



## Constructing and Standardizing the Sunk Cost Fallacy Scale for Coaches from the Perspective of Youth Football Players

<sup>1</sup>M. M. Mustafa Hussein Mughataz\*

\*Corresponding Author: Mughataz, Mustafa Hussein e-mail: [mustafa.hu@uomisan.edu.iq](mailto:mustafa.hu@uomisan.edu.iq)

<sup>1</sup>College of Physical Education and Sports Sciences, University of Maysan, Iraq

### Abstract

**Objectives.** This study aimed to construct and standardize a sunk cost fallacy scale for football coaches as perceived by youth football players in the southern region.

**Materials and Methods.** A descriptive correlational design was used. The population comprised 213 youth football players; purposive sampling was applied. The scale construction sample included 100 players, a pilot sample included 13 players, and a standardization sample included 100 players. Item development was based on literature review and expert judgment using a five-point Likert response format. Psychometric testing included item discrimination (independent-samples t-test for upper vs. lower 27%), item-total correlations (Pearson), dimension-total correlations, and reliability estimation using Cronbach's alpha and split-half (Spearman-Brown). Analyses were conducted with SPSS version 25.

**Results.** The final scale contained 25 items across five dimensions (team and player management; training and injuries; tactical decisions during the match; strategic planning; coach's personality). All items demonstrated acceptable discrimination and significant item-total correlations ( $p < 0.05$ ). Reliability was high (Cronbach's alpha 0.876; Spearman-Brown split-half 0.943).

**Conclusions.** The instrument provides a standardized tool to assess sunk cost fallacy related to coach retention decisions from the perspective of youth players and may support evidence-based administrative decisions and further research.

**Keywords:** Sunk Cost Fallacy; Football; Coaches; Youth Players; Scale Development

### Introduction

Effective management in sport organizations requires timely, evidence-based decisions regarding personnel and program continuity. One cognitive bias that can undermine such decisions is the sunk cost fallacy, in which prior investments of money, time, or effort increase the likelihood of persisting with an ineffective choice, even when objective indicators suggest change is warranted. In football, coach contracts and team performance evaluations often involve substantial financial commitments and reputational stakes; consequently, decision makers may hesitate to terminate underperforming agreements because resources have already been spent. However, continued commitment may produce greater losses through deteriorating results, reduced player development, and missed competitive opportunities. Despite its practical relevance, sunk cost thinking is rarely assessed systematically in sport settings, and existing measures are not tailored to the realities of youth football clubs and coach-player interactions. A context-specific, standardized instrument is therefore needed to identify the extent to which sunk cost perceptions influence

judgments about coaches and to support targeted administrative interventions. Accordingly, this study constructed and standardized a sunk cost fallacy scale for coaches from the perspective of youth football players in the southern region.

## Materials and Methods

### Study Participants

The research population comprised 213 youth football players from clubs in the southern region. Purposive sampling was used. The scale construction sample consisted of 100 players. A pilot study was conducted with 13 players from the same population but outside the construction sample. The standardization (norming) sample consisted of 100 players.

### Study Organization

Scale construction followed standard instrument-development procedures. The construct was defined based on relevant literature and refined through expert consultation in management, testing, and sport psychology. Five dimensions were proposed and retained when expert agreement reached at least 70%. An initial pool of statements was drafted to cover all dimensions and reviewed by experts for relevance, clarity, and suitability of response options. Items were retained when expert agreement exceeded 75%. A pilot test evaluated readability, completion time, and administration procedures. The response format used a five-point Likert scale: Strongly Agree, Agree, Sometimes, Disagree, and Strongly Disagree.

### Statistical Analysis

Analyses were conducted using SPSS version 25. Item discrimination was examined by comparing the upper and lower 27% groups using independent-samples t-tests. Internal consistency was assessed using item-total correlations (Pearson) and correlations between each dimension and the total score. Reliability was estimated using Cronbach's alpha and the split-half method with Spearman-Brown correction. Statistical significance was set at  $p < 0.05$ .

## Results

The final scale comprised 25 items distributed across five dimensions: (1) team and player management, (2) training and injuries, (3) tactical decisions during the match, (4) strategic planning, and (5) coach's personality. Item discrimination indices indicated that statements successfully differentiated between high and low scorers, and item-total correlations were statistically significant ( $p < 0.05$ ). Dimension-total correlations were also significant, supporting the coherence of the scale structure.

Table 1 presents the distribution of respondents across interpretive levels for the standardization sample ( $n = 100$ ).

Level	Score Range	Frequency	Percentage	Rank
Weak	72-82	16	16%	3
Acceptable	83-93	20	20%	2
Average	94-104	14	14%	4
Good	105-116	38	38%	1
Very Good	117-125	12	12%	5

Table 1. Levels of respondents' scores on the sunk cost fallacy scale.

Reliability estimates indicated strong internal consistency (Cronbach's  $\alpha = 0.876$ ). Split-half reliability was also high after Spearman–Brown correction (0.943), supporting the stability of the instrument for use in similar populations.

## **Discussion**

The results support the development of a multidimensional tool that captures youth players' evaluations of coach-related practices linked to sunk cost judgments. In practice, sunk cost bias may contribute to persistence with ineffective coaching agreements when prior payments or commitments are weighted more heavily than current evidence. Because time and effort are not recoverable, delayed corrective actions can amplify competitive and developmental losses. Using a standardized measure can help clubs and sport administrators identify risk profiles, monitor perceptions over time, and inform decisions that prioritize current performance and long-term development rather than past investments.

## **Conclusions**

This study developed and standardized a 25-item sunk cost fallacy scale for evaluating coaches from the perspective of youth football players. The instrument demonstrated acceptable discrimination, coherent dimensional structure, and high reliability. It can be used to support evidence-based administrative decisions and future research across sport settings.

## **Acknowledgment**

The author thanks the participating clubs and youth players for their cooperation.

## **Conflict of interest**

The author declares no conflict of interest.

## **References**

- Soman, D. (2001). The mental accounting of sunk time costs: Why time is not like money. *Journal of Behavioral Decision Making*, 14(3), 169–185. <https://doi.org/10.1002/bdm.370>
- Reda, K. K. (2011). *Research methods in education and psychology*. Al-Nuaimi Office.
- Ahmed, M. L. (2006). *Personality measurement*. Egyptian International Printing and Publishing House.
- Alawi, M. H., & Radwan, M. N. A. (2000). *Measurement in physical education and sports psychology*. Arab Thought House.
- Bloom, B. S. (1981). *Handbook of formative and summative evaluation of student learning*. McGraw-Hill.
- Gay, L. R. (1986). *Educational evaluation measurement*. Merrill Publishing Company.
- Murphy, R. K. (1988). *Psychological testing: Principles and applications*. Hall International.
- Tyler, L. E., & Walsh, W. B. (1979). *Test and measurement*. Prentice-Hall.

**Sunk Cost Fallacy Scale Items (Final Form)**

Response options: Strongly Agree (5), Agree (4), Sometimes (3), Disagree (2), Strongly Disagree (1).

<b>Dimension</b>	<b>Item statement</b>
Team and Player Management	The coach manages the team through collaboration with the technical director and the administrative staff.
	The coach is concerned with the quality of players he calls up to represent the team.
	The coach collaborates with the players during the training process.
	The coach values the social relationships he has with the players.
	The coach supports players with weaknesses so they can overcome them.
Training and Injuries	The coach carefully plans and schedules training sessions.
	The coach carefully manages training loads.
	The coach avoids sudden increases in training load to prevent injuries.
	The coach monitors injured players and supports their gradual return to training.
	The coach pays close attention to players' daily health and reviews medical records regularly.
Tactical Decisions During the Match	The coach reads matches correctly and implements necessary directives.
	The coach consistently selects the starting players, even in friendly matches.
	The coach analyzes the opposing team's matches to identify strengths and weaknesses.
	The coach works with the analysis team to develop counter-strategies against key opponents.
	The coach uses winning strategies at appropriate moments during the match.
Strategic Planning	The coach and assistants, in cooperation with club management, develop the team's strategic plan.
	The coach analyzes players' strengths and weaknesses and incorporates them into plans.
	The coach reviews previous coaches' plans, adopting what is useful and correcting errors.
	The coach develops monthly, seasonal, and annual plans.
	The coach focuses on training details and ensures contingency plans are in place.
Coach's Personality	The coach maintains emotional composure before and after matches.
	The coach uses a firm and confident style when speaking with players.
	The coach answers press-conference questions while keeping important information

	confidential.
	The coach promotes team unity and collective responsibility.
	The coach remains confident and does not show fear before difficult matches.