



# The Role of Positive Meta-Cognition and Negative Meta-Cognition on Exam Anxiety of Postgraduate Students

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## Abstract

The present study was for the purpose of testing the role of positive meta-cognition and negative meta-cognition in test anxiety of postgraduate re-examination in Hangzhou Normal University. 206 college students from different cities, who attended postgraduate re-examination in Hangzhou Normal University, were recruited in China. The participants were asked to complete a set of questionnaires to measure their positive meta-cognition, negative meta-cognition and test anxiety before re-examination. The major results of the study were given as follows: model analysis suggested that positive meta-cognition could predict test anxiety more than negative meta-cognition. What's more, PMCEQ and PMCEQ1 could predict SAI and TAI of test anxiety, whereas MCQ4 and MCQ2 of negative meta-cognition predicted SAI of test anxiety, and MCQ4 of negative meta-cognition predicted TAI of test anxiety. The results showed that positive meta-cognition played a more role in test anxiety than negative meta-cognition.

## Subject Areas

Education, Psychology

## Keywords

Test Anxiety, Positive Meta-Cognition, Negative Meta-Cognition, Postgraduate Re-Examination

## 1. Introduction

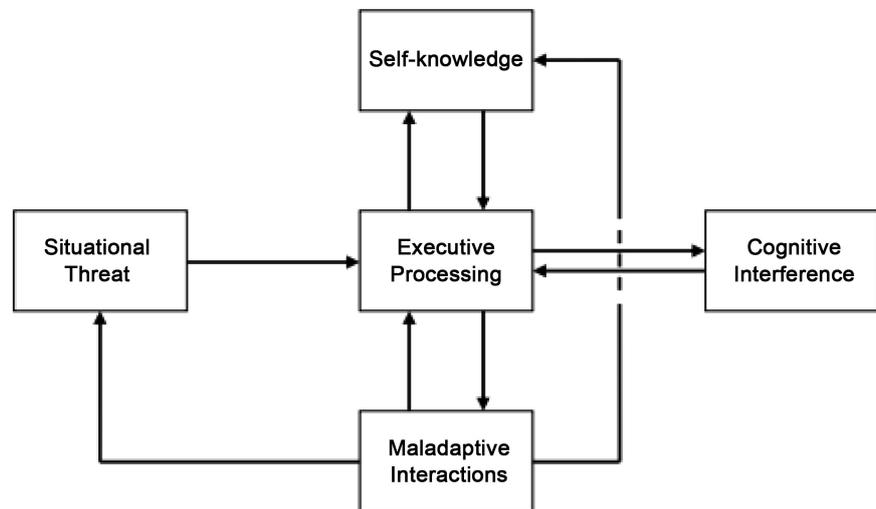
Anxiety is a negative emotion that everyone has ever undergone and is one of the most familiar concepts. However, as for students, test anxiety is one of the

commonly most experienced emotions in a long academic career. In the 1930s, there appeared some studies about test anxiety. Test Anxiety (TA) refers to the individual's reaction to the social evaluation in the test context, including widespread worry, psychological disorder and psychological tension. It is an anxiety associated with the specific situation and a contextual trait anxiety (Carver *et al.*, 1976) [1]. It is a psychological state that, characterized by worry, is motivated by particular test-oriented situation, is subject to individual cognitive estimation, personality tendency and other physical and mental factors and is manifested through different levels of emotional response in a defensive or evasive manner (Zhangkui Yuan, 2004) [2]. Test anxiety shows that it is characterised as self-suspicion, helplessness and self-accusation (Spielberger, C.D., 1970) [3].

In recent years, more and more empirical studies focus on the role of meta-cognition in the development and maintenance of anxiety. A mass of studies have indicated that meta-cognition is related to negative emotions such as anxiety (Cartwright Hatton, 1997 [4]; Teasdale, 1999 [5]; Wells, A. & Daxies, M., 1994 [6]; Wells A., 1995 [7]; Ha, Jung & Ahn, Hyun IE, 2013 [8]; Bailey and Wells, 2015 [9]; Juan Ramos Cejudo, J. Martin Salguero, 2017 [10]). Meta-cognition was first proposed by John Flavell in 1976. He thought meta-cognition was composed of knowledge and belief as well as awareness and monitoring of cognitive processes (Flavell, 1979) [11]. On the basis, Wells and Matthews (1994 [12], 1996 [13]) presented maladaptive meta-cognition played a core role in the development and maintenance of emotional disorders. The self-regulating executive function (S-REF) model was proposed and provided research evidence for the meta-cognition model of emotional disorders and theoretical basis for the practical study of anxiety. In the model, there is a sort of thinking style called the cognitive attentional syndrome (CAS) that is a continuous thinking including worry/rumination, threat monitoring and mal-adaptive coping strategies. The study has shown that mal-adaptive meta-cognition (CAS) is positively correlated to state/trait anxiety (Iraq and Tosun, 2008 [14], Spada *et al.*, 2010 [15]). What's more, there exists a relationship between pathological anxiety and generalized anxiety disorder between meta-cognitive monitoring and psychological disorder (Wells, Carter, 2001) [16]. Negative meta-cognition is in connection with negative emotions such as anxiety and stress, and mal-adaptive meta-cognition have a direct effect on negative emotions (anxiety and stress) (Moneta and Wells, 2008) [17].

Test anxiety, as a negative emotional response triggered by individual cognitive appraisal, has a close relation with maladaptive meta-cognition. The self-referent executive processing model has been constructed (see **Figure 1**), which contains three systems (executive regulatory processes, self-beliefs and maladaptive situational interactions) and is used to explain cognitive processes of test anxiety and processing mechanism of internal information (Zeidner and Matthews, 2005) [18].

As can be seen from the figure above, test anxiety develops based on interactions of three systems which are self-knowledge, executive processing and



**Figure 1.** The self-referent executive processing (S-REF) model of test anxiety (Zeidner and Matthews 2005).

maladaptive situational interactions according to the self-referent executive processing model. From a long run, test anxiety is maintained by maladaptive interactions. The maladaptive cognitive beliefs would affect individuals' monitoring of psychological state, make them more likely to choose negative coping strategies and pay more attention to personal shortcomings (such as the ability is insufficient and inadequate preparation, etc.). And this worry is not controllable, dangerous and can lead to their failure (*i.e.*, led to a concern about concerns), causing the anxiety. To reduce this worry, individuals usually would adopt some strategies, such as escape, delay, worry inhibition, however, in the end, these strategies failed, which led to increase anxiety, physical tension, lack of concentration, further strengthen anxiety mood. On account of the students of secondary school who are less use of effective coping strategies, the higher the level of worry on test anxiety is, the lower the scores of examination is (David. W Putwain 2016) [19]. A recent study on test anxiety further examines the model through probing into the relation of control (a self-belief construct), emotional regulation by means of suppression and reappraisal (an executive process) and self-handicapping (a maladaptive situational interaction) and the relation between cognitive test anxiety (worry) and subsequent examination performance on a high-stakes test. The result shows that the key to incorporate test anxiety interventions is to increase control and reduce self-handicapping (David W putwain, 2018) [20].

The above studies suggest that negative metacognition can control test anxiety, but there is another positive perspective which can more effectively improve test anxiety. Beer believes that individuals should resort to more positive and higher-level coping strategies, namely functional or adaptive meta-cognition to improve negative emotions. Adaptability refers to the ability to function well in terms of self-regulation and mental health when faced with challenges (Beer, N., & Moneta, G. B., 2010) [21].

According to the adaptability of psychological functions, Nils-Beer divides meta-cognition into two categories: 1) mal-adaptive or negative meta-cognition; 2) adaptive or positive meta-cognition and further develops the positive meta-cognition and positive emotion questionnaire (PMCEQ) based on adaptive meta-cognition (Beer and Moneta, 2011) [21]. Adaptive metacognition believes that, in dealing with problems, due to the lack of positive aspects in mal-adaptive meta-cognition theory, the success of individuals cannot be fully explained. On account of the strategic requirements in different situations, successful decisions require meta-cognitive beliefs to help adjust S-REF activities, the initial emotional responses of interest and anxiety to challenges, and the reconstruction of feasible and flexible goals for specific types of meta-cognitive beliefs (Beer, N., & Moneta, G. B., 2011) [21]. Studies find that positive meta-cognition can predict coping styles, perception of stress and negative emotions (Beer, 2011 [22], Nils Beer, 2012 [23]). Besides that, both positive meta-cognition and negative meta-cognition have a better prediction in employment stress. In addition, the role of positive meta-cognition on employment stress is more than that of negative meta-cognition (Yunji Kim and Yooli Jun, 2015) [24].

At present, the research on test anxiety and meta-cognition focuses on the role of maladaptive or negative meta-cognition in test anxiety, the effect of adaptive or positive meta-cognition on test anxiety is unclear. What's more, previous studies on test anxiety mainly concentrated on primary and secondary school students. But it is also very important to pay attention to the negative emotions of college students and graduate students. As another turning point in life, the postgraduate entrance examination was rarely studied in terms of test anxiety of postgraduate entrance examination students. Therefore, this paper chose the students of postgraduate entrance examination as the object of study to explore the predictive role of positive and negative meta-cognition on test anxiety of the students.

## **2. Method**

### **2.1. Data Collection**

The data of the study were collected by paper surveys. On the day of attending re-examination, graduate students were asked to fill in the questionnaires voluntarily before the interview so that the leader could attain more objective information.

### **2.2. Participants**

236 Chinese graduate students (from 23 to 28 years old) who attended the re-examination of Hangzhou Normal University were recruited in the middle of the second semester in Mar. 2017, but 206 in 236 questionnaires were valid questionnaires. In this sample, 79% were female and 21% were male. 58% were from normal college and 42% were from non-normal college. Participants' subject category was divided into two kinds: liberal arts (75.2%) and science

(24.8%). Most participants belonged to non key college (96%), key college (4%). It can be seen from **Table 1**.

### 3. Instruments

#### 3.1. Positive Meta-Cognitions and Positive Meta-Emotions Questionnaire (PMCEQ)

The PMCEQ (Beer, N., & Moneta, G. B., 2010) [21] was developed to assess individual differences in adaptive meta-cognitive and meta-emotional beliefs when facing challenging or unpredictable situations. It measured the three traits described in the introduction, each measured by six items. 18 Items ( $\alpha = 0.834$ ) are scored on a 4-point scale ranging from 1 (*Do not agree*) to 4 (*Agree very much*). Items covered following three dimensions: PMCEQ1-Confidence in extinguishing perseverative thoughts and emotions (e.g.—In times of feeling in the dumps’ it’s hard for me to regulate my low mood. || ), PMCEQ2-Confidence in Interpreting Own Emotions as Cues, Restraining from Immediate Reaction, and Mind Setting for Problem Solving (e.g.—I can stop any negative thinking spirals’ and focus on what I can do in the situation. || ), and PMCEQ3-Confidence in Setting Flexible and Feasible Hierarchies of Goals (e.g.—I can easily divide important long-term goals into achievable and short-term sub-goals). The sub-scale scores of the study have internal consistency in the range of 0.70 - 0.82 and correlate with measures of trait intrinsic motivation. The internal consistency reliability of the total scores in this study was 0.834, which reached the ideal standard.

#### 3.2. Meta-Cognition Questionnaire-30 (MCQ-30)

MCQ-30 (Wells, A., & Cartwright-Hatton, S., 2004) [25], originally developed by Wells and Cartwright-Hatton, was to measure negative meta-cognition. The

**Table 1.** Students’ reports of descriptive statistics of demographic variables, test anxiety, positive meta-cognition, negative meta-cognition (N = 206).

variables	traits	frequency (n)	percent	M	SD
sex	female	163	79%	1.81	0.397
	male	43	21%		
major	literal arts	155	75%	1.41	0.503
	science	51	25%		
college category	normal college	119	58%	1.25	0.433
	non-normal college	87	42%		
school rank	non-key college	198	96%	1.99	0.120
	key college	8	4%		
test anxiety	-	206	-	1.94	0.435
positive meta-cognition	-	206	-	3.09	0.371
negative meta-cognition	-	206	-	2.38	0.323

MCQ-30 was comprised of 30 items ( $\alpha = 0.827$ ) to measure the maladaptive meta-cognitive traits which were made up of five dimensions: MCQ1-cognitive confidence (e.g.—I do not trust my memory.), MCQ2-positive beliefs (e.g.—Worrying helps me cope.), MCQ3-cognitive self-consciousness (e.g.—I monitor my thoughts.), MCQ4-uncontrollability and danger (e.g.—I could make myself sick with worrying.), and MCQ5-need to control thoughts (e.g.—I should be in control of my thoughts all of the time.). The items were scored a 4-point scale ranging from 1 (Do not agree) to 4 (Agree strongly). The internal consistency reliability of the total scale's scores in this study was 0.827, and that of sub-scale scores also reached the ideal standard.

### 3.3. State-Trait Anxiety Inventory (STAI)

STAI (Spielberger C.D., 1983) was originally compiled by Spielberger for the purpose that differentiated and appraised transitory anxiety disposition of anxiety state and personality trait. It was composed of two different subscales of anxiety types, including 40 items ( $\alpha = 0.951$ ). One is state anxiety (S-AI), the other is trait anxiety (T-AI). S-AI subscale consisted of 20 items ranging from 1 to 20, half of which were described as the items of negative emotions, the other items were the items of positive emotions. S-AI assessed mainly experience and feelings in a particular situation or in the situation of fear, tension, anxiety and neuroticism. T-AI assessed contained 20 items ranging from 21 to 40, which appraised more stable anxiety and intense personality trait. Eleven of the items were described as negative emotions, and the rest were positive emotions. Items of S-AI were scored on a 4-point scale ranging from 1 (completely without) to 4 (very obvious), half of which were reverse scoring, while items of T-AI were scored on a 4-point scale ranging from 1 (very obvious) to 4 (completely without), half of which were also reverse scoring. The internal consistency reliability of the total scale's scores in this study is 0.951, that of S-AI scale's scores 0.920, and that of T-AI scale's scores was 0.895, which reached the ideal standard.

## 4. Statistical Analysis

Firstly, all variables were analyzed by correlation analysis from a convenience sample of 206 graduate participants in China. Secondly, hierarchical regression analysis was applied. Sexes, subject categories, school rank and majors were analyzed by Univariate Analysis to control demographic variables.

## 5. Results

### 5.1. Descriptive Statistics

At first, descriptive statistics for demographic variables, test anxiety, positive meta-cognition, negative meta-cognition were displayed in **Table 1**. The participants responded averagely that test anxiety was 1.94 (SD = 0.435), positive meta-cognition was 3.09 (SD = 0.371), and negative meta-cognition was 2.38 (SD = 0.323). The sample contained 206 participants, 163 of whom were females, and

the remaining 43 of whom were males. The average college category was 1.25 (SD = 0.433), school rank was 1.99 (SD = 0.120) and major was 1.41 (SD = 0.503). Most participants were in the fourth year of college. A few participants came from white-collar workers. The results in **Table 1** showed that the mean score of positive meta-cognition was higher than that of negative meta-cognition.

## 5.2. Correlation Analyses

The Pearson Correlations were used to analyze correlations of all variables. The specific values can be found in **Table 2**. Results manifested that there existed statistically significant correlations between dependent variables, predictors, and all variables except for demographic variables. Test anxiety and all the dimensions of test anxiety were in significant negative relation to positive meta-cognition and all the dimensions, and significant positive correlation to negative meta-cognition and all the dimensions of test anxiety. Moreover, most dimensions of positive meta-cognition and all the dimensions of negative meta-cognition had a statistically negative correlation. Beyond that, the correlation coefficient of positive meta-cognition and test anxiety was  $-0.642$ , while the correlation coefficient of negative meta-cognition and test anxiety was  $0.485$ . It suggested that positive meta-cognition had a stronger correlation than negative meta-cognition with test anxiety. In other words, the strongest correlation of all appeared between test anxiety and positive meta-cognition, manifesting that graduate students who had more positive meta-cognition got lower level of test anxiety probably.

## 5.3. Regression Analysis

Stepwise regression analysis was applied to examine whether each trait of positive meta-cognition and each trait of negative meta-cognition predicted college students' test anxiety (SAI). The result of the best model manifested that PMCEQ, PMCEQ1, MCQ4 and MCQ2 could predict SAI of test anxiety (**Table 3**). Moreover, PMCEQ and PMCEQ1 had a stronger prediction than MCQ4 and MCQ2. It was known from **Table 3** in detail that PMCEQ could explain 33.8% of the variance in SAI of test anxiety ( $F(1,206) = 105.671, P < 0.001$ ), PMCEQ1 increased 2.1% on the basis of PMCEQ ( $F(2,206) = 58.471, P < 0.001$ ), MCQ4 increased 12% on the basis of PMCEQ and PMCEQ1 ( $F(3,206) = 50.565, P < 0.001$ ) and MCQ2 increased 1.4% on the basis of PMCEQ, PMCEQ1 and MCQ4 ( $F(4,206) = 40.300, P < 0.001$ ). PMCEQ, PMCEQ1, MCQ4 and MCQ2 co-jointly explained 43.4% of the variance in SAI of test anxiety. The regression equation was established as follows:  $y = -0.527x_1 - 0.014x_2 + 0.238x_3 + 0.180x_4 + 2.722$ , which represented that PMCEQ, PMCEQ1, MCQ4 and MCQ2 had a direct effect on SAI, and PMCEQ and PMCEQ1 had a larger effect than MCQ4 and MCQ2.

Stepwise regression analysis was applied to examine whether each trait of

Table 2. The correlation matrix of test anxiety, all the traits of positive meta-cognition and negative meta-cognition.

	MCQ	MCQ5	MCQ4	MCQ3	MCQ2	MCQ1	PMCEQ	PMCEQ3	PMCEQ2	PMCEQ1	STAI	TAI	SAI	Major	Schoolrank	Subject	Sex
Sex	0.028	-0.004	0.011	-0.022	0.088	0.035	-0.013	0.009	-0.020	-0.023	-0.023	-0.022	-0.023	-0.159*	0.043	-0.116	1
Subject	-0.037	-0.049	-0.049	-0.028	-0.050	0.032	0.036	0.001	-0.023	0.116	-0.033	-0.025	-0.039	-0.113	-0.118	1	1
Schoolrank	0.034	-0.008	0.094	0.028	0.013	-0.007	-0.098	-0.106	-0.080	-0.034	0.032	0.002	0.057	0.100	1	1	1
Major	-0.105	-0.014	-0.064	-0.137*	-0.106	-0.089	0.010	-0.044	0.089	-0.022	0.064	0.039	0.082	1	1	1	1
SAI	0.465**	0.300**	0.528**	0.369**	0.445**	0.180**	-0.584**	-0.443**	-0.437**	-0.478**	0.971**	0.875**	1	1	1	1	1
TAI	0.474**	0.307**	0.577**	0.365**	0.418**	0.192**	-0.662**	-0.531**	-0.489**	-0.515**	0.966**	1	1	1	1	1	1
STAI	0.485**	0.313**	0.569**	0.379**	0.446**	0.192**	-0.642**	-0.501**	-0.477**	-0.512**	1	1	1	1	1	1	1
PMCEQ1	-0.571**	-0.463**	-0.569**	-0.449**	-0.492**	-0.297**	0.606**	0.303**	0.179*	1	1	1	1	1	1	1	1
PMCEQ2	-0.076	0.085	-0.255**	-0.088	-0.142*	0.159*	0.816**	0.656**	1	1	1	1	1	1	1	1	1
PMCEQ3	-0.142*	-0.009	-0.265**	-0.134	-0.148*	0.031	0.872**	1	1	1	1	1	1	1	1	1	1
PMCEQ	-0.320**	-0.145*	-0.456**	-0.275**	-0.322**	-0.031	1	1	1	1	1	1	1	1	1	1	1
MCQ1	0.724**	0.468**	0.435**	0.496**	0.544**	1	1	1	1	1	1	1	1	1	1	1	1
MCQ2	0.836**	0.518**	0.610**	0.643**	1	1	1	1	1	1	1	1	1	1	1	1	1
MCQ3	0.847**	0.579**	0.654**	1	1	1	1	1	1	1	1	1	1	1	1	1	1
MCQ4	0.830**	0.575**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
MCQ5	0.765**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
MCQ	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

\*p < 0.05, \*\*p < 0.01.

**Table 3.** Results of regression analysis of each trait of positive meta-cognition and negative meta-cognition to STAI.

Items	STAI		
	$\beta$	$\Delta R^2$	F
constant	3.064	-	-
PMCEQ	-0.564	0.409	142.992***
PMCEQ1	-0.040	0.430	78.443***
MCQ-4	0.324	0.502	69.954***

\* $p < 0.05$ , \*\*\* $p < 0.001$ .

positive meta-cognition and each trait of negative meta-cognition predicted college students' test anxiety (STAI). The result of the best model manifested that PMCEQ, PMCEQ1 and MCQ4 could predict STAI of test anxiety (Table 3). Moreover, PMCEQ and PMCEQ1 had a stronger prediction than MCQ4.

In order to further verify positive meta-cognition and negative meta-cognition had an effect on each style of test anxiety (STAI), stepwise regression analysis was applied to examine whether each trait of positive meta-cognition and each trait of negative meta-cognition predicted college students' test anxiety (TAI). The result of the best model manifested that PMCEQ, PMCEQ1 and MCQ4 could predict TAI of test anxiety (Table 4). Moreover, PMCEQ and PMCEQ1 had a stronger prediction than MCQ4. It was known from Table 4 in detail that PMCEQ could explain 43.5% of the variance in TAI of test anxiety ( $F(1,206) = 159.086$ ,  $P < 0.001$ ), PMCEQ1 increased 1.8% on the basis of PMCEQ ( $F(2,206) = 85.944$ ,  $P < 0.001$ ), MCQ4 increased 8.4% on the basis of PMCEQ and PMCEQ1 ( $F(3,206) = 77.115$ ,  $P < 0.001$ ). PMCEQ, PMCEQ1 and MCQ4 co-jointly explained 52.7% of the variance in TAI of test anxiety. The regression equation was established as follows:  $y = -0.574x_1 - 0.023x_2 + 0.326x_3 + 3.082$ , which represented that PMCEQ, PMCEQ1 and MCQ4 had a direct effect on TAI, and PMCEQ and PMCEQ1 had a larger effect than MCQ4.

## 6. Discussion

Our hypotheses were reported in this study. Positive meta-cognition measures predicted test anxiety more than negative meta-cognition did. These results were in sympathy with precious literature (Nils. Beer, 2011). However, differently, results of the study showed that PMCEQ and PMCEQ1 of positive meta-cognition and MCQ4 and MCQ2 of negative meta-cognition predicted test anxiety, and not all the traits of positive meta-cognition and negative meta-cognition predicted test anxiety among a sample of postgraduate re-examination. Moreover, compared with MCQ4 and MCQ2 of negative meta-cognition, PMCEQ of positive meta-cognition was a stronger predictor of SAI and TAI from above results.

*PMCEQ, PMCEQ1, MCQ4, MCQ2 and SAI.*

**Table 4.** Results of regression analysis of each trait of positive meta-cognition and negative meta-cognition to SAI.

Items	SAI			
	$\beta$	$\Delta R^2$	F	VIF
constant	2.722	-	-	-
PMCEQ	-0.527	0.338	105.671***	1.632
PMCEQ1	-0.014	0.359	58.471***	2.005
MCQ4	0.238	0.420	50.565***	1.935
MCQ2	0.180	0.434	40.300***	1.679

\*p < 0.05, \*\*\*p < 0.001.

According to the above results, PMCEQ, PMCEQ1, MCQ4 and MCQ2 predicted SAI of test anxiety among a sample of postgraduate re-examination. Postgraduate re-examination was one of the most important events in life, which involved a turning point in one's career. In this important moment, worrying and scaring something was out of control, so it could integrate that MCQ4 and MCQ2 were predictors of SAI of test anxiety. Compared with MCQ4 and MCQ2, the reason PMCEQ was a stronger predictor of SAI of test anxiety may be that regulating themselves and confronting setback positively was more effective than losing control of emotions and worrying worse outcomes. So as long as they faced the difficulties confidently, problems would be solved, that is why PMCEQ1 was also a predictor of SAI of test anxiety.

*PMCEQ, PMCEQ1, MCQ4, and TAI.*

Throughout **Table 3** and **Table 4**, PMCEQ, PMCEQ1 and MCQ4 predicted TAI of test anxiety among a sample of postgraduate re-examination. What's more, MCQ4 of negative meta-cognition predicted TAI of test anxiety. The result was basically consistent with precious literature (Wells A., 1995) that negative meta-cognition and most traits (MCQ1-cognitive confidence, MCQ2-positive beliefs about worry, MCQ4-uncontrollability and danger and MCQ5-need to control thoughts) of negative meta-cognition had a significantly positive correlation with negative emotions (anxiety and depression). Nevertheless, test anxiety would be reduced if individuals in bad and dangerous situation applied in a positive and confident way. S-REF model thought that uncontrollability and danger (MCQ4) had a closely relation with negative emotions, and in the meta-cognitive component of the model, the core of the meta-cognitive component was uncontrollability and danger, which, to a certain extent, verified the view that uncontrollability and danger a cognitive cause of increasing unhealthy emotions. That is why PMCEQ, PMCEQ1 and MCQ4 could be predictors of TAI of test anxiety. It was in line with the view in this study where we found that if the individual solved difficulties in a positive and confident way, it could prevent the rise of test anxiety caused by uncontrollability and danger.

In addition, comparing **Table 4** with **Table 5**, we found that PMCEQ, PMCEQ1, MCQ4 and MCQ2 could predict SAI and TAI of test anxiety, TAI of test anxiety was predicted more than SAI of test anxiety. The result was

**Table 5.** Results of regression analysis of each trait of positive meta-cognition and negative meta-cognition to TAI.

Items	TAI			
	$\beta$	$\Delta R^2$	F	VIF
constant	3.082	-	-	-
PMCEQ	-0.574	0.435	159.086***	1.628
PMCEQ1	-0.023	0.453	85.944***	1.908
MCQ4	0.326	0.527	77.115***	1.523

\* $p < 0.05$ , \*\*\* $p < 0.001$ .

basically consistent with precious literature (Carver, Charles S.1976) that test anxiety was a contextual trait anxiety. Meanwhile, it also stated SAI of test anxiety conducted by a particular situation caused TAI of test anxiety.

At last, it is necessary to consider some limitations of the study before the research can be generalized. Firstly, our sample was mainly composed of women. That may be because most women were inclined to choose Normal University. Secondly, when the participants filled in questionnaires, there existed subjectivity only in the form of questionnaires. In the future, researchers should adopt the way of questionnaires combined with experiments so that it can make results more persuasive. Despite these limitations, we believe the research can provide a step forward for meta-cognition about anxiety in a more specific way.

## 7. Conclusion

In summary, the results were in line with the hypothesis of research. Whether it is positive meta-cognition or it is negative meta-cognition, both could predict test anxiety. In addition, positive meta-cognition played a role in test anxiety than negative meta-cognition, which can help some in need adjust their mentality positively so that they can deal with difficulties instead of escaping problems and controlling thought.

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## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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