

**The Contribution of IQ (Intelligence Quotient), Anxiety, and Concentration to the Achievement of Central Java Chess Athletes****Zahra Chumaira Amelia Hanfin[✉], Heny Setyawati², Donny Wira Yudha Kusuma³**Sport Education Postgraduate Study Program, Universitas Negeri Semarang, Indonesia¹²³**Article History**Received February 2022
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Abstract

Chess athletes are required to think extra, have the foresight to master the game, read the characteristics of the opponent, and step proficiently. However, chess athletes are not only enough to be seen from their intelligence and anxiety levels but also must be balanced with good concentration. The purpose of this study was to analyze the contribution of IQ (Intelligence Quotient), anxiety, and concentration on the achievements of chess athletes. The research approach used is a mixed-method with correlational, and qualitative ethnographic methods. The instruments used are IQ questionnaires, anxiety CSAI-2R, Grid concentration test, interview guidelines include somatic symptoms, psychological, internal and external factors, achieving achievement, achievement motivation, and documentation. The population and sample in this research are Semarang chess athletes with a total of 20 athletes consisting of 12 males and 8 females. Statistical hypothesis testing was carried out using SPSS version 23 software. The quantitative data analysis technique used is the product-moment correlation technique. While, the qualitative data analysis includes checking the validity using data triangulation techniques, data collection, data reduction, data presentation, and drawing conclusions. The results showed the sig IQ (intelligence quotient) value of $0.020 < 0.05$ with the contribution of the IQ variable (intelligence quotient) of 22.3%. In the anxiety, the Sig results showed a value of $0.033 < 0.05$ with the contribution of the anxiety variable at 32.8%. At the concentration of Sig, the results showed a value of $0.007 < 0.05$ with the contribution of the variable concentration of 44.3%. Sig results showed a value of $0,041 < 0,05$ which means there is a contribution of IQ (Intelligence Quotient), anxiety, and concentration to the achievements of Central Java chess athletes with the contribution of 59.5%.

How to Cite

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INTRODUCTION

Chess is a mind game played by two individuals. Chess athletes are required to think extra, have the foresight to master the game, read the characteristics of the opponent, and step proficiently. According to (Kelly, 1985) mere intellectual ability does not guarantee success in chess athletes (Aciego et al., 2012). In addition to cognitive competence, chess athletes need the participation of other competencies. In the intelligence that must be possessed by a chess athlete, of course, chess athletes must also have a good mentality.

Setyawati (2014) stated that in the development of sports achievements, one aspect that cannot be ignored is the existence of psychological factors. Where the most prominent of these psychological aspects in the performance of an athlete include intelligence, motivation, anxiety or tension, and training programs (Algani et al., 2018). The mental factor is one of the factors that affect the result of their performance. In sports performances, mentality becomes the initiator and booster for strengthening physical, technical, and tactical capabilities (Jamaliah et al., 2015).

Excessive anxiety at the beginning of the match causes an athlete to be more likely to lose in the match. If the athletes have low anxiety and are not easily afraid, then during the match, the burden that is on the athlete is reduced, and they will play more optimally. It can be seen from several matches that the researchers met with non-master athletes competing with opponents with master titles, namely National Masters, Fide Masters, International Masters, and Grand Masters. Many athletes who do not have titles will feel less confident and too anxious which makes the player's mentality down. When players face an opponent who has a higher title than them, the player's mind becomes unfocused.

Concentration needs to be applied to the athletes, because without the application of concentration to these athletes, they will more easily meet failure in developing their concentration skills. Of course, this will cause the athlete to fail in every competition he wants to carry out. This was also mentioned by (Shawn, Z. et al., 2014) that "Once an athlete has developed the skills necessary for competition, their ability to control their attention in order to concentrate on their task is critical to consistently performing it".

Disruption of the athlete's concentration during the match will cause various problems. Problems that arise such as reduced movement accuracy, even loss of confidence in athletes due to not being able to implement strategies because

they don't know what to do (Jannah, 2010).

Athletes should equip themselves with stable psychological, which means that athletes must be able to beat all non-technical pressures that come. The level of achievement is largely determined by the maturity and mental toughness of athletes in overcoming various difficulties in competing. The arena of competition is always full of conflict, fear, and mental clashes. Conflicts experienced by athletes in competitions are anxiety that can interfere with athletes in achieving an achievement (Verawati, 2015).

Initial observations in the field during matches, the Kejurprov in Salatiga City in 2019 saw many chess players who often walked back and forth when the matches would be started, and the athletes often urinated. The number of players who still lack concentration is marked by athletes who still see the other players on their right and left sides, therefore the game itself is not focused and the athlete lacks confidence when facing the match. It can be seen that Central Java athletes are less concentrated, especially in the city of Semarang, because they are too anxious. Small problems like this will affect the performance of athletes during the match and cause defeat due to a lack of focus on the game. The second observation is based on the results of interviews with researchers in Central Java chess athletes who already have achievements at the city, provincial and national levels with non-master and master degrees. Researchers took samples of three women and three men. The information that the researcher gained was the athletes said that 85 percent of intelligence was the main factor in the achievement of chess athletes. The smarter a chess athlete, the higher the success rate.

From the description above, the researcher is motivated to find out more about how the contribution of IQ (Intelligence Quotient), Anxiety, and Concentration to the achievements of chess athletes. Based on the explanation of the background above, the researcher is interested in conducting a study under the title: "The Contribution of IQ (Intelligence Quotient), Anxiety, and Concentration to the Achievement of Central Java Chess Athletes".

METHODS

This study used a mixed-method research approach with correlational methods and ethnographic methods to determine the contribution and depth to IQ (intelligence quotient), anxiety, and concentration in chess athletes. The purpose of this study is to describe and analyze how much

the contribution of the independent variables, including IQ (intelligence quotient) (X1), anxiety (X2), and concentration (X3). While on the dependent variable, there is the achievement (Y) of chess athletes.

The population and sample in this study were Semarang City chess athletes who took part in the 2021 Central Java Provincial Championships, there were 20 athletes consisting of 12 males and 8 females. The data collection was carried out using a questionnaire instrument technique. Quantitative data collection techniques were obtained in the form of IQ questionnaire data, anxiety questionnaires, concentration tests, and match results. Further development of data processing using excel program and SPSS version 23. Qualitative data collection techniques were carried out by doing observation, interviews and documentation. The validity of this research data used source triangulation, method triangulation, and peer discussion. The analysis of data techniques were data reduction, data display, dan conclusion drawing/verification.

RESULTS AND DISCUSSION

The research instrument must have been tested for validity and reliability. The instrument in this research are:

IQ Test (Intelligence Quotient)

The IQ questionnaire in this study was provided by a psychology institute. The test was carried out in collaboration with a psychological institution, Kartika Institute Semarang. The classification of IQ test results can be seen from the **Table 1** as follows:

Table 1. IQ Test Classification

Intelligence Numbers	Intelligence Criteria	Category
> 120	Smart	Good
110 – 119	Above Average	Good Enough
90 – 109	Average	Enough
80 – 89	Under Average	Less
< 79	Slow	Very less

Source : Kartika Psychology Institute Semarang

Anxiety Test

Anxiety Questionnaire

The instrument or tool used in this research is in the form of a questionnaire which is presented in such a way that the respondents only need to give a checklist mark (v) in the appropriate

column or place. This questionnaire used a modified Likert scale with four answer choices, there were, never, rarely, sometimes, often.

Table 2. Questionnaire answer weighting

Statement	Alternative Choices			
	Never	Rarely	Some-times	Often
Positive	1	2	3	4
Negative	4	3	2	1

Source: Research Grid

Blood Pressure Test

This study used a sphygmomanometer to determine the blood pressure of chess athletes. Data collection is carried out when the athlete is in a state of preparation before the match (30 minutes minimum) and 15 minutes after the match with the athlete sitting.

Heart Rate

The maximum pulse rate for adults is 180-200 per minute. The normal rate of heart rate (number of beats per minute) in adults is 60-80 per minute (Hermawan et al., 2012).

Concentration Test

The data collection instrument in this study used a concentration test (Grid Concentration Test). Concentration test with the procedure of an athlete sorting the numbers coherently from the smallest value of 00 to the largest of 99 in a column of boxes for 1 minute. This activity will be assisted by several people to see the honesty of the athletes in checking the number boxes. The score of the test results is obtained from the results of the number box that has been successfully obtained sequentially and correctly arranged.

Table 3. Concentration Assessment Criteria

Criteria	Category	Score
≥21	Best Concentration	A
16-20	Good Concentration	B
11-15	Enough Concentration	C
6-10	Less Concentration	D
≤5	Very Less Concentration	E

Interview

The data collection was done by interviewing athletes, coaches, and parents of athletes as a result of research on IQ, Anxiety, and Concentration in Semarang City chess athletes who take part in the Provincial Championship in 2021.

Achievement Test

The achievement test of chess athletes is

carried out by observing chess matches from the first round to the end, and the final result of the chess match is used as an achievement measurement tool. FIDE Chess Game Rules adapted to the PERCASI Rules in a chess match the winning side gets 1 point, 0.5 for a draw, and 0 for a losing player.

Description of IQ (Intelligence Quotient) Results Data

The results of measuring IQ levels on the achievements of Central Java chess athletes obtained an average value of 111.25, the standard deviation of 7.545 with a maximum IQ level of 125 and a minimum of 100. The measurement results are categorized as IQ levels in Central Java chess athletes as follows:

The data below is a graph of the results of the Intelligence Quotient (IQ) research data based on the athlete's Intelligence Quotient (IQ) questionnaire instrument:

Table 4. The Description of IQ (Intelligence Quotient) Results

Interval	Intelligence Criteria	Frequency	%
>120	Smart	2	10
110-119	Above Average	8	40
90-109	Average	10	50
80 – 89	Under Average	0	0
<79	Slow	0	0
Total		20	100

Description of Anxiety Data

The results of the anxiety level on the achievements of Central Java chess athletes obtained an average value of 46.55, the median value was 46.00, the standard deviation was 5.276 with a maximum anxiety level of 58 and a minimum of 38. Research for 1 match day, there were

CSAI-2R, pulse, blood pressure (systolic and diastolic) before the match based on position and gender. There were 20 respondents, consisting of 8 women and 12 men.

The measurement results are categorized as anxiety levels in Central Java chess athletes as follows **Table 5**:

On the cognitive anxiety item, the highest average for chess athletes was male junior players (97.4), while the lowest was female senior players (24). On the self-confidence item, the highest average score for chess athletes was male senior players (53), while the lowest was female junior players (15.5).

On the pre-pulse item, the highest for chess athletes was male seniors (103.8), while the lowest was female junior players (88.5). In the post-pulse item, the highest for chess athletes was female junior (106.3), while the lowest was male junior players (96.9).

On the pre-systolic blood pressure item, the highest average for chess athletes was from the male senior players (135.3), while the lowest was from the male junior players (115,3). Besides that, the highest post-systolic blood pressure was male senior players (139.5), while the lowest was female junior (110.7).

On the pre-diastolic blood pressure item, the highest average for chess athletes was male seniors (93.8), while the lowest was female senior players (83). Besides that, the highest post-diastolic blood pressure was male senior players (96.8), while the lowest was junior female players (74.7).

Description of Concentration Data

The results of measuring the level of concentration on the achievements of Central Java chess athletes obtained an average value of 4.0750, the standard deviation of 5.441, with a maximum concentration level of 24 and a minimum of 3.

Table 5. Description of Overall Average Results on Anxiety Levels of Chess Athletes

POSITIONS	ITEMS								
	S	K	K.D	DN.1	DN.2	S.1	S.2	D.1	D.2
S.Pa	53.8	49	53	103.8	100.8	135.3	139.5	93.8	96,8
S.Pi	22	24	23	101	101	126	126.5	83	81
J.Pa	107.8	97.4	15.8	98.5	96.9	115.3	124.3	85.6	81
J.Pi	92.8	76.8	15.5	88.5	106.3	120.5	110,7	91.7	74,7

Description

S.Pa (Male Senior), S.Pi (Female Senior), J.Pa (Male Junior), J.Pi (Female Junior), S (Somatic), K (Cognitive), K.D (Self Confidence), S.1 (Pre-Systolic), S.2 (Post-Systolic), DN.1 (Pre-Pulse), DN.2 (Post-Pulse), D.1 (Pre-Diastolic), D.2 (Post-Diastolic)

Description of Athlete Achievement

The results of measuring the level of achievement of Central Java chess athletes obtained an average value of 3.875, the standard deviation of 1.8128, with a maximum achievement level of 6 and a minimum of 0.

Data Normality Test

The data normality test was conducted to determine whether the data were normally distributed or the data were not normally distributed. The normality of the data can be seen from the Shapiro-Wilk normality test of each variable. The data were analyzed by the SPSS version 23 computer program. Basis of decision making based on probability, where, if the probability >0.05 then the research data is normally distributed. For more details the researchers present in the Based on the results of the data normality test, the significant value of all variables is greater than 0.05. Therefore, it can be concluded that H_0 is accepted, which means that all data variables are normally distributed.

Hypothesis Testing

Product Moment Correlation Test of IQ (Intelligence Quotient), Anxiety, And Concentration

The product-moment correlation test that the researchers used to determine whether there was a relationship between IQ (Intelligence Quotient), anxiety, and concentration variables on the achievements of Central Java chess athletes was carried out with the help of the program.

Based on the results of the calculation, (1) The value result of Sig. (2-tailed) shows a value of <0.05 , which means that there is a correlation in all research variables, (2) it is known that the results of the Pearson correlation value $> r$ -count value of 0.423, it means that there is a correlation or relationship between all research variables

First Hypothesis Testing

Testing the results showed that the results of the F test the value of $F\text{-count} > F\text{-table}$ were $5.430 > 3.52$, with a significance value of 0.020, where a significance value of $0.020 < 0.05$. It shows that H_0 is rejected and H_a is accepted. Therefore, there is a contribution of IQ (intelligence quotient) to the achievements of Central Java chess athletes.

Showing the results of the contribution of IQ (intelligence quotient) with an R-Square value of 0.223, This value means that IQ (intelligence quotient) contributes to the achievement of chess athletes in Central Java by 22.3%, while 77.7 is determined by other variables.

Second Hypothesis Testing

Testing the results of the F test showed that the value of the $F\text{-count} > F\text{-table}$ was $5.318 > 3.52$, with a significance value of 0,033, where a significance value of $0.033 < 0.05$. It shows that H_0 is rejected and H_a is accepted. Therefore, there is a contribution of anxiety to the Central Java chess athlete achievement.

Showing the result of the anxiety contribution with an R-Square value of 0.328. This value means that anxiety contributes to the achievement of Central Java chess athletes by 32.8%, while 67.2 is determined by other variables.

Third Hypothesis Testing

The results of the F test showed that the value of the $F\text{-count} > F\text{-table}$ was $9.399 > 3.52$, with a significance value of 0.007, where a significance value of $0.007 < 0.05$. This shows that H_0 is rejected and H_a is accepted. Therefore, there is a contribution of concentration to the Central Java chess athlete achievement.

Showing the results of the concentration contribution with an R-Square value of 0.443, this value means that concentration contributes to the achievement of chess athletes in Central Java by 44.3%, while the amount of 55.7 is determined by other variables.

Fourth Hypothesis Testing

The results of the F test indicate that the value of the $F\text{-count} > F\text{-table}$ is $6.484 > 3.52$, with a significance value of 0.041, where the significance value is $0.041 < 0.05$. It means that H_0 is rejected, and H_a is accepted. Therefore, there is a contribution of IQ (intelligence quotient), anxiety, concentration on the achievements of Central Java chess athletes.

Showing the results of the contribution of IQ, anxiety, and concentration with an R-Square value of 0.595, this value means that concentration contributes to the achievement of Central Java chess athletes by 59.5%, while 40.5 is determined by other variables.

Contribution of IQ (Intelligence Quotient) to the Achievement of Central Java Chess Athletes

In this study, it was found that IQ has a contribution of IQ (intelligence quotient) to the achievements of Central Java chess athletes. The results of the study are in line with research conducted by (Astriyani, 2015) entitled "The Relationship of IQ Intelligence Level with Chess Achievement of UPI Percama UKM Athletes". Where the results of the study showed that there is a significant relationship between the level of IQ intelligence and the chess achievement of

the UKM Percama UPI athletes. The relationship with this research is psychological factors because intelligence has an important role in achieving achievement.

Athletes who are always faced with problems, both problems pursuing achievements, facing pressure from opponents and supporters, there will be a possibility of experiencing failure. Therefore, it requires a strong mentality, one of which is a good IQ ability to solve all problems correctly. In line with an opinion from (Fazari et al., 2017) which explains that Intelligence itself is an important factor that often determines victory in sports matches. As stated by (Azhari, 2004) in (Pratama et al., 2019) Intelligence is an individual's mental ability that can be used to adjust to a new environment, and can solve the problems faced appropriately.

Someone intelligent will certainly be able to solve various problems and challenges they face because they can make decisions quickly and accurately. For this reason, a person's intelligence becomes a determining factor for someone to be successful in life. (Saifuddin, 2011). In sports, each athlete who pursues a sport requires good intelligence, because in sports it is not only physical and technique that is used, but an understanding of psychology is very important for athletes.

Contribution of Anxiety to the Achievement of Central Java Chess Athletes

From the explanation of the results above, it has been explained that the average value that has been obtained is the value of high and low levels of anxiety from each sub-component, it is anxiety (somatic anxiety, and cognitive anxiety), pulse, and blood pressure (systolic and diastolic).

Somatic anxiety is a response to physiological changes associated with high arousals, such as an increase in heart rate and blood pressure. According to WHO, the blood pressure limit that is still considered normal is less than 130/85 mmHg, whereas if it is more than 140/90 mmHg it is stated as hypertension, then between these values is referred to as high normal (Saputri & Rahayu, 2017).

In this study, it was found that anxiety has an anxiety contribution to the achievement of Central Java chess athletes. The high level of anxiety experienced by athletes before competing can improve performance during competition. As stated in the drive theory, the higher the level of anxiety of an athlete, the better the athlete's appearance will be (Anira et al., 2017). Dimensions of competitive anxiety tend to be influenced by gender, type of sport, and level of ability.

Based on the results of interviews with X16 Percasi athletes in Semarang City who also won

2 gold medals at the Provincial Championship in 2021, said that he sweated coldly and excessively when he was under pressure or in a losing position. Some athletes experienced headaches after a match, and if the athlete loses the match, they will get more headaches, and make the athlete not excited in the next round.

In contrast to the X16 athletes, Percasi athletes in Semarang City, who also won 2 gold medals at the Provincial Championship in 2021 for the Junior Female group, revealed that she often experienced cold or excessive sweating due to panic or nervousness when she met an opponent who has a master's title or high rating. For this athlete herself, she has experienced muscle tension (cramps) in her legs during competition, because she sat for too long during the match.

This research is in line with research by (Wattimena, 2015), which shows that high anxiety affects athletes' achievement. Meanwhile, in general, the higher the anxiety will make the achievement is lower. On the other hand, the lower the anxiety, the achievement will be higher. For the joint relationship in this study between achievement motivation variables and anxiety variables on archery achievement, the contribution was 96%. The matters that support it are very diverse, such as training, technique, physical, strategy, and psychological aspects.

Contribution of Concentration to the Achievement of Central Java Chess Athletes

In this study, it has been found that concentration has a contribution to the achievement of Central Java chess athletes. The results of this study is in line with research by (Nusufi, 2016) under the title "Training Concentration in Sports". The result of the study revealed that concentration is the ability to focus on a task without being distracted by internal or external stimuli, while its implementation refers to a broad dimension and focuses on certain tasks. While attention is the initial process towards concentration, therefore, there will be no concentration without prior attention. That is, attention and concentration are a series of continuous processes towards an object that is observed by the athlete.

Concentration is the ability to focus on a task without being distracted and influenced by internal or external stimuli (Mukhtar et al., 2017). Another opinion on concentration put forward by Gauron (Komarudin, 2015) is a condition in which the athlete has full awareness and is focused on a certain object that is not easily swayed. Therefore, concentration is needed in sports.

From the explanation above, the researcher observed the appearance of chess athletes at

PON XX Papua 2021 during the 2nd Round Fast Chess Match against Papua which was won by a female athlete from Central Java with a score of 2-1. Seeing the situation and conditions against Papua was very detrimental to the Central Java PON chess athlete team, because they felt disturbed, unfocused, and could not concentrate fully. This is because the athletes feel terrorized by the presence of Papuan chess players, Papuan Chess Officials, and Managers surrounding the venue for Central Java's athletes against Papua themselves. This reduces the confidence and mentality of the athletes of the Central Java PON Chess Team, especially the female team, and disturbs the minds and focus of the athletes in the next round.

For athletes, conditions like this will be a challenge to test their abilities. Not only a few athletes who experience the opposite matter, they become desperate and this situation makes athletes will not only fail in technical terms but also non-technical factors such as mental or psychological aspects such as motivation, self-confidence, factors controlling the situation, and there will increase the emergence of negative emotions. In competitions, it is natural for athletes to feel tense, afraid, anxious, especially facing a stronger or more balanced opponent and also stressful situations (Gunarsa, 1989).

The use of concentration in the field of sports, for example in the sport of diving, high concentration is needed in the harmony of movement in jumping. In swimming, high concentration is also needed, especially at the beginning. Because of the championships that are often held at this time, many of them use one start, therefore, it can be fatal for short-distance swimmers on their achievement if they do not concentrate at the start. Likewise in the chess sport, chess players must have high concentration and always focus, especially in the middle of the game, therefore, they will not make a mistake in stepping over the chess pieces to be played.

From the results of interviews with X10 Percasi athletes, Semarang City, who won the Female's junior silver medal at the Provincial Championship in 2021, said that during the match suddenly negative thoughts appeared, such as being depressed and afraid of losing which was always in the athlete's mind. It makes the athlete not focus and makes playing less than optimal. Basically, concentration is a person's ability to control desires, thoughts, and feelings (R. Novianti., 2019).

Contribution of IQ (Intelligence Quotient), Anxiety, and Concentration to the Achievement of Central Java Chess

Athletes

In this research, it has been found that IQ (intelligence quotient), anxiety, and concentration have a contribution to the achievements of Central Java chess athletes. This result is in line with research by (Irwanto, 2019), under the title "Profile of the Role of Sports Psychology in Improving Athletes' Achievement in Serang-Banten Towards Champion". The results of this study indicate that (1) as a psychological profile of athletes in the form of a general description of personality, intellectual potential, and the function of thinking power associated with sports. (2) Skills training and mental endurance should also be focused on the three psychological aspects of athletes, there are aspects of mind, aspects of desire, and aspect of emotional must always strive for a harmonious relationship. (3) Very strategic coaching that can be used as a source of coaching for national athletes in Serang-Banten who can achieve achievements at national, regional, and international levels. (4) The coach who handles the coaching of athletes in Serang-Banten must have competence with certification that is standardized and accredited. In addition to being in the field of sports, they must also be able to understand the psychology of the athletes. (5) To improve athlete competition in Serang-Banten, as a regulation of the promotion system for outstanding athletes and coaches or even contrarily, athletes and coaches who do not show achievement are subject to a relegation system to make them more competitive.

Based on an interview with one of the chess coaches in Semarang, Joko Santoso, MN (National Master) who is also an athlete who won a bronze medal at the 2016 West Java PON, revealed that the mentality of athletes, especially chess athletes, really needs to be fostered, especially during training. Which junior athletes should be trained with adults. Because of this training, the mentality of junior athletes grows and they are confident when they are going to compete. The training program provided by the trainer to the athletes is in the form of theory, middle, ending, and training to face opponents using chess clocks. In the sport of chess, there is also drill with crunch hours. Athletes also practice during training when facing a time crisis, therefore, when competing, athletes remain calm and do not panic.

The training program provided during the Covid-19 pandemic is still the same as other trainers, by providing training or sparring through an online application, namely lichess or chess.com. Lichess is an online chess application program or server all for competing against opponents, analyzing mistakes, and practicing sparring to gain

experience during the pandemic through online training.

Mental training given to athletes is carried out in stages based on the time of administration and level of preparation. The closer to competition time, the higher the level of mental training provided. Sports psychology contains dimensions of human action and behavior, where the motoric, cognitive, and affective components play a major role in producing different patterns of movement. Sports psychology studies various psychological realities faced by a person in the context of sports activities.

CONCLUSION

The results of research and discussion on the Contribution of IQ (Intelligence Quotient), Anxiety, Concentration on Achievement of Chess Athletes in Central Java can be concluded as follows: The results of Sig showed a value of $0.020 < 0.05$, which means that there is a contribution of IQ (intelligence quotient) to the achievement of chess athletes in Central Java with the contribution of the variable IQ (intelligence quotient) of 22.3%. Sig results showed a value of $0.033 < 0.05$, which means that there is a contribution of anxiety to the achievement of Central Java chess athletes with a contribution of variable anxiety of 32.8%. The result of Sig showed the value of $0.007 < 0.05$, which means that there is a concentration contribution to the achievement of Central Java chess athletes with the contribution of the concentration variable being 44.3%. Sig results show a value of $0.041 < 0.05$, which means that there is a contribution of IQ (Intelligence Quotient), anxiety, and concentration to the achievements of Central Java chess athletes with the contribution of the variable IQ (Intelligence Quotient), anxiety, and concentration of 59.5%.

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