



# Structural Equation Modeling of the Effect of Sport Mental Energy on Athletic Success: The Mediating Role of Cognitive Flexibility in Iraqi Volleyball Players

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E d i t o r	R e v i e w e r s
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## 1. Round 1

### 1.1 Reviewer 1

Reviewer:

The opening paragraph effectively situates mental energy within sport psychology but lacks a clear justification for focusing on Iraqi volleyball players. Adding two to three sentences explaining sociocultural or developmental reasons for selecting this population would strengthen contextual relevance.

While the paragraph acknowledges limited research in “developing countries,” it should identify specific gaps such as the scarcity of SEM-based or mediation-based models in Arab or Middle-Eastern sport populations. Including two to three comparative references would make the research gap more compelling.

The text notes “230 male athletes selected through a convenience sampling method.” This needs a rationale for the adequacy of sample size relative to SEM requirements (e.g., 10–20 participants per parameter). Power analysis or model identification logic should be briefly mentioned.

For the Sport Success Scale, only face content is described. The authors should cite original psychometric validation or report internal consistency (Cronbach's  $\alpha$  or composite reliability) for the current sample to confirm scale reliability.

The Cognitive Flexibility Inventory and Sport Mental Energy Scale were originally developed in non-Arabic contexts. The paper should report translation procedures (forward-back translation, pilot testing, or expert validation) to ensure linguistic and cultural appropriateness for Iraqi athletes.

Some sub-scale ranges (e.g., Perception of Multiple Alternatives: 2–14) appear inconsistent with a 7-point Likert format. Please verify scoring accuracy and clarify whether these reflect item means or summed totals to maintain transparency.

The text states that assumptions such as “normality and multicollinearity were examined and confirmed.” Specify which statistical tests (e.g., Mardia's coefficient, VIF values) were used to verify these assumptions; this increases methodological rigor.

The phrase “all model fit indices exceed the acceptable thresholds” could be improved by adding confidence intervals or citing cutoff criteria sources (e.g., Hu & Bentler, 1999) to substantiate the “acceptable” claim.

The statement “AME may increase the availability of controlled processing and top-down regulation” implies causality, yet the design is cross-sectional. Revise to reflect correlational language (e.g., “AME was associated with greater top-down regulation”) to preserve methodological accuracy.

Authors revised the manuscript and uploaded the updated document.

## 1.2 Reviewer 2

Reviewer:

The discussion of executive function—encompassing cognitive flexibility, inhibitory control, and working memory is accurate but largely descriptive. The paragraph would benefit from a theoretical model (e.g., Miyake's unity/diversity model or Baddeley's working memory theory) to frame how these constructs interrelate within the SEM.

The statement “Cognitive flexibility facilitates quick decision-making during unpredictable ball trajectories and opponent maneuvers” could be supported by recent neurocognitive or kinematic research on volleyball-specific decision-making tasks to better demonstrate ecological validity.

The sentence “Cognitive flexibility facilitates adaptive responses by allowing athletes to reframe challenges...” should explicitly articulate the hypothesized causal direction—whether mental energy enhances flexibility or flexibility augments energy—to prevent circular reasoning.

The statement “ $R^2 = 0.77$ , suggesting strong explanatory power” is impressive but may indicate overfitting given the limited sample and potential multicollinearity. Consider discussing cross-validation or model replication to temper interpretation.

The article refers to Figure 1 but does not include detailed path coefficients or significance indicators in the visual. Enhancing the figure with standardized  $\beta$  values and p-levels would provide a clearer depiction of relationships.

The discussion begins by restating statistical results. Replace redundant numerical reporting with conceptual synthesis—for instance, explain how mental energy facilitates flexibility through self-regulation, motivation, or attentional control mechanisms.

Authors revised the manuscript and uploaded the updated document.

## 2. Revised

Editor's decision after revisions: Accepted.

Editor in Chief's decision: Accepted.