

## **Abstract**

### **Title:**

Cognitive level as a determinant of performance in combat sports

### **Objectives:**

The main objective of this thesis is to determine the impact of cognitive function levels on performance in combat sports, specifically Brazilian Jiu-Jitsu (BJJ). The work focuses on comparing the cognitive abilities of professional and semi-professional fighters, with particular emphasis on reaction times, decision-making accuracy, and variability in motor responses.

Another goal is to identify potential differences in these abilities between the two groups and to understand how these differences might influence their sports performance.

### **Methods:**

In our study, we used standardized cognitive tests to measure reaction times, decision-making Accuracy, and variability in motor responses. The data were analyzed using statistical methods, including the Mann-Whitney test for comparing independent samples.

### **Results:**

The results showed that professional fighters achieved higher scores in cognitive tests compared to semi-professional fighters. Surprisingly, however, the professional fighters had longer reaction times than the semi-professional fighters. Semi-professional fighters exhibited greater variability in motor responses and lower accuracy in decision-making tests.

### **Keywords:**

reactions, motor learning, jiu jitsu, technical level

