JSSF (12) (1) (2026)

Journal of Sport Sciences and Fitness

https://journal.unnes.ac.id/journals/jssf



The Self-Confidence of UKM Perisai Diri Pencak Silat Athletes at UPI in Facing Competitions as Seen From Their Level Of Anxiety

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Article's Info

Article's History:
Submitted April 16, 2026
Revised April 24, 2026
Accepted 24 June, 2026

Keywords:
cognitive anxiety, somatic anxiety, self-confidence, pencak silat, CSAI-2R

DOI:
https://doi.org/10.15294/jssf.v12i1.47743

Abstract

Background: Pencak silat is a competitive martial art originating from Indonesia that relies not only on physical strength and technique but also requires intense focus and concentration. Athletes often face immense pressure, and an inability to control their emotions can lead to a decrease in their performance. **Objectives:** This study aims to empirically analyze the relationship between cognitive anxiety and somatic anxiety and self-confidence among athletes in the UKM Perisai Diri UPI, particularly those facing the "double burden" of academic and athletic demands. **Method:** This study employed a quantitative method with a descriptive-correlational design; data were collected using the CSAI-2R questionnaire. Given that the data distribution was not normal ($P < 0.05$), Spearman's rank correlation (r_s) was used as the primary analysis. **Result:** The results showed a very strong and significant negative correlation, including: cognitive anxiety and athlete self-confidence ($r_s = -0.938; P < 0.01$), somatic anxiety and self-confidence ($r_s = -0.882; P < 0.01$). In addition, as many as 63.4% of athletes had high self-confidence, 53.3% managed to control mental anxiety. However, simultaneously, the remaining 26.7% experienced high levels of somatic anxiety (average score 26.17). **Conclusion:** The strong and significant correlation between the level of anxiety and self-confidence among UPI Perisai Diri UKM athletes indicates that the mental condition of the athletes is very sensitive to competitive stress, even though they have a high level of self-confidence.

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PISSN 2252-6528
EISSN 2745-5718

INTRODUCTION

Pencak silat is a competitive martial art originating from Indonesia that relies not only on physical strength and technique but also requires intense focus and concentration (Widiawati et al., 2025). As a high-performance sport that serves as Indonesia's flagship on the international stage, pencak silat demands that athletes be able to make tactical decisions within seconds during competition amid intense on-court pressure (Burhanuddin et al., 2023). Pencak silat matches have unique characteristics because they involve direct physical contact (Bella & Hikmawati, 2022). Athletes often feel anxious about failure before the match or during the preparation phase. In these conditions, mental readiness often becomes the key differentiator between victory and defeat,

where the ability to manage emotions is a determining factor for optimal performance (Domínguez-González et al., 2024).

One of the psychological variables considered a key pillar of performance is self-confidence. Self-confidence is an athlete's subjective belief in their ability to complete specific tasks during a competition (Aliberti et al., 2024). Athletes with solid self-confidence are more likely to demonstrate more stable concentration and focus, high persistence, and efficiency in the execution of technical movements (Trpkovici et al., 2023). Conversely, low self-confidence leads to self-doubt, which hinders offensive initiative and causes athletes to perform below their true potential (Hamblin & Crisp, 2022).

However, the dynamics of self-confidence are strongly influenced by the level of anxiety during a match. (Peng et al., 2025). According to the Multidimensional Anxiety Theory, competitive anxiety has two main dimensions: cognitive anxiety, which is linked to negative thought patterns, and somatic anxiety, which involves physical or physiological symptoms (Chang et al., 2025). The relationship between anxiety and self-confidence is complex and constantly changing (Huang et al., 2025). This theory suggests that uncontrolled cognitive anxiety can directly undermine an athlete's self-confidence, while excessive somatic anxiety can disrupt an athlete's motor coordination in martial arts techniques, leading to a drastic decline in performance, such as stiff movements and an inability to make decisions (Kamal Ariffin et al., 2025).

This can be seen in the athletes of UKM Perisai Diri at Universitas Pendidikan Indonesia (UPI). As an organization known as one of the most successful units, the athletes face two serious challenges: maintaining their tradition of winning while also being required to fulfill their obligations as students (Ridho Setiawan et al., 2022). The majority of athletes face challenges during competitions, such as negative perceptions of their opponents' abilities, fear of failure, and even physical symptoms caused by anxiety, such as increased heart rate, muscle tension, cold sweats, sweaty palms, etc. These conditions result in significant difficulties in maintaining their self-confidence during competition (Barata Yuda, 2024).

Although there has been extensive research on the relationship between anxiety and self-confidence, a research gap remains. Most studies focus on professional athletes up to the national level, while research on college athletes who must balance athletic performance with academic demands remains limited. Furthermore, studies focusing on self-confidence related to cognitive and somatic aspects in contact sports such as pencak silat are still scarce. (Rohmah et al., 2025).

The novelty of this study lies in its in-depth analysis of the complex relationship between anxiety and self-confidence levels among college athletes practicing the martial art of pencak silat. This differs from previous studies, which generally focused on national-level athletes, professional athletes, or athletes in team sports (such as soccer, basketball, etc.). This study explores the psychological dynamics in physical contact sports (direct combat) characterized by a higher risk of injury and more significant sensory pressure. Furthermore, the inclusion of the dual-load variable—balancing athletic performance and academic responsibilities in college—offers a new perspective

on understanding the consistency of athletes' self-confidence amidst the demands of real-world competition.

Given the importance of this issue, this study aims to empirically examine the relationship between anxiety levels and self-confidence among all athletes in the Perisai Diri UPI student club. This study builds upon the "Multidimensional Anxiety Theory" within the realm of the Indonesian martial art pencak silat. The results of this research are expected to serve as an evidence-based foundation for coaches in designing psychological intervention protocols for athletes, such as cognitive coping strategies and somatic regulation, to mitigate the destructive effects of anxiety and maximize athletic performance during competition.

METHOD

This study employed a quantitative research method with a descriptive-correlational design to analyze the level of self-confidence among athletes from the Perisai Diri Student Club at the Indonesia University of Education (UPI), as viewed through their anxiety levels. The research subjects consisted of 30 active athletes, including 21 male and 9 female athletes; this sample was selected from athletes who were preparing for the Satria Airlangga Cup championship. The technique used was total sampling to ensure that the data obtained was representative and objective, given the limited sample size (N = 30) (Bella & Hikmawati, 2022). The inclusion criteria for participants were as follows: (1) at least 18 years of age, (2) active athletes in the UPI Perisai Diri student club, (3) currently in the competition preparation phase, (4) willing to participate as respondents.

The data collection instrument used the CSAI-2R (Competitive State Inventory-2 Revised) questionnaire, consisting of 17 items, each of which uses a 4-point Likert scale: (1) strongly disagree, (2) disagree, (3) agree, (4) strongly agree. This questionnaire was selected because it has undergone a more rigorous confirmatory factor analysis and is more reliable compared to the previous questionnaire, which contained 27 items; thus, the CSAI-2R instrument demonstrates stronger psychometric characteristics. However, reliability testing must be conducted on the instrument to ensure its consistency (Putra & Guntoro, 2022).

Given the differences in the number of items in the somatic dimension within the instrument, level categorization will be performed using a standardized score ranging from 10 to 40. The categorization of anxiety and self-confidence levels is determined based on the score ranges presented in Table 1.

Table 1. Anxiety and Self-Confidence Levels Scores

Score Range	Category
10-17	Very Low
18-25	Low
26-33	High
34-40	Very High

Table 1 shows the categorization levels of the variables, divided into four levels, ranging from "very low" with a score range of 10-17, to "very high" with a score range of 34-40. The determination

of the score ranges uses consistent intervals at each level. This standardization allows researchers to accurately map the frequency distribution of each sub-variable on the CSAI-2R instrument in accordance with internationally validated standards (Cox et al., 2003).

For the next stage, the collected data will be systematically analyzed using SPSS (Statistical Package for the Social Sciences) software, beginning with a Cronbach's Alpha reliability test to ensure the consistency of the measurement instrument $(\alpha \geq 0.70)$ (Trpkovici et al., 2023). Furthermore, the data undergoes a descriptive analysis stage to examine data characteristics through the mean, standard deviation, and frequency distribution. Before conducting hypothesis testing, a normality test using the Shapiro-Wilk test is first performed to determine which statistical method will be applied. If the test results indicate a normal distribution $(P > 0.05)$, a parametric test in the form of Pearson's Product-Moment correlation will be used; conversely, if the data show a non-normal distribution($P < 0.05$), the non-parametric Spearman's Rank correlation test will be used.

RESULT AND DISCUSSION

Result

Before conducting the descriptive analysis, the reliability of the CSAI-2R questionnaire was first assessed. The instrument's reliability was evaluated using Cronbach's Alpha to ensure internal consistency across each dimension. A value of α ≥ 0.70 was set as the threshold for good reliability (Trpkovici et al., 2023). The results of the instrument validation are presented in Table 2.

Table 2. Cronbach's Alpha Reliability Test

Variable	number of items	Cronbach's Alpha	Description
Cognitive Anxiety	5	0.957	Very Reliable
Somatic Anxiety	7	0.931	Very Reliable
Self-Confidence	5	0.967	Very Reliable
Total Instrument	17	0.952	Very Reliable

A reliability test was conducted on the CSAI-2R instrument to measure the extent to which the items in the questionnaire exhibit stable internal consistency. Based on statistical criteria, an instrument is considered reliable if it has a Cronbach's Alpha value of ≥ 0.70, and is categorized as highly reliable if that value exceeds 0.90. The test results indicate that all three dimensions of the instrument exhibit very high coefficient values. The Cognitive Anxiety dimension achieved an α value of 0.957, Somatic Anxiety at $\alpha = 0.931$Self-Confidence reached an α value of 0.967. Cumulatively, the entire instrument, consisting of 17 items, has an average alpha coefficient of 0.952. These results confirm that the CSAI-2R instrument possesses excellent reliability based on the testing conducted by Cox et al. (2003). It is highly suitable for collecting research data from pencak silat athletes of the Perisai Diri UPI student club as they prepare for competitions.

Descriptive Analysis

Data analysis was conducted on 30 athletes from the UPI Perisai Diri student club (21 male and 9 female) who were in the preparation phase for the 2026 Satria Airlangga Cup. Data were collected using the CSAI-2R, which had undergone standard score transformation (10–40). The table

below presents an overview of the athletes' anxiety levels (cognitive and somatic) and self-confidence:

Table 3. Mean, Standard Deviation, Min, Max

Variable	Mean	SD	Min	Max	Category
CA	24.13	11.362	10	40	Low
SA	26.17	7.442	14	37	High
SC	27.60	11.391	10	40	High
Average Cumulative	25.97	-	-	-	moderate

CA: Cognitive Anxiety, SA: Somatic Anxiety, SC: Self-confidence

Based on the data analysis results presented in Table 3, a multidimensional picture of the mental state of the athletes from the UKM Perisai Diri before the competition was revealed. In general, the athletes' self-confidence levels fell into the high category, with an average score of 27.60. This indicates that the study participants have strong confidence in their technical abilities and physical preparation for the upcoming competition.

The analysis of anxiety dimensions revealed contrasting findings between psychological and physical aspects. The level of cognitive anxiety experienced by the athletes fell into the low category, as evidenced by a mean score of 24.13, indicating that the athletes were able to manage negative thinking or fear of failure. In contrast, the athletes' somatic anxiety levels fell into the high category, with an average of 26.17. This indicates that although all athletes were mentally prepared, their bodies exhibited strong physiological responses to stress, including increased heart rate, muscle tension, sweaty palms, and other physical symptoms.

Nevertheless, it is important to note that while high self-confidence scores, coupled with high levels of somatic anxiety, are common in contact martial arts—which trigger an increase in adrenaline in the body—this is still balanced by self-confidence to prevent it from interfering with performance. Based on the cumulative psychological conditions of the athletes, the average score was 25.97. This figure indicates that the athletes' conditions fall between the "Low" and "High" categories; thus, it can be concluded that the athletes' mental readiness is at a medium level.

The high standard deviation in the Cognitive Anxiety (11.362) and Self-Confidence (11.391) variables compared to Somatic Anxiety (7.442) indicates that athletes' mental perceptions of the competition are far more varied (heterogeneous) compared to their physical responses, which tend to be more uniform (homogeneous) when facing competitive stress.

Frequency Distribution of Anxiety Levels and Self-Confidence

To provide a more in-depth understanding of the psychological state of athletes in the UKM UPI Perisai Diri, scores were categorized based on the CSAI-2R (Cox et al., 2003) criteria. The frequency distributions and percentages for the variables of cognitive anxiety, somatic anxiety, and self-confidence are presented in the following figure:

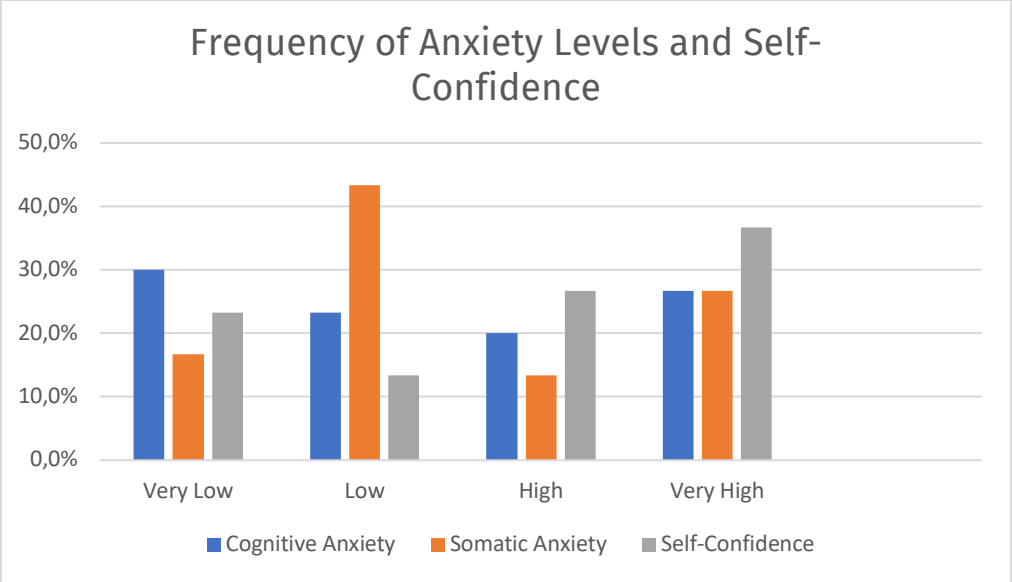


Figure 1. Frequency Distribution Graph of Anxiety Levels and Self-Confidence

Based on the results shown in the bar chart in Figure 1, it can be concluded that: first, cognitive anxiety had the highest percentage in the "very low" category at 30.0%, and the second-highest percentage in the "low" category at 23.3%. Cumulatively, more than half of the athletes (53.3%) had manageable levels of mental anxiety. This indicates that psychologically, the majority of athletes are not dominated by negative thoughts or fear of failure ahead of the Satria Airlangga Cup 2026. However, 26.7% of athletes fall into the very high category, requiring special attention due to the potential for impaired concentration during competition.

Second, regarding the dimension of somatic anxiety levels, the cumulative average of athletes' somatic anxiety variables was in the high category (26.17) and the frequency distribution showed a heterogeneous profile so that as many as 43.3% of athletes were able to control and neutralize the physiological symptoms caused by their somatic anxiety. However, there was also a significant group that experienced very high physiological symptoms of anxiety with a percentage of 26.7% of athletes. This high average score was produced by the group of athletes with extreme scores, indicating that there are still some athletes who react to the stress of competition with a much more intense physical response than their peers.

Third, the self-confidence variable showed a positive profile, with data concentrated in the "very high." (36.7%) and "high" (26.7%) categories. Cumulatively, 63.4% of the athletes demonstrated strong self-confidence. High self-confidence is a crucial asset for athletes of the UPI Perisai Diri student club, as theoretically, high self-confidence functions as a protective factor (buffer) that can mitigate the negative impact of both cognitive and somatic anxiety on competition performance.

Normality Test

Table 4. Normality Test

Variable	Shapiro-Wilk	Sig. (p-value)	Description
Cognitive Anxiety	0.877	0.02	Non Normal
Somatic Anxiety	0.852	0.01	Non Normal
Self-confidence	0.859	0.01	Non Normal

Before conducting the hypothesis test, a test of the assumptions of the analysis was performed to ensure that the data were suitable for parametric statistical analysis, specifically a Shapiro-Wilk normality test on the 30 study subjects. Table 4 shows the results of the normality test using the Shapiro-Wilk test, indicating that all three variables have a significance level of $P < 0.05$. Therefore, the data are deemed not to be normally distributed (non-normal). Consequently, the hypothesis testing originally planned to use Pearson's product-moment correlation was switched to Spearman's rank correlation, a nonparametric statistic. The use of Spearman remains relevant for measuring the strength and direction of the relationship between variables without having to meet the assumption of normality.

Spearman's Rank correlation test

Table 5. Spearman Rank Correlation Test $(N = 30)$

	Correlation Coefficient	Sig. (2- tailed)	Description
CA → SC	-0.938 **	0.000	Significant (very strong)
SA → SC	-0.882 **	0.000	Significant (very strong)

CA: Cognitive Anxiety, SA: Somatic Anxiety, SC: Self-confidence

Since the assumption of normality was not met, hypothesis testing was performed using nonparametric statistics, specifically the Spearman rank correlation test (rs). The results of the correlation analysis between cognitive anxiety and somatic anxiety, and athletes' self-confidence ($N = 30$) are shown in Table 5. The results indicate a very strong negative correlation between cognitive anxiety and self-confidence in athletes ($rs = -0.938; P < 0.01$). This very high correlation coefficient indicates that cognitive anxiety or mental worry has a very drastic impact; the higher the psychological pressure and negative thoughts experienced by athletes, the more significantly their self-confidence will decrease. A similar phenomenon was observed in the relationship between somatic anxiety and self-confidence, yielding a correlation coefficient of ($rs = -0.882$) with a significance level of 0.000 $(P < 0.01)$. These findings confirm the existence of a very strong negative relationship, wherein the physical manifestations of anxiety—such as muscle tension and physical restlessness—are inversely related to athletes' self-confidence. Overall, these results demonstrate that both the cognitive and somatic dimensions of anxiety are critical determinants that can significantly reduce athletes' self-confidence stability before a competition.

Discussion

The purpose of this study is to analyze the dynamics of the psychological state of athletes in the Perisai Diri UPI student club as they prepare for a competition. The results of the descriptive analysis indicate that the athletes possess a unique mental state characterized by high self-confidence, evidenced by an average score of 27.60; however, concurrently, their levels of somatic anxiety are also high, with an average score of 26.17. This indicates that, although the athletes possess strong self-confidence in their technical mastery and adequate physical readiness, their bodies still exhibit physiological symptoms such as increased heart rate, muscle tension, sweaty hands, etc. These symptoms are common because they are physiological responses caused by high anxiety levels, and this phenomenon is common in sports that rely on physical contact, one of

which is the martial art pencak silat. This causes athletes to instinctively enter a “fight or flight” state; this mechanism triggers the release of the stress hormone epinephrine (or adrenaline), putting them on high alert to face threats, and this also causes athletes to experience pressure regardless of their level of preparedness when facing competition. (Makarowski, 2022).

The findings from the Spearman’s rank correlation analysis further support the argument that anxiety levels affect athletes’ mental stability; the results show a negative correlation between cognitive anxiety and athletes’ self-confidence of -0.938, as well as between somatic anxiety and self-confidence of -0.882. The values of these two variables approach -1, indicating that even minor fluctuations in negative thoughts or feelings of discomfort experienced by athletes can lead to a drastic decline in their self-confidence. This aligns with the “Multidimensional Anxiety Theory” proposed by Martens et al. (1990) in their paper titled “Competitive Anxiety in Sports,” which explains that the cognitive and somatic dimensions are the primary barriers to self-efficacy (Tossici et al., 2024).

Comparing with previous studies conducted by Aliberti et al. (2024) and Peng et al. (2025), it is confirmed that anxiety is a universal challenge in competitive sports. However, the significance of this study lies in the “double burden” profile experienced by athletes. As student athletes, athletes also face the challenge of balancing their athletic performance with fulfilling their academic responsibilities (Falah Tri Nur Afifah et al., 2025). Although the instrument used in this study only measured competitive anxiety levels and not academic stress, the impact of this double burden is clearly visible in the cognitive dimension of anxiety. The accumulated mental fatigue from academic obligations as a student creates a psychological "spillover effect," where emotional phenomena, attitudes, or behaviors from one domain (sports) influence or spill over into another domain (academics) or vice versa, resulting in reduced cognitive capacity and emotional resilience in athletes (Postema et al., 2025). As a result, when entering the competitive phase, this mental fatigue underlies the fear of failure and negative mindsets experienced by athletes, making their self-confidence vulnerable to a drastic decline, resulting in suboptimal performance during competitions. (Schorb et al., 2023).

The results of this study indicate that many athletes fail to perform at their best during competitions. Although athletes demonstrate high self-confidence during training, a lack of emotional regulation during the pre-competition period can potentially lead to somatic and cognitive symptoms that may override their self-confidence, resulting in a drastic decline in self-confidence. The results of the correlation test indicate that athletes from the UKM Perisai Diri UPI exhibit relatively high mental vulnerability. Self-confidence alone is insufficient as a safeguard against the psychological impacts caused by anxiety levels; therefore, specialized psychological interventions such as mindfulness, biofeedback, stress and burnout management, mental imagery, Progressive Muscle Relaxation (PMR), and others are necessary. This is to reduce their stress levels before competitions so that the athletes can perform at their best. (di Fronso & Budnik-Przybylska, 2023).

CONCLUSION

The significant and strong negative correlation between anxiety levels (cognitive and somatic) and self-confidence among athletes at the Perisai Diri Student Club at the Indonesia University of Education indicates that athletes' anxiety levels—manifested as negative thoughts and physiological reactions—remain relatively high, leading to a decline in their self-confidence. The athletes' psychological profiles suggest they are highly self-confident; however, this strong correlation indicates that their mental state remains highly sensitive to changes in competitive stress. Thus, the higher the athletes' anxiety levels, the more their self-confidence diminishes.

AI DISCLOSURE STATEMENT

The authors declare that no generative AI tools were used to generate, analyze, interpret, synthesize, or write the scientific content of this manuscript.

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