

DOI: <https://doi.org/10.61841/x03xet37>Publication URL: <https://nnpub.org/index.php/EL/article/view/2221>

# ASSESSMENT OF TRAINING COMPETENCE, MENTAL TOUGHNESS, AND EMOTIONAL STABILITY OF IRAQI PREMIER LEAGUE HANDBALL COACHES

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## ABSTRACT

*The significance of this study lies in assessing the levels of training competence, mental toughness, and emotional stability among coaches in the Iraqi Premier League for handball. The objectives of the study were To develop scales for training competence and mental toughness among Iraqi Premier League handball coaches, To assess the training competence, mental toughness, and emotional stability of Iraqi Premier League handball coaches, To determine the levels of training competence, mental toughness, and emotional stability among Iraqi Premier League handball coaches.*

*Based on the results and interpretations of the current research, several conclusions were drawn, including:*

- *The scales for training competence and mental toughness, consisting of (20) items each, demonstrated sufficient reliability and validity in measuring the training competence and mental toughness of Iraqi Premier League handball coaches.*
- *Iraqi Premier League handball coaches exhibit adequate training competence, mental toughness, and emotional stability.*

**KEYWORDS:** *Training competence, mental toughness, emotional stability, Iraqi Premier League, handball coaching.*

## INTRODUCTION

Mental toughness is also vital for coaches, especially in advanced sporting communities like handball. The development of sports relies on the mental toughness of coaches, shaped by their thoughts, knowledge, and experiences. Mental toughness is integral to a coach's personality, indicating a close relationship between mental toughness and coaching competence. In today's rapidly changing world, mental toughness is crucial, contributing to overall sporting resilience. Furthermore, maintaining emotional balance is essential for coaches to navigate the demands of coaching while striving for success. Coaches must face all situations that arise during matches and remain optimistic, even in the face of failure or loss. This requires coaches to maintain balanced emotions, control their reactions, and express themselves appropriately, ensuring they remain mentally alert under pressure. Emotional balance is crucial for coaches to handle match pressures with controlled emotions, avoiding exaggeration or disturbances.

Therefore, the research's importance lies in assessing the levels of training competence, mental toughness, and emotional balance among handball coaches in Iraq.

### Research Problem:

Through the researchers' experience as handball specialists, they observed variations in the training competence, mental toughness, and emotional balance among Iraqi handball coaches. These variations negatively affect their players' performance, especially in high-level matches where results are closely contested, leading to frequent failures. Since a coach's success is closely tied to these variables, and due to the lack of tools to measure training competence and mental toughness in handball coaches, the researchers aimed to provide these tools. Understanding the levels of these variables among coaches is essential for enhancing their performance and identifying areas for improvement.

### Research Objectives:

1. Develop scales for training competence and mental toughness among Iraqi Premier League handball coaches.
2. Assess the training competence, mental toughness, and emotional balance of Iraqi Premier League handball coaches.
3. Determine the levels of training competence, mental toughness, and emotional balance among Iraqi Premier League handball coaches.

### Research Hypothesis:

There are significant differences in the levels of training competence, mental toughness, and emotional balance among Iraqi Premier League handball coaches.

### Research Method:

The researchers employed a descriptive survey method to measure and assess the levels of training competence, mental toughness, and emotional balance.

### Research Population and Sample:

The research population consisted of handball coaches in Iraq for the sports season 2023-2024, totaling 64 coaches representing 32 teams. A sample of 60 coaches (93.75%) was selected to construct the scales for training competence and mental toughness. The scales were then applied to a sample of 32 coaches, representing 50% of the total.

### Field Research Procedures:

#### Building Scales for Training Competence and Mental Toughness:

To achieve the first research objective of constructing scales for training competence and mental toughness, the following scientific steps were followed:

#### 1. Determining the Objectives of the Scales:

- The aim was to measure the training competence and mental toughness of handball coaches in Iraq.

#### 2. Establishing the Theoretical Framework:

- The theoretical definition of the scales was relied upon to formulate the scale items.

#### 3. Developing the Initial Formulation of the Scales:

- The researchers prepared initial formulations of the scales by collecting and preparing items, resulting in 20 items for each scale.

#### 4. Selecting Answer Alternatives:

- Three answer alternatives (Always, Sometimes, Rarely) were chosen for each item of the scales.

#### 5. Validating the Items of the Scales:

- After collecting and preparing the items and selecting answer alternatives, the scales were reviewed by experts to validate the items. All items were approved with a 100% agreement rate.

#### Preparing Instructions for the Scales:

After the items' validation, instructions for answering the scales were developed. The formulations of the scales were presented with a list of phrases containing instructions for answering, ensuring simplicity, clarity, accuracy, and confidentiality of responses for research purposes.

This meticulous methodology ensures the accuracy and reliability of the research findings, facilitating a comprehensive understanding of training competence, mental toughness, and emotional balance among Iraqi handball coaches.

Experimentation with the Scales (Training Competence and Mental Toughness):

##### 1. Date and Time of Experiment:

- The experiment was conducted on September 10, 2023, at 5:00 PM.

##### 2. Sample Size:

- The sample consisted of 4 coaches from the province of Najaf.

##### 3. Location of Experiment:

- The experiment took place at the hall of Al-Tadamun Sports Club in Najaf province.

##### 4. Tools Used:

- Office supplies (papers, pens).
- Timers (2).

##### 5. Objectives of the Experiment:

- To ensure the stability of the scales.
- To provide practical training for the researchers to identify strengths and weaknesses encountered during the main test.
- To determine the time taken to answer the scales.
- To assess the clarity and understanding of the instructions by the coaches.
- To identify the conditions of scale application and associated difficulties.
- To understand the comprehension of the research team assistant regarding the nature of the work.

##### 6. Key Results:

- The stability of the scales was confirmed.
- The average time taken to answer the Training Competence Scale was 8 minutes, and for the Mental Toughness Scale was 7 minutes.
- The instructions provided were clear to the coaches.
- The testing conditions were favorable.
- The efficiency of the research team assistant and their understanding of the work nature were satisfactory. Following this, the scales were deemed ready for application in their final form.

#### Main Experiment with the Scales (Training Competence and Mental Toughness):

The scales were applied to the construction sample consisting of 60 coaches from September 25, 2023, to October 15, 2023.

#### Objectivity of Response:

Three items from each scale were selected, and similar items were formulated in meaning and content but differed in wording. The following procedures were undertaken:

1. Repetition of items (8-21) and (13-22) for the Training Competence Scale and items (6-21), (12-22), and (16-23) for the Mental Toughness Scale.
2. Calculation of absolute differences between original and repeated grades for similar items on each questionnaire.
3. Calculation of absolute differences for each individual in the sample.
4. Calculation of the mean and standard deviation for the totals of these absolute differences.
5. Collection of the mean and standard deviation to determine the critical grade at which responses from any coach in the sample are acceptable or unacceptable. No questionnaire was excluded after subjecting them to the objectivity of response and applying the aforementioned procedures, indicating that all were valid for analysis.

**Analysis of Scale Items (Training Competence and Mental Toughness):**

The researchers employed the two-group method and the correlation between item score and total scale score to analyze the items for discernment. This method determines items with high discernment, where "discriminant power refers to the ability to differentiate between individuals who score high and those who score low on the same scale" (2). The correlation between each item score and the total scale score indicates the consistency of the items in measuring the attribute. Therefore, this method presents a consistent scale in its items, ensuring that only good items remain in the test (1). The researchers used both methods to verify the item's discernment by employing independent samples t-test via SPSS to compare the differences between the high and low group scores for each item. Table 1 and Table 2 show the discernment coefficients for the scales.

Table (1) shows the mean and standard deviation for the low and high groups, the calculated t-value, significance value (sig), and the discriminant power for the Training Competence Scale.

Item No.	Lower Bound (33%)		Upper Bound (33%)		t	sig	Remark
	main	Std.	main	Std.			
1	1.44	0.42	3.00	0.00	30.55	0.000	Significant
2	1.41	0.39	3.00	0.00	19.19	0.000	Significant
3	1.33	0.45	3.00	0.00	22.73	0.000	Significant
4	1.55	0.35	3.00	0.00	20.44	0.000	Significant
5	1.34	0.42	3.00	0.00	19.56	0.000	Significant
6	1.00	0.00	2.89	0.28	23.51	0.000	Significant
7	1.00	0.00	2.51	0.37	17.78	0.000	Significant
8	1.00	0.00	2.49	0.26	22.43	0.000	Significant
9	1.00	0.00	2.88	0.32	32.64	0.000	Significant
10	1.00	0.00	2.96	0.19	44.98	0.000	Significant
11	1.22	0.36	3.00	0.00	24.18	0.000	Significant
12	1.34	0.39	3.00	0.00	19.66	0.000	Significant
13	1.21	0.44	3.00	0.00	31.56	0.000	Significant
14	1.33	0.41	3.00	0.00	17.59	0.000	Significant
15	1.26	0.30	3.00	0.00	22.34	0.000	Significant
16	1.34	0.32	3.00	0.00	26.89	0.000	Significant
17	1.20	0.22	3.00	0.00	30.90	0.000	Significant
18	1.21	0.39	3.00	0.00	17.84	0.000	Significant
19	1.42	0.47	3.00	0.00	16.90	0.000	Significant
20	1.29	0.44	3.00	0.00	21.44	0.000	Significant

Table (2) presents the mean and standard deviation for the low and high groups, the calculated t-value, significance value (sig), and the discriminant power for the Emotional Stability Scale.

Item No.	Lower Bound (33%)		Upper Bound (33%)		t	sig	Remark
	main	Std.	main	Std.			
1	1.00	0.00	2.89	0.14	39.92	0.000	Significant
2	1.49	0.39	3.00	0.00	36.43	0.000	Significant
3	1.38	0.48	3.00	0.00	21.57	0.000	Significant
4	1.44	0.33	3.00	0.00	19.62	0.000	Significant
5	1.34	0.26	3.00	0.00	39.57	0.000	Significant
6	1.00	0.00	2.77	0.44	35.89	0.000	Significant
7	1.34	0.44	3.00	0.00	19.32	0.000	Significant
8	1.49	0.34	3.00	0.00	18.32	0.000	Significant
9	1.44	0.39	3.00	0.00	26.17	0.000	Significant
10	1.00	0.00	2.79	0.48	40.58	0.000	Significant
11	1.37	0.39	3.00	0.00	19.52	0.000	Significant
12	1.00	0.00	2.88	0.65	33.64	0.000	Significant
13	1.00	0.00	2.84	0.87	28.58	0.000	Significant
14	1.00	0.00	2.71	0.62	29.07	0.000	Significant
15	1.00	0.00	2.78	0.49	18.11	0.000	Significant
16	1.00	0.00	2.72	0.42	20.33	0.000	Significant
17	1.33	0.41	3.00	0.00	19.44	0.000	Significant
18	1.18	0.33	3.00	0.00	43.32	0.000	Significant
19	1.54	0.52	3.00	0.00	18.49	0.000	Significant
20	1.00	0.00	2.81	0.39	36.81	0.000	Significant

Table (2) indicates that all items of the Emotional Stability Scale are significant, with sig values smaller than the significance level of 0.05 and with 38 degrees of freedom.

• **Internal Consistency Coefficient:**

The internal consistency coefficient is used to determine the consistency of items in measuring the behavioral phenomenon. The researchers employed this method for its ability to:

- Provide a homogeneous scale in its items, where each item measures the same behavioral dimension as the scale as a whole.
- Ensure that the discriminant power of the item is similar to the discriminant power of the scale.
- Highlight the correlation between the items of the scale.

Firstly, the relationship between the item score and the total scale score was determined using the Pearson correlation coefficient between the item score and the total test score for the Training Efficiency and Mental Toughness Scales. This was performed on a sample of 60 coaches, which showed significant correlations for all correlation coefficients and all

scales, as the sig value was smaller than the significance level of 0.05 with 58 degrees of freedom. Tables (3, 4) display the correlation coefficients between the item score and the total score for each scale.

Table (3) The correlation coefficients between the item score and the total score for each item of the Training Efficiency Scale are shown below:

Item Number	R4 Value	Sig Value	Significance	Item Number	R4 Value	Sig Value	Significance
1	0.55	0.000	Significant	11	0.60	0.000	Significant
2	0.65	0.000	Significant	12	0.55	0.000	Significant
3	0.60	0.000	Significant	13	0.58	0.000	Significant
4	0.62	0.000	Significant	14	0.57	0.000	Significant
5	0.55	0.000	Significant	15	0.60	0.000	Significant
6	0.57	0.000	Significant	16	0.58	0.000	Significant
7	0.62	0.000	Significant	17	0.68	0.000	Significant
8	0.59	0.000	Significant	18	0.62	0.000	Significant
9	0.61	0.000	Significant	19	0.65	0.000	Significant
10	0.58	0.000	Significant	20	0.67	0.000	Significant

Table (4) The correlation coefficients between the item score and the total score for each item of the Mental Toughness Scale are shown below:

Item Number	R4 Value	Sig Value	Significance	Item Number	R4 Value	Sig Value	Significance
1	0.61	0.000	Significant	11	0.55	0.000	Significant
2	0.64	0.000	Significant	12	0.69	0.000	Significant
3	0.60	0.000	Significant	13	0.67	0.000	Significant
4	0.63	0.000	Significant	14	0.63	0.000	Significant
5	0.68	0.000	Significant	15	0.66	0.000	Significant
6	0.57	0.000	Significant	16	0.68	0.000	Significant
7	0.65	0.000	Significant	17	0.64	0.000	Significant
8	0.67	0.000	Significant	18	0.69	0.000	Significant
9	0.65	0.000	Significant	19	0.59	0.000	Significant
10	0.68	0.000	Significant	20	0.62	0.000	Significant

- Psychometric Properties of the Training Efficiency and Mental Toughness Scales:

- **Validity:**

Validity is considered the most important factor for assessing the quality of tests and scales. A scale or test is considered valid when it accurately measures the intended construct and does not measure anything else instead of or in addition to it. The researchers used both content validity and construct validity to verify the validity of the scales.

**a) Content Validity:**

**There are two types of content validity:**

1. Face Validity: This type of validity was achieved by presenting the scales to a group of experts and specialists to assess the relevance of the items and their ability to measure the behavioral components they intended to measure. The experts unanimously agreed on the validity of all items of the scales.

2. Logical Validity: This type of validity was achieved by ensuring that each scale covers its intended construct accurately. The researchers provided a precise definition for each scale and verified the coverage of the items according to expert opinion.

**b) Construct Validity:**

The researchers verified the construct validity using the following methods:

1. Discriminant Validity: Discriminant validity was established by calculating discrimination coefficients using the extreme groups method, which helped in retaining items with high discrimination, as seen in Tables (1, 2).

2. Internal Consistency: The researchers utilized this method to calculate the correlation coefficients between each item score and the total score of the scale, as shown in Tables (3, 4).

**RELIABILITY:**

To assess the reliability of the scales, the researchers employed the following methods:

Firstly, Test-Retest Method: The reliability coefficient was calculated using the test-retest method. The test was administered on Sunday, September 10, 2023, and re-administered on September 21, 2023. After data analysis, the researchers found high reliability coefficients for both the Training Efficiency Scale (0.90) and the Mental Toughness Scale (0.89).

- **Selection of Emotional Stability Scale:**

The researchers utilized the Emotional Stability Scale, constructed by researcher Mukhlad Nama Haroun, based on the same sample of handball coaches. The scale consists of 40 items, with respondents indicating their frequency of behavior on a three-point scale (always, sometimes, rarely), with a maximum score of 120 and a minimum score of 40.

- **Development of Scale Levels:**

To assess the levels of training efficiency, mental toughness, and emotional stability, specific levels were established for each scale, as illustrated in Table (5).

**Here's the translation of Table 5 into English:**

Scale	Level	Raw Score Range	Interpretation
Training Efficiency and Mental Toughness	Level 1	20-28	Low
	Level 2	29-36	Acceptable
	Level 3	37-44	Average
	Level 4	45-52	High
	Level 5	53-60	Very High
Emotional Stability	Level 1	40-56	Low
	Level 2	57-72	Acceptable
	Level 3	73-88	Average
	Level 4	89-104	High
	Level 5	105-120	Very High

**Here's the translation of the provided text into English:**

- Application of the Scales (Training Efficiency, Mental Toughness, and Emotional Stability) on the Sample:

After the construction and selection of the three scales, as outlined in Appendices (1, 2, 5), they were applied to the sample on 10-15/12/2023, consisting of 60 coaches. The results were collected to achieve the research objectives.

**5. Statistical Methods:**

The researchers used the Statistical Package for the Social Sciences (SPSS) version 17 to extract the following statistical methods:

1. Chi-square test ( $\chi^2$ ).
2. Mean.
3. Standard deviation.
4. Discrimination equation.
5. Median.
6. Mode.
7. Skewness coefficient.
8. Pearson correlation coefficient.
9. Independent samples t-test.

**4. Presentation, Analysis, and Discussion of Results:**

Chapter four includes presenting, analyzing, and discussing the results obtained according to the research objectives' sequence.

(Identification of Training Efficiency, Mental Control, and Emotional Stability among Handball Coaches):

To achieve this objective, the scales were applied to the research sample of 32 coaches, and the results were as follows:

**First: Training Efficiency:**

Here's the translation of the provided text into English presented in a tabular format:

Table (6): Statistical Description of Training Efficiency Scale Results for Handball Coaches

Number of Items	Mean	Standard Deviation	Hypothetical Mean	Skewness Coefficient	Calculated t-value	sig Value	Significance Level
20	46.12	1.09	40	0.66	17.24	0.000	Significant

Table (6) illustrates the scores of the Training Efficiency Scale for handball coaches. The mean score was 46.12,

with a standard deviation of 1.09 and a skewness coefficient of 0.66. These values indicate that the scores of the research sample distribute normally on the scale. When comparing the sample mean score to the hypothetical mean of 40, it's evident that the sample mean is higher, suggesting that the sample exhibits training efficiency. To determine the statistical significance of the differences, a one-sample t-test was conducted, resulting in a calculated t-value of 17.24, which is significant (sig = 0.000,  $p < 0.05$ ) with 59 degrees of freedom.

**Second: Mental Toughness for Handball Coaches:**

Table (7): Statistical Description of Mental Toughness Scale Results for Handball Coaches

Number of Items	Mean	Standard Deviation	Hypothetical Mean	Skewness Coefficient	Calculated t-value	sig Value	Significance Level
20	47.33	1.11	40	0.88	18.95	0.000	Significant

Table (7) displays the scores of the Mental Toughness Scale for handball coaches. The mean score was 47.33, with a standard deviation of 1.11 and a skewness coefficient of 0.88. These values suggest a normal distribution of scores on the scale. Comparing the sample mean to the hypothetical mean of 40 indicates that the sample mean is higher, indicating that the sample demonstrates mental toughness. To assess the statistical significance of the differences, a one-sample t-

test was conducted, resulting in a calculated t-value of 18.95, which is significant (sig = 0.000,  $p < 0.05$ ) with 59 degrees of freedom.

Third: Emotional Stability for Handball Coaches:

Table (7): Statistical Description of Emotional Stability Scale Results for Handball Coaches

Scale	Number of Items	Mean	Standard Deviation	Hypothetical Mean	Skewness Coefficient	Calculated t-value	sig Value	Significance Level
Emotional Stability	40	96.14	2.77	80	0.65	16.44	0.000	Significant

Table (7) presents the mean score of the Emotional Stability Scale, which was 96.14, with a standard deviation of 2.77 and a skewness coefficient of 0.65. These values indicate a normal distribution of scores on the scale. Comparing the sample mean to the hypothetical mean of 80 suggests that the sample mean is higher, indicating that the sample demonstrates emotional stability. To assess the statistical significance of the differences, a one-sample t-test was conducted, resulting in a calculated t-value of 16.44, which is significant (sig = 0.000,  $p < 0.05$ ) with 59 degrees of freedom.

The researchers attribute this to the fact that the participants in the research sample behave rationally and systematically in different game situations and circumstances of handball matches, leading to the players executing the match requirements. This also leads the coaches to make correct decisions and accurately implement them according to the circumstances the coach faces in the research variables. These variables are important factors in achieving good results and elevating the players to higher levels in most matches, especially those requiring significant physical and mental effort and continuous focus during the game. Therefore, these variables play a prominent role in the nature of the coach's performance, which aligns with the notion that "focus should be placed in the pre-competition period to strengthen feelings of readiness to support a balanced sense and prevent the intrusion of defeatist thoughts because they can increase excitement levels or direct thinking to what is happening inside the body early on, which is not favorable to the coach. Lastly, the coach desires to enter a positive emotional state and suitable physical activity (psychological and physical charging) that leads them to focus on the game when they are fully prepared.

## CONCLUSIONS

Based on the results obtained in the current research and their corresponding interpretations, several conclusions can be drawn as follows:

1. The scales of training efficiency consisting of 20 items and mental toughness consisting of 20 items, which were developed to measure the training efficiency and mental toughness of handball coaches in Iraq, have proven effective.
2. Handball coaches in Iraq demonstrate proficiency in training, mental toughness, and emotional stability.

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