



The Mediating Effect of Motivation and Competitive Experience Variables on The Effect of Mental Toughness and Competitive Anxiety on Athletes

Dwi Yan Nugraha^{1✉}, Randy S. Salman², Bambang Pratama J³, Muhammad Gilang Al Fayed⁴, Aidil Ikhran⁵, Muhammad Irfan Bahrin⁶, Fadila Khumaera Ridwan⁷, Nurlifiana S⁸

Department of Psychology, Universitas Negeri Makassar, Makassar, Indonesia¹²³⁴⁵⁶

Department of Psychology, Universitas Indonesia, Depok, Indonesia⁷

Department of Psychology, Universitas Bosowa, Makassar, Indonesia⁸

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Abstract

The purpose of this study is to examine whether mental toughness can predict competitive anxiety through the motivation and competitive experience possessed by athletes. Respondents involved were 175 athletes who were students (93 female and 82 male). Path analysis reports that there are direct and indirect effects of the measured variable. Our results show the influence of mental toughness on competitive anxiety. However, the influence of exerted is a positive effect that if athletes have good mental toughness, then their competitive anxiety increases as well. Researchers suspect that there are other constructs that accompany mental toughness in influencing competitive anxiety in athletes. The mediation model also shows that athletes who have high motivation and competitive experience significantly mediate the influence between mental toughness and athlete's competitive anxiety. Concluded that mental toughness, motivation, competitive experience, have a reciprocal relationship from competitive anxiety. In addition, the results of this study also reported that mental toughness, motivation, and competitive experience are able to predict competitive anxiety.

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✉ Correspondence address :

E-mail: dwi_nugraha97@yahoo.com

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INTRODUCTION

Anxiety experienced by athletes both before and during the competition can lead to undesirable results, including athletes' performance that is not optimal (meta-analysis studies, see Woodman & Hardy, 2003; Craft, et al., 2003). Competitive anxiety can occur if an athlete considers a competitive situation as a threat, and gives rise to poor emotional response (Patel, 2010; Englert & Bertrams, 2012). Although the anxiety experienced by athletes in the competition is considered normal, but if it exceeds the normal threshold, it can interfere with performance, motivation, and victory (Hanton, O'Brien, & Mellalieu, 2003; Grossbard, et al., 2009; Patel, 2010). This negative impact is very important for athletes, where if the level of anxiety in the high competition can damage their performance (Gucciardi, et al., 2010). Although there has been a lot of information related to the role of anxiety competing in cognitive and physical performance, the process underlying it cannot be reported thoroughly in sports. The research model conducted by Gould, Greenleaf, and Krane, (2002) report that competitive anxiety arises from negative interpretations of an athlete, causing anxiety in competing.

One variable that has the potential to identify processes that affect the interpretation of arousal and anxiety is mental toughness. Mental toughness is an individual quality to create a high level of objective and subjective performance regardless of stress, difficulties, and challenges (Gucciardi, et al., 2015). For athletes who have high mental toughness will be better able to manage negative emotions, thereby reducing anxiety when competing (Jones, et al., 2007) and having the results of adaptive interpretation, giving rise to positive and negative emotions, including competing anxiety (Crust, 2008; Clough, Earle, & Sewell, 2002). Other studies also report that mental toughness can affect the use of strategies in managing emotions for athletes (Crust & Azadi, 2010) and if athletes have high mental toughness, then they tend to experience positive emotions and experience less negative emotions in competitive situations (Mahoney et al., 2014). For example, cricket athletes who have positive mental toughness will experience low levels of anxiety in competing (Gucciardi & Jones, 2012). Therefore, athletes who have a high level of mental toughness can be assumed to be able to predict low levels of anxiety in competing athletes.

Another factor that can explain the difference in competing anxiety is the motivation possessed by the individual himself. According to

the perspective of the theory of self-determination (Deci & Ryan, 2012, 2002), satisfaction and failure for athletes are influenced by three basic psychological needs namely competence, interconnection, and autonomy can affect motivation experienced and determined by individuals, and this has an impact on emotional experiences for athletes. Research has shown that the construct of motivation is more controlling (Gillet, et al., 2013) and inhibits basic psychological needs (Bartholomew, et al., 2011) when it comes to increasing negative effects. In a competitive situation, controlling the motivational construct can be related to increased anxiety in competition. This is because controlled motivation is often accompanied by extrinsic goals for athletes so that they are unable to meet basic psychological needs. In addition, extrinsic forms of motivation can be in the form of wins, comparisons with other athletes, and performance targets that if confidence in self ability is low it can cause high stress, fear of being evaluated negatively, and performance is not optimal (Deci & Ryan, 2002). Thus, if an athlete experiences autonomous and controlled motivation, or a combination of both, it can have an impact on an athlete's anxiety when competing.

To test the effect of motivation between mental toughness on competitive anxiety, motivation is conceptualized as an orthogonal variable, in which all types of motivation can arise in athletes (Deci & Ryan, 2002). This concept is based on studies involving athletes who report that low levels of extrinsic motivation do not always accompany high levels of intrinsic motivation (Ntoumanis, 2002) and types of motivation can be interactive or additive (Vlachopoulos, et al., 2000). Thus, it can be said that athletes with high intrinsic motivation if they have controlled motivation such as regulation or introjections. Thus, athletes with different motivational profiles will reflect different combinations of extrinsic or intrinsic motivation. Several previous studies have reported that different motivational profiles can predict self-determination theory (Yli-Piipari, et al., 2009; Wang, et al., 2002). Based on theoretical developments, mental toughness can predict athletes' competing anxiety through motivation. For example, there is evidence of a positive and significant effect between mental toughness on competitive anxiety (Nugraha, 2020). If you see the results reported in this study are certainly very different from the theoretical concepts that have been confirmed before, that if athletes have good mental toughness then their competitive anxiety will be decreased (Jones, et al., 2007; Crust, 2008; Clough, Earle, & Sewell, 2002). Therefore,

researchers suspect there are other constructs that mediate this, such as motivation.

In addition, a factor that can also mediate the effect of mental toughness on competitive anxiety is the experience of athletes. Hardy, Jones, and Gould (1999) suggested that the experience of competition can affect athletes' anxiety responses in the face of competition. The ability to control anxiety is a very important factor, which must be possessed by athletes to produce a peak performance. The ability to control anxiety is derived from the experiences of athletes in dealing with matches. Hardy, Jones, and Gould (1999) report the results of research from Fenz and Epstein regarding the effect of experience on anxiety responses. The results of the study showed that experienced athletes had good control skills in controlling anxiety symptoms compared to novice athletes, so athletes could reach peak performance. Then experienced athletes feel anxiety only before competing compared to inexperienced athletes. Pero, et al. (2013) argue that one component of mental toughness is a competitive experience. Athletes who have experience competing will be more confident and show lower levels of anxiety than competing anxieties.

At present there are no studies investigating the mediating effects of motivation and competing experience variables on the effect of mental toughness and anxiety on athletes, so we are interested in exploring more deeply, with seven questions, namely: 1) Are competitive anxiety interrelated with mental toughness, motivation, and competitive experience? 2) Is mental toughness, motivation, and competitive experience able to predict competitive anxiety for athletes? 3) Will athletes with high motivation report low levels of competitive anxiety? 4) Will athletes with high competitive experience report low levels of competitive anxiety? 5) Will athletes with high mental toughness exhibit low levels of competitive anxiety? 6) Will athletes with high mental toughness report high motivation? 7) Will athletes with high mental endurance report high competitive experience? 8) Will motivation mediate the negative influence of mental toughness and competitive anxiety? 9) Will competitive experience mediate the negative influence between mental toughness and competitive anxiety?.

METHODS

Subjects in this study were 175 student-athletes in tertiary institutions (private and public) in Makassar, which consisted of soccer, badminton, volleyball, basketball, swimming, takraw soccer,

karate, athletics, and table tennis with age range 18 to 22 years, obtained using cluster random sampling techniques.

The researcher gave questionnaires to respondents who were interested in being involved in our study, and all respondents gave written consent. The research questionnaire was carried out at the location of the game for about 10 minutes. The results of the questionnaire that they are working on will be stored in a confidential folder.

Mental Toughness Questionnaire 48 (MTQ48) was adapted from the scale Vaughan, et al., (2017) consisting of six factors, namely challenge, commitment, emotion control, life control, confidence ability, and interpersonal confidence, with 48 items and using 5-point Likert type. Validity was measured using the CFA method with χ^2 values ($3153 < 5513.736$), RMSEA (.043 < .05), with a confidence interval of 90% that moves from (.040 to .045), standardized root mean residual (.046 < .05), TLI (.938 > .90), and CFI (.947 > .90). Reliability is measured by the omega method with a value of .84.

Sport Anxiety Scale-2 (SAS-2) was adapted from the scale Smith, et al., (2006) with factorial validity (CFA) values for each factor, namely: somatic (.82), worry (.84), and concentration disruption (.75), and this scale has 15 items in a 5-point Likert rating. The suitability of the model on the three factors shows that the value of χ^2 (303.12), NNFI (.95 > .90), CFI (.95 > .90), and RMSEA (.65 > .05), with a confidence interval value of 90% that moves from (.057 to .073). These results report that the criteria for the goodness of fit have been met. Reliability is measured by the Cronbach Alpha approach with a total scale score of .91. Referring to the results of validity and reliability that this scale already has reliable psychometric characteristics.

Sport Motivation Scale-II (SMS-II) was adapted from the scale Pelletier, et al., (2013) which consisted of 18 question items using a 7-point Likert assessment model. This scale consists of six subscales with reliable psychometric characteristics (Schaefer, et al., 2016). For motivated subscales ($\alpha = .81$), external regulations ($\alpha = .74$), introjected regulations ($\alpha = .70$), identified regulations ($\alpha = .82$), integrated regulations ($\alpha = .80$), and intrinsic motivation ($\alpha = .88$).

Competition experience is measured based on the following question: "How often do you take part in the competition?" Respondents were grouped into five categories namely never, 1 time to match, 2 times to match, 3 to 4 times to match, and > 5 times to match.

The data obtained were analyzed using the

path analysis approach using the help of the computer program AMOSS version 22.00 which aims to see the effects of direct and indirect effects of the measured variables and with the Sobel test (online) software that aims to see the significance of the effect of the indirect effect of the variables which is observed. In addition, this study also measures the relationship of each variable by the Pearson correlation method and also looks at the effect of each variable measured using SPSS software version 22.00 with multiple regression analysis methods, at a significance level of 5% ($p < .05$) and 1% ($p < .01$).

RESULTS AND DISCUSSION

There were 175 athletes involved in this study (Table 1). The majority of athletes involved in this study were women (52.2%) who were 19 years old with the number of matches participated in 1 time ($M = 2.05$; $SD = .96$). The first finding (Table 2) in this study is aimed at answering the first research question that confirms that mental toughness is related to competitive anxiety ($r = .365$; $p = .000$), motivation to competitive anxiety ($r = .366$; $p = .000$), competitive experience against competitive anxiety ($r = .188$; $p = .013$), and age against competitive anxiety ($r = .210$; p

$= .005$). However, gender variables have no relationship with competitive anxiety for athletes.

Table 1. Description of respondent statistics (n = 175)

Variable	N	%	M	SD
Gender				
Male	82	46.1	1.53	.50
Female	93	52.2		
Age				
18 years old	58	32.6	2.03	.98
19 years old	71	39.9		
20 years old	33	18.5		
21 years old	8	4.5		
22 years old	5	2.8		
Competitive Experience				
Never	54	30.3	2.05	.96
1 matches	75	42.1		
2 matches	33	18.5		
3 to 4 matches	8	4.5		
> 5 matches	5	2.8		

Abbreviations: M = Mean (The average value of the respondent); SD = Standard deviation.

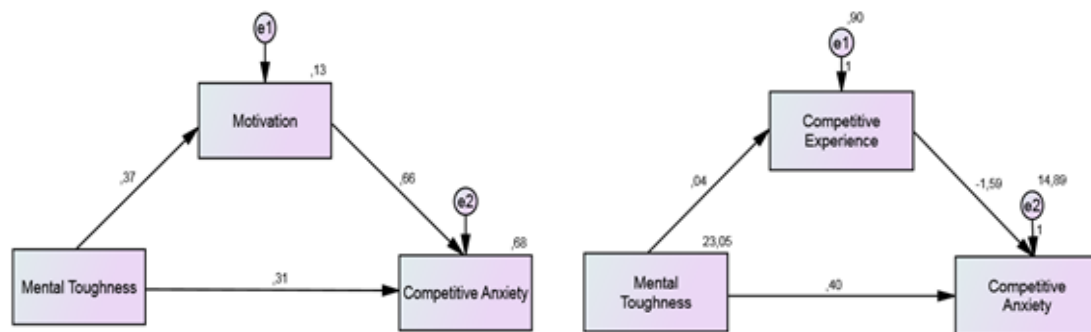


Figure 1. Path analysis procedure

Table 2. Pearson correlations of major variables

Variable	M	SD	MT	CA	MO	CE	Gender	Age
MT	85.52	4.81	1					
CA	32.97	4.46	.365**	1				
MO	34.02	3.50	.366**	.778**	1			
CE	2.06	.97	.188*	-.264**	-.216**	1		
Gender	1.53	.50	.042	.040	-.077	.293**	1	
Age	2.03	.98	.210**	-.225**	-.204**	.988**	.314**	1

Note. * $p < .05$; ** $p < .01$.

Abbreviations: MT = Mental toughness; CA = Competitive anxiety; MO = Motivation; CE = Competitive experience.

Table 3. Results of the multiple regression analysis hierarchies of competitive anxiety

Variable	B	SE	F	95% CI	
				LB	UB
Model 1					
Mental toughness	.403	.063		.279	.527
Gender	1.200	.624	18.497**	-.032	2.432
Age	-1.631	.325		-2.273	-.989
R	.495				
R ²	.245				
AR ²	.232				
Model 2					
Mental toughness	.122	.048		.026	.217
Gender	1.222	.433	75.256**	.368	2.077
Age	-.686	.236		-1.151	-.220
Motivation	.905	.066		.774	1.037
R	.799				
R ²	.639				
AR ²	.631				
Model 3					
Mental toughness	.102	.047		.010	.194
Gender	1.012	.418		.188	1.837
Age	4.689	1.352	68.863**	2.021	7.358
Motivation	.895	.064		.769	1.021
Competitive experience	-5.463	1.355		-8.138	-2.789
R	.819				
R ²	.671				
AR ²	.661				

Note. *p < .05; **p < .01.

Abbreviations: B= Beta; SE= Standard error; 95% CI = Confidence Interval; LB = Lower bound; UB = Upper bound.

Table 4. Results of the analysis of the effects of mediation motivation and competitive experience

Variable	Estimate	Standard error	Decision
Motivation			
Mental Toughness → Motivation	.266**	.051	Significant
Mental Toughness → Competitive Anxiety	.168**	.025	Significant
Motivation → Competitive Anxiety	.487**	.034	Significant
Mental Toughness → Motivation → Competitive Anxiety	.266 x .168 = .044**	.010a	Significant ^a
Competitive Experience			
Mental Toughness → Competitive Experience	.038*	.015	Significant
Competitive Experience → Competitive Anxiety	-1.588**	.308	Significant
Mental Toughness → Competitive Anxiety	.398**	.062	Significant
Mental Toughness → Competitive Experience → Competitive Anxiety	.038 x -1.588 = -.060*	.026a	Significant ^a

Note. *p < .05; **p < .01; a = Sobel test (Partial mediated).

Then, to answer the second question in this study, the authors present 3 research models in measuring the ability of predictor variables in predicting competitive anxiety (**Table 3**). Model 1 reports that mental toughness, gender, and age are simultaneously able to predict competitive anxiety possessed by athletes ($F = 18.497$; $p = .000$), by giving a contribution of 24.5%. Model 2 confirms that mental toughness, motivation, gender, and age together are able to predict competitive anxiety with a contribution of 63.9% ($F = 75.256$; $p = .000$).

Model 3 shows that mental toughness, motivation, competitive experience, gender, and age simultaneously are able to influence athlete competitive anxiety ($F = 68.863$; $p = .000$), with an R-Square value of .671 which means that the predictor variable contributes to the dependent variable of 67.1%. To answer the third to the ninth research questions, the researchers conducted a path analysis to make it easier to answer the research questions to be measured. We report that motivation can contribute to competitive anxiety in athletes ($b = .487$; $SE = .034$; $p = .000$). This result is shown to answer the third question in this study. Furthermore, researchers report that high competitive experience will report low levels of competitive anxiety ($b = -1.588$; $SE = .308$; $p = .000$). This finding is devoted to the fourth research question.

The results of the fifth question in this study report that mental toughness with motivation pathways can predict competitive anxiety athlete ($b = .168$; $SE = .025$; $p = .000$), and on the competitive experience path equation ($b = .398$; $SE = .062$; $p = .000$). Furthermore, athletes with high mental toughness will show motivation in displaying their best performance ($b = .266$; $SE = .051$; $p = .000$) and athletes with high mental toughness will also report high competitive experiences ($b = .038$; $SE = .015$; $p = .011$). This result has answered the sixth and seventh questions in this study.

To answer questions 8 and 9 in this study, we describe the path analysis procedure (Figure 1) that involves mental toughness, motivation, competitive experience, and competitive anxiety variables. The research findings in question 8 report that motivation can mediate the effect between mental toughness and competitive anxiety ($b = .044$; $SE = .010$; $p = .000$). Then, the results of question 9 research confirm that competitive experience can mediate and negatively influence mental toughness and competing anxiety for athletes ($b = -.060$; $SE = .026$; $p = .022$).

Our research reports that mental toughness, motivation, competitive experience, have a reciprocal relationship from competitive anxiety. This finding is consistent with research from Schaefer, et al. (2016) who reported that mental toughness, motivation, and competitive anxiety are related to one another. Mental toughness, motivation, competitive experience, can predict competitive anxiety in athletes. In line with previous research which confirms that motivation has a significant effect on competitive anxiety (Schaefer, et al., 2016). Our results are supported by past findings that confirm that mental toughness significantly influences competitive anxiety (Nugraha, 2020). However, this researcher's findings are very different from theoretical concepts that have been built in the past, namely if you have high competitive anxiety, the lower competitive anxiety in athletes, and vice versa (Schaefer, et al., 2016). Subsequent findings reported that mental toughness had a negative effect on competitive anxiety athletes, which means that the higher mental toughness in themselves, the lower their competitive anxiety (Hosseini et al., 2016). The results obtained from this study prove that there are differences with the results of previous studies. Therefore, questions 8 and 9 will answer the different results.

The competition participated by athletes is very closely related to emotions. Athletes will be faced with various stressors when participating in a match (Meyer & Fletcher, 2007). Stress in competition arises due to the demands of more athletes (Jones, 1995), for that athletes must be able to control their emotions properly. Studies in sports psychology have been carried out related to athletes' emotional responses which result in anxiety (Woodman & Hardy, 2001). Competitive anxiety is a multidimensional construct (Smith, et al., 2006), which consists of cognitive, and somatic anxiety (Martens et al., 1990). Cognitive anxiety is the involvement of cognitive functions in interpreting that there will be a failure for them. Somatic anxiety is the involvement of perception with increasing arousal towards the negative. Athletes must have optimal anxiety stability so that they can provide maximum results. Athletes with low levels of anxiety will show the best performance by athletes. Raglin and Hanin's research (2000) reported that the level of competitive anxiety possessed by athletes would vary. This is influenced by how they perceive the stressors they face. Previous research confirms that the success of an athlete in each match depends on how they can control their anxiety (Humara, 1999). The results of research from Burton (1988)

reported that competitive anxiety can contribute 46% to athlete performance. Bookani et al. (2015) reported that athletes give their best performance if anxiety is experienced in a normal stage. Based on these results, the good and bad appearance of the athlete is influenced by the level of anxiety.

Once the importance of anxiety variables for athletes in the face of competition. Our results show the influence of mental toughness on competitive anxiety. However, the influence of exerted is a positive effect that if athletes have good mental toughness, then their competitive anxiety increases as well. Researchers suspect that there are other constructs that accompany mental toughness in influencing competitive anxiety in athletes. The factors referred to by researchers are motivation and competitive experience. This construct is used as a mediating variable to accompany the effect of mental toughness in reducing athlete competitive anxiety. The results for question 8 report that motivation can significantly mediate a positive effect between mental toughness and match anxiety. These results can be interpreted that motivation cannot accompany mental toughness in reducing competitive anxiety for athletes in the face of a match. Even though the athlete has the good mental toughness and high motivation is not strong enough to influence competitive anxiety the athlete decreases. Then for the construct of the competitive experience that was tested to answer question 9 in this study reported that competitive experience was significantly able to mediate the negative influence between mental toughness and competitive anxiety for athletes. These results confirm that athletes have the good mental toughness and high motivation are very capable of ensuring the competitive anxiety of athletes to be decreased, in other words, the variable that can accompany mental toughness in reducing athlete's anxiety is competitive experience.

Research findings from Hardiyono (2020) found that the experience of competing factors affected athletes' anxiety in facing matches with a contribution of 2.83% so that athletes were able to show their best performance. Anxiety competing in martial arts athletes in the study of Raynadi, Rachmah, and Akbar (2017) was mostly included in the medium category with 21 athletes (70%) and the low category with 9 athletes (30%). The results of this study prove that athletes who excel and are experienced have low levels of anxiety. Nayek and Chatterjee (2013) added that athletes with high championship levels are more experienced and have the ability to adapt to the environment and the situation before the com-

petition. He is more able to control his emotions and anxiety. In addition, Athan and Sampson (2013) add the level of skills, the level of failure in daily activities, and experience are factors that influence the emergence of competitive anxiety. Based on the results of theoretical studies, findings from previous studies, and findings from this study itself, the researcher can report that mental toughness is not always able to independently affect competitive anxiety for athletes, so their anxiety decreases. In the case of our study, the competitive experience possessed by athletes is also a determining factor and accompanies the mental toughness variable in reducing anxiety in athletes during competition.

CONCLUSION

Based on research that has been done, it can be concluded that mental toughness, motivation, competitive experience, have a reciprocal relationship from competitive anxiety. In addition, the results of this study also reported that mental toughness, motivation, and competitive experience are able to predict competitive anxiety. Then, the results of our study also confirm the role of competitive experience as a mediating variable between mental toughness and competitive anxiety in athletes.

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