1] Strongly disagree, [2] Somewhat disagree, [3] Neither agree nor disagree, [4] Somewhat agree, [5] Strongly agree

- 1. I feel confident analyzing a study-related long-term problem to find a solution
- 2. If I should find myself in a jam in the course of my studies, I could think of many ways to get out of it
- 3. I usually take stressful things related to my studies in my stride
- 4. I feel I can handle many study-related issues simultaneously
- 5. When things are uncertain for me as a student, I usually expect the best
- 6. I feel confident in representing my position at meetings related to my studies
- 7. At present I'm eager to meet study goals I have set myself
- 8. I can deal with study-related difficulties because I've experienced difficulty before
- 9. If something related to my studies can go wrong, it will
- 10. I feel confident in contributing to discussions about my study domain
- 11. I approach my studies as if "every cloud has a silver lining"
- 12. There are lots of ways around any study-related problem
- 13. If I have to, I can be "on my own," so to speak, in handling my study matters
- 14. I always look on the bright side of things regarding my studies
- 15. Right now I see myself as being pretty successful in my studies
- 16. I feel confident helping to set study-related targets/goals
- 17. With regard to my studies, things never work out the way I want them to.
- 18. I usually manage study-related difficulties one way or another
- 19. I'm optimistic about what will happen to me in the future as it pertains to my studies
- 20. I can think of many ways to reach my current study goals
- 21. I feel confident contacting other students to discuss problems
- 22. When I have a study-related setback, I have trouble recovering from it and moving on
- 23. At present, I am meeting the study goals that I have set myself

24. I feel confident presenting information to other students or my lecturers