

Self-Efficacy Acting As A Mediator Between Perfectionism And Competitive Anxiety Among Chess Players

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Abstract: Present study was carried out to reveal the relationship between perfectionism and competitive anxiety among chess players, whereas self-efficacy was taken as a mediator. This study was correlated and quantitative in terms of data collection method. The study's aim is to identify the relationship between perfectionism and competitive anxiety in chess players in which self-efficacy acts as mediator, as well as to determine the impact of perfectionism on competitive anxiety. Analytical and cross-sectional study design was used. A sample of 80 male and female chess players were selected using a simple random sampling. The questionnaire was distributed among different public and private sector universities in Lahore, participated in chess in the HEC competitions. The association among Sport Multidimensional Perfectionism Scale, Physical Self-efficacy and Competitive State Anxiety Inventory. The Sport Multidimensional Perfectionism Scale moderate positively co-related ($r=0.283$) with Physical Self-Efficacy having the significant value ($p=0.01$). Similarly, Sport Multidimensional Perfectionism Scale moderate positively co-related ($r=0.395$) with Competitive State Inventory Anxiety having the significant value ($p<0.001$). Likewise, Self-Efficacy moderate positively co-related ($r=0.480$) with Competitive State Inventory Anxiety and having the significant value ($p<0.001$). It was decided that if we want to promote any sport or game all over the world, we should adopt various form of techniques and strategical training workout plans in order to improve the self-efficacy and perfectionism of chess players and some psychological therapies which helps to reduce players' mental stress.

Keywords: Chess players Self-efficacy, Perfectionism, Competitive anxiety

Introduction

Players have to display both their physical and cerebral attributes. By attempting perfection and setting a goal for exclusive expectation of execution, combined with propensities for overly simplistic judgment, perfectionism displays the situation of character. It should not come as a surprise to you that competitive players

frequently exhibit perfectionism (Daniel J. Madigan et, al, 2018).

Players at all levels of performance are capable of anxiety, a common mental element. In response to perceived pressure regarding the presentation of an errand under tension, it is an undesirable mental state. When the body and brain react to the risk or danger, a true feeling of unease is experienced by the individual. Many players

assume that discomfort is a sign of weakness when it comes to performance, which can result in reductions in performance and also affect discernment in competitive games (Muhammad Khushdil Khan, et al, 2017).

Albert Bandura's self-efficacy hypothesis posits that competition and athletic performance have a specific purpose. Self-efficacy is the ability to carry out specific actions to achieve predetermined consequences. Additionally beneficial for physiological regulation is positive self-talk. Before a performance, encouraging and advancing calms anxiety and lowers pressure. The physiological condition is positively influenced by statements like "you can accomplish this" and "this is the thing you have been training and rehearsing for, you are prepared." These expressions reduce stress in a similar manner. A person with high self-efficacy will adopt an interest enthusiastically and consistently, put in more effort, and endure for a longer period of time, improving performance in games and activities (Bandura A, 1997).

Self-efficacy is described as an individual's confidence in their capacity to use creative methods to achieve their desired results. According to Bandura's self-efficacy hypothesis, which refers to the influence of thoughts on behavior and emotion in people, a person's perception of their capabilities affects their degree of inspiration, their way of thinking, and their social and enthusiastic reactions in trying situations (Amorose, A. J., & Horn, T. S. 2000).

Dread of failure and nervousness among juvenile sport contestants and competitors, according to Ceballos Gurrola, Pineda-Espejel et al. (2013), may be caused by different perceptions of criticism from close socialisation agents (parents, coaches, teammates).

Negative perfectionism was found to be linked to psychological and physiological worry, but not to consciousness. According to the findings of the data analysis, games self-efficacy mediated the association across perfectionism's positive as

well as negative characteristics and competitor nervousness. Naghi, Behnam Mohammadali Besharat, Davood Homanian, and Mohammadhossein Ghahramani (2011).

According to psychological social theory, those people who have great levels of self-efficacy are less helpless in the face of extraordinarily ferocious fervors than those who have lower levels of self-efficacy, and they are better prepared to resist ferocious energy (Bandura, 2000). The game viability, which is regarded as a key factor in game behavior, is just one of the main files of self-efficacy that is linked to wellness and proactive duties.

Recently, there have been numerous studies focused on the topics of self-efficacy and perfectionism, but the sport of chess has received less attention than it should have as one of the major factors in bolstering and increasing these attitudes. Self-efficacy mainly refers to our evaluations and opinions about them (Gotwals, J. K., & Dunn, J. G. H. 2009).

Self-efficacy, according to "reflect shot" scholars, is a result of how others treat and respond to us. As a result, focusing on others' reactions to us can help us recognize ourselves in others as well as how the perceptions that others have of us can influence how we view and judge ourselves. According to this hypothesis, the encouragement and criticism received by other people perhaps play a substantial part in forming self-efficacy. Particularly, a number of researches have shown that self-efficacy is associated with important character traits like income, versatility, and self-efficacy. Self-efficacy is another area that is crucial to developing throughout adolescence (Calvo, T. G., Cervello, E. et. al, 2010).

To determine, whether there exists a connection between brandishing self-efficacy with perfectionism and competitive anxiety in the top chess players or not, the scientist in this investigation attempted to consider the connection between wearing self-efficacy middle person with perfectionism and competitive

anxiety among top chess players. (Dunn, J. G. H., Gotwals, J. K., & Causgrove Dunn, J. 2005).

In general, the findings of this study are essential, required, and applicable: first, this study will cover a knowledge gap regarding competitive anxiety, and second, it focuses on the study of the relationship between sports self-efficacy, perfectionism, and competitive anxiety. Consequently, the result of the study's analysis will be able to obtain relevant information in this sector and aid in the promotion of the literature. This study's findings are intended to be used by sports trainers, athletes, psychotherapists, and counsellors to decrease and manage competitive anxiety.

The actual physical anxiety is the part of the tension and mirrors the singular's impression of physiological reactions and negative inciting, though self-confidence is characterized as the singular's faith in dominance and capacity to finish tasks effectively (Burton, 1998; Martens et al., 1990; Woodman and Hardy, 2001).

Sport self-efficacy influences athletes' thinking patterns and can help increase or decrease sports performance. When an athlete has a great intelligence of self-efficacy, he is additionally likely to choose challenging goals, and his level of success and motivation will rise. Individuals who have a great intelligence of self-efficacy are more likely to persist in their efforts to achieve their goals (Shamaeezadeh, 2005)

Self-efficacy can be stated as person's conviction in its ability to carry out exact actions in order to achieve desired outcomes. Humans' perceptions of their skills have an effect on their motivation level, thinking pattern, and behavioral and emotional reactions in stressful situations, according to Bandura's self-efficacy hypothesis, which refers to the effect of thoughts on behaviors and emotion of individuals (Bandura, 1997).

Perfectionism is a personality characteristic categorized by desire towards faultlessness as well as exceptionally elevated performance

values, as well as tendencies toward overly critical self-evaluation (Flett & Hewitt, 2002)

Some investigators believe that perfectionism is an adaptive trait that aids top presentation throughout game (Gould, Dieffenbach, & Moffett, 2002).

Rasmussen (2010) studied athletic self-efficacy as an arbitrator between the relationship of between perfectionism and competitive anxiety. The findings exposed that competitors' tries to complete (positive perfectionism) while experiencing cognitive and physical anxiety were negative and reliable. They have a good friendship. Negative perfectionism, on the other hand, was linked to athletes' intellectual, physical tension, along with their assertiveness. In accordance with the discoveries, self-efficacy in sports acts as a mediator between the beneficial and adverse characteristics of excellence and competitive nervousness.

In competitive anxiety experience, three separate characteristics are determined: psychological feature anxiety, physical anxiety, and certainty. Anxiety is the psychological factor of stress that is caused by negative prospects and psychological feature concerns concerning oneself, scenario, and attainable results (the likelihood of failure) (Mullen, R., Hardy, L., & Tattersall, A. (2005). Some latest studies in the field of physical educations have been reported in (Aamina et al., 2020; Aqsa et al., 2020; Aqsa et al., 2021; Farwa et al., 2021; Hira et al., 2021; Iqbal et al., 2019; Rabia et al., 2021; Saadia et al., 2021; Salma et al., 2020; Sana et al., 2021; Threem et al., 2020).

Objectives of the study: 1) To study the relationship of self-efficacy, perfectionism and competitive anxiety among chess players. 2) To investigate the impact of perfectionism on competitive anxiety of chess players. 3) To find out the mediating effect of self-efficacy on perfectionism and competitive anxiety of chess players.

Hypotheses of the study: H₁: There has significant relationship between self-efficacy, perfectionism and competitive anxiety of chess players. H₂: There has significant relationship between perfectionism and competitive anxiety of chess players. H₃: There has mediating effect of self-efficacy on perfectionism and competitive anxiety of chess players.

Scope of the study: To determine, whether there exists a connection between brandishing self-efficacy with perfectionism and competitive anxiety in the top chess players or not, the scientist in this investigation attempted to consider the connection between wearing self-efficacy middle person with perfectionism and competitive anxiety among top chess players. (Dunn, J. G. H., Gotwals, J. K., & Causgrove Dunn, J. (2005). In overall, the study's findings are significant, essential, and useful because they focus on the association between sports self-efficacy with perfectionism and competitive anxiety as well as helping to close a knowledge gap in the field of competition fear. As a result, the findings of the studies will be able to produce pertinent knowledge in this area and aid in the promotion of the literature. The findings of this study should help athletes, psychotherapists, and counselors address and manage their competitive anxiety. Grant, A. M. (2008).

Research Methodology

Study design was cross-sectional and analytical in nature. The settings of the study were different public and private sector universities in Lahore participating in chess in the HEC competitions. Population of the study was 100 chess players and 80 chess players were included in sample size. The primary data with reference to this research was collected in the form of survey and the information has been gathered from different public and private sector universities in Lahore whereas the secondary information was collected through books, websites and journals. Data was

collected with the help of questionnaires from the different public and private sector universities in Lahore participating in chess in the HEC competitions. Simple random sampling technique was used. The sample size was determined through Yamane's (1967) formula. $n = \frac{N}{1+Ne^2}$, where $N = Total Population = 100$, $e = sampling error = 0.5$, $n = Sample size = 80$. Demographic variables consist of questions related to name, age, playing level, playing experience and universities.

Competitive state anxiety inventory-2: Anxiety was measured by Competitive state anxiety inventory-2. The Competitive State Anxiety Inventory—2 (CSAI-2; Martens et al., 1983) was developed as a multidimensional measure of sport-specific state anxiety. The CSAI-2 is a 27-item paper and pencil test divided into three subscales (nine items each) measuring somatic anxiety (e.g., "I feel tense in my stomach"), cognitive anxiety (e.g., "I am concerned about this competition"), and self-confidence (e.g., "I feel at ease").

Sport Multidimensional Perfectionism Scale-2: Perfectionism was measured by Sport Multidimensional Perfectionism Scale-2 (Sport-MPS-2; Gotwals & Dunn, 2009). The Sport-MPS-2 is a 42-item, 6-factor (i.e., personal standards, concern over mistakes, perceived parental and coach pressures, doubts about actions, and organization) measure of perfectionism in sport. Items are rated on 5-point Likert scales, ranging from 1 (strongly disagree) to 5 (strongly agree). Findings the CFA indicated that the 6-factor model fit the data adequately.

Physical Self-Efficacy Scale: Self-efficacy was measured by Physical Self-Efficacy Scale (PSE; Ryckman, Robbins, Thornton, & Cantrell, 1982). The PSE scale measures self-efficacy in the sport context. The scale contains 22 items, rated on a

Likert-type scale ranging from 1 (Agree strongly) to 6 (Disagree strongly).

Procedure: The study was approved by the Departmental Board of Studies and Board of Advance Studies and Research, The University of Lahore. In the present research, first of all, permissions were taken from the authors to use their scales before collecting data. The permission from the university was taken. The researcher visited different government institutions and took permission from respective heads of the institutes to administer questionnaires to relevant participants. For data collection, the author explained the nature and purpose of the study to the participants. Informed consent was signed by the participants. It was assured to participants that their information will be kept confidential and private. SPSS version 23 was used to analyze data. The data dispersion was evaluated using descriptive statistics. The influence of factors was studied using inferential statistics. The impacts of mediating factors were investigated using mediation analysis. Different tests were used for data analysis.

Results and Discussions

The main purpose of the study aimed to find out the relationship between self-efficacy, perfectionism and competitive anxiety among the chess players. Other objectives of the study are to

investigate the impact of perfectionism on competitive anxiety of chess players and to find out the mediating effect of self-efficacy on perfectionism and competitive anxiety of the chess players. The data accordingly collected from the chess players of different public and private sector universities in Lahore who participated in chess in the HEC competitions.

In this paper the data analysis and the interpretation of results based on the study objectives have been described. This chapter is consisting of three scales which are Sport Multidimensional Perfectionism Scale, Physical Self-efficacy and Competitive State Anxiety Inventory. The participants of chess players participated with demographic information of age, gender, playing level, playing experience and name of universities which were collected from the sampled players. The main purpose of the study aimed to find out the relationship between self-efficacy, perfectionism and competitive anxiety among the chess players. Other objectives of the study are to investigate the impact of perfectionism on competitive anxiety of chess players and to find out the mediating effect of self-efficacy on perfectionism and competitive anxiety of the chess players. The data accordingly collected from the chess players of different public and private sector universities in Lahore who participated in chess in the HEC competitions.

Table 1 Cronbach's Alpha reliability and Normality statistics (n=80)

Scale	No. of items	Cronbach's Alpha
Sport Multidimensional Perfectionism Scale	42	0.877
Physical Self-efficacy Scale	22	0.845
Competitive State Anxiety Inventory	27	0.779
Overall	91	0.905

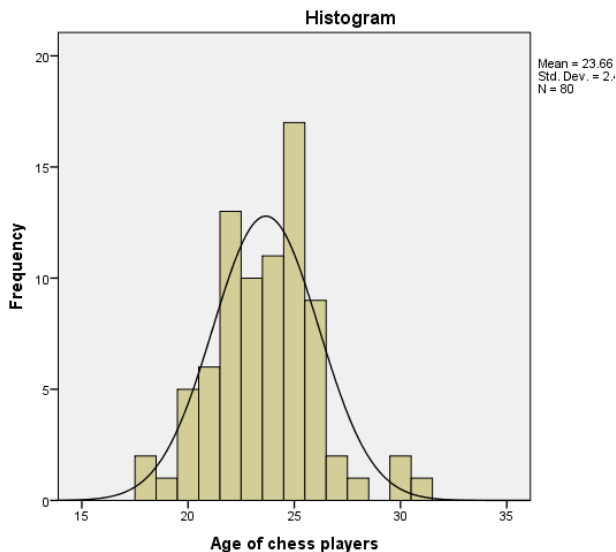
Table 1 shows that the reliability of the Sport Multidimensional Perfectionism Scale have the Cronbach's Alpha value 0.877. This table also shows that the reliability of Physical Self-efficacy scale has the Cronbach's Alpha value 0.845 and

it also shows the reliability of Competitive State Anxiety Inventory scale which is 0.779. The overall reliability of all the scales was 0.905 which is in excellent range.

Table 2 Normality of Competitive Orientations Scale, Personal Values Survey and Competitive State Anxiety Inventory (n=80)

Scales	Shapiro-Wilk		
	Statistic	df	Sig.
Sport Multidimensional Perfectionism Scale	.965	80	.270
Physical Self-efficacy Scale	.976	80	.142
Competitive State Anxiety Inventory	.979	80	.213

The table 2 shows that the Normality test values which was used for analyzing the normality of Sport Multidimensional Perfectionism Scale, Physical Self-efficacy and Competitive State Anxiety Inventory scales. Significant value of Sport Multidimensional Perfectionism Scale is 0.270, 0.142 is the significant value of Physical Self-efficacy while significant value of Competitive State Anxiety Inventory is 0.213 which is greater than 0.05 which shows that the data is normal.

Figure 1 Age of chess players (n=80)

Note: This figure shows the age of chess players.

Table 3 Gender of chess players (n=80)

Gender	Frequency	Percent
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Male	22	27.5
Female	58	72.5
Total	80	100.0

The Table 3 shows that 22(27.5) % participants were male and 58(72.5) % participants were females.

Table 4 Playing level of chess players

Playing level	Frequency	Percent
University	15	18.8
National	65	81.3
Total	80	100.0

The Table 4 shows that 15(18.8) % participants were university level players and 65(81.3) % participants were players at national level.

Table 5 Playing experience of chess players

Playing experience (years)	Frequency	Percent
0-2	13	16.3
3-4	22	27.5
5-Above	45	56.3
Total	80	100.0

The Table 5 shows that 13(16.3) % participants have playing experience of 0-2 years, 22(27.5) % participants have playing experience of 3-4 years while 45(56.3) % participants have playing experience of above 5 years.

Table 6 Universities of chess players

Universities	Frequency	Percent
University of Lahore	32	40.0
LCWU	13	16.3
UVAS	28	35.0
Punjab university	7	8.8
Total	80	100.0

Table 6 shows that the 40(0.0) % participants were from University of Lahore, 16(3.0) % participants were from LCWU, 35(0.0) % participants were from UVAS, whereas 8(8.0) % participants were from Punjab University.

Table 7 Correlation of mean value of Sports Multidimensional Perfectionism Scale, Competitive State Anxiety Inventory and Physical Self-efficacy (n=80)

		Mean COS	Mean SE	Mean CSIA
Mean COS	Pearson Correlation	1	.283*	.395**
	Sig. (2-tailed)		.011	.000
Mean SE	Pearson Correlation		1	.480**
	Sig. (2-tailed)			.000
Mean CSIA	Pearson Correlation			1
	Sig. (2-tailed)			

*Correlation is significant at the 0.05 level (2-tailed), **Correlation is significant at the 0.01 level (2-tailed).

Table 7 shows that the relationship between Sports Multidimensional Perfectionism Scale, Competitive State Inventory Anxiety and Physical Self-Efficacy. The Sports Multidimensional Perfectionism Scale moderate positively co- related ($r=0.283$) with Physical Self-Efficacy having the significant value ($p=0.01$). Similarly, Sports Multidimensional

Perfectionism Scale moderate positively correlated ($r=0.395$) with Competitive State Inventory Anxiety having the significant value ($p=0.00$). Likewise, Self-Efficacy moderate positively correlated ($r=0.480$) with Competitive State Inventory Anxiety and having the significant value ($p=0.00$).

Table 8 Model summary Sports Multidimensional Perfectionism Scale and Competitive State Anxiety Inventory (n=80)

Model	R	R Square	Adjusted Square	R Std. Error of the Estimate	Durbin-Watson
1	.395 ^a	.156	.145	.30746	1.668

a. Predictors: (Constant), Mean COS, b. Dependent Variable: Mean CSIA

The next output part summarizes the entire model (so it tells us whether the model is successful in predicting simple anxiety). This option is chosen by default in SPSS since it gives us with some critical model information: the value R, R², and modified R². The value of the multiple correlation coefficients between the predictors and the result is 0.395 in the column labelled. The value of R²

in the next column indicates how much of the variability in result is accounted for by the predictors. Its score in the model is 0.156, indicating that the Sports Multidimensional Perfectionism Scale explains for 15.6% of the variation in basic anxiety. The modified R² indicates how effectively our model generalizes, and ideally, its value should be the same. Finally,

the Durbin-Watson statistics may be seen in the table's final column. This statistic tells us whether or not the assumption of independent mistakes is appropriate. As a matter of thumb, readings less

than 1.5 or larger than 2.5 should clearly raise red flags. The data value is 1.668, which is within the acceptable range.

Table 9 Analysis of Variance Sports Multidimensional Perfectionism Scale and Competitive State Anxiety Inventory (n=80)

Model		Sum Squares	of Df	Mean Square	F	Sig.
1	Regression	1.365	1	1.365	14.440	.000 ^b
	Residual	7.374	78	.095		
	Total	8.739	79			

a. Dependent Variable: Mean CSIA, b. Predictors: (Constant), Mean COS

Only if required, are change statistics provided, which indicate if the change in R^2 is significant. A ratio can be used to determine the significance of R^2 . A ratio of 14.440 is obtained by changing the amount of variance that can be explained. As a result, the change statistics inform us about the difference created by adding additional predictors to the model. The following section of the output comprises an ANOVA that determines if the model is substantially more accurate at predicting

the result than the mean best assumptions. The F-ratio, in particular, reflects the ratio of the increase in prediction that arises from the model being fitted to the inaccuracy that remains in the model. The average sum of squares for each term is then obtained by dividing the square sum by the df, and the F-ratio is 14.440. These results might be interpreted as indicating that the model predicts the amount of variance.

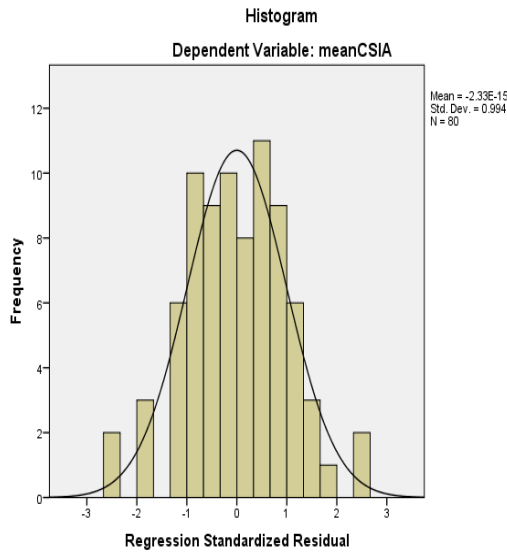
Table 10 Regression Coefficient of Sports Multidimensional Perfectionism Scale and Scale Competitive State Anxiety (n=80)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.187	.329		6.643	.000
	Mean COS	.354	.093	.395	3.800	.000

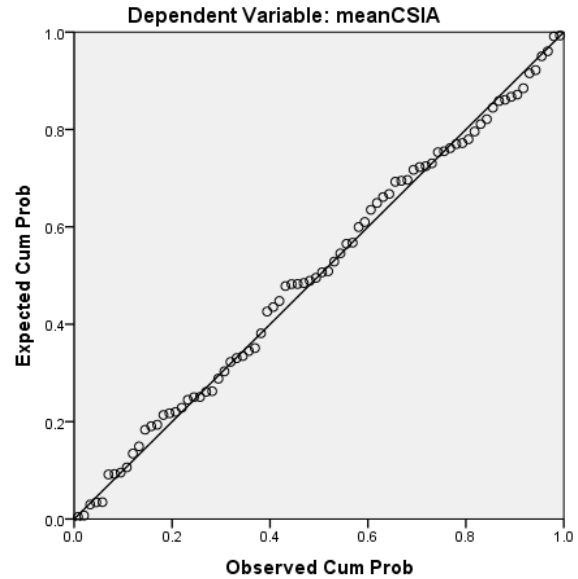
a. Dependent Variable: Mean CSIA

The regression coefficient (β), Standard Error of estimate (SE), t statistics value and significant value for model-1 is listed in the table. The β (slope) coefficient for model has ($\beta=0.395$) value, which indicates that perfectionism has positive impact on competitive state anxiety. On the basis of above results listed.

Figure 2 Histogram and normal probability plot of Model-1



Note: Figure 3 depicts the data histogram and normal probability plot for the present scenario. A normal distribution should be shown in the histogram (a bell-shaped curve). SPSS creates a curve on the histogram to depict the distribution's shape.

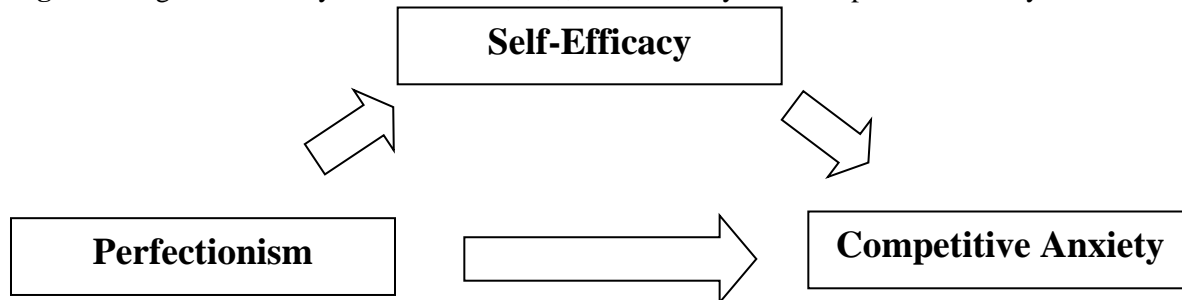


Note: Figure 4 depicts the findings from our Competitive State Inventory Anxiety. Take a notice of how the points are distributed randomly and equally over the plot. This pattern indicates that the linearity and homo-elasticity requirements have been satisfied.

Figure 4 Regression plot of Model-1

Sobel Test for Mediation: This test identifies the indirect association between the variables. As a result, we analyzed Sobel Z statistics, findings suggest that a mediating variable is one that has an indirect influence on the dependent variable. When a third variable connects the relationship of an independent and dependent variable, this model is also known as the mediation model.

Figure 5 Regression Analysis of Perfectionism, Self-Efficacy and Competitive Anxiety



According to Baron and Kenny (1986), three requirements must be met for a variable to act as a mediator: first, the variation in the level of the

independent variable must be fundamentally related to the change in the level of the supposed mediating variable (considered to as path a).

Furthermore, changes in the postulated mediating variable should result in changes in the dependent variable (considered to be as way b). ANOVA provides useful data for the meditational hypothesis (Fiske, Kenny and Taylor, 1982). To investigate the influence of mediation, a number of regression models are tested (Judd and Kenny, 1981). To assess the mediation influence of a variable, first regress the predicted mediating

variable with the independent variable, then the dependent variable with the independent variable, and finally the dependent variable with both the mediating variable and the independent variable. The coefficients from all three-regression analyses are then examined. To assess the mediation impact, a SOBEL test was done on the acquired data.

Table 11 Sobel test for mediation

Model	Values
Regression coefficient for the association between COS and SE	0.372
Std. error of a	0.143
P value of a	0.011
Regression coefficient for the association between SE and CSIA	0.328
Std. error of b	0.068
P value of b	0.000
Regression coefficient for the association between COS and CSIA	0.354
Std. error of c	0.093
P value of c	0.000
SOBEL TEST VALUE	2.28964
Std. error of Sobel test	0.05329
P value of Sobel test	0.02204

The Sobel test demands an evaluation of the standard error of route a b. With the p-value determined from the standard normal distribution, the ratio of a b to its standard error is employed as a test statistic for evaluating the null hypothesis that the real indirect impact is zero. Similarly, in this example, the SOBEL value was estimated as 2.28964 with $p < 0.001$ (two tailed=0.00), indicating that self-efficacy mediates the relationship between perfectionism and competitive anxiety. The standard error of Sobel test is 0.05329 and p-value of Sobel test is 0.022042. (Preacher & Leonardelli, 2001)

Conclusion

By using the Correlation and Regression the relationship of perfectionism and competitive anxiety measured, in which self-efficacy, perfectionism and competitive anxiety

moderately positively co-related with each other. The mediation of self-efficacy was measured through the Sobel Test, which reveals that self-efficacy was a mediating variable significantly positive connection with perfectionism and competitive anxiety. Recognizing additional important views discovered as a result of improving perfectionism and self-efficacy skills. This research adds to our understanding of how to improve strategies through technical skills training sessions. The findings of the study suggest that perfectionism has a favorable impact on the performance of chess players. To summarize, in order for chess players to achieve their specific goals, they must participate in numerous strategical training sessions in order to develop their capacity to perform and technical skills in game situations.

Limitation and Suggestions: Future studies could be conducted on large sample size. In future the same study should be conducted on other field of sports or games. Future research can be done to see the impact of self-efficacy on different playing positions and strategies in chess. Future studies could examine impact of training age on physical fitness of elite male and female chess players. Future research can be done to see the mental and physical fitness level for selection criteria of male and female chess players. In future researcher can extend this research by doing in depth interviews with players. Future research can be done to see speed, agility and reaction time compulsory in team sports, games like chess for selection criteria. Future research can be done to see relationship between physiological and psychological in team sports, games like hockey. Only three variables have been calculated i.e., self-efficacy, perfectionism and competitive anxiety. More variables can be included in the study. Study is based on a short time span. Participants were in hurry and had less time to give in-depth attention on the questionnaire.

Implications: This research will be helpful for the chess players in order to implement and helps during competition to reduce stress, anxiety and awfulness of self-efficacy, perfectionism and Competitive anxiety related difficulties. Those points which discussed in this study also helpful skill and strategy to enhance decision making ability, so students can cope with competence stress and take right decisions regarding their game and career. This study will motivate students to increase socialization, engage themselves in altruistic behavior and show positive contribution towards humanity.

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