Distinguishing indicators and the percentage of its contribution to the level of achievement of the Libyan national team racers for The long jump

Prof: Mohamed. Ali. Abd Al Rahim
Prof: Abd EL kafi. AbdELazez . ahmed
Prof: Basher. Algntry
Faculty of Physical Education & sport Sciences (PESPS) Tripoli –Libya

Introduction and research problem: -

That athletics is one of the sports digital depends essentially on the personage characteristics of the rider and his ability to challenge the factors of distance, time, altitude being combines promptness, strength and prospect are those basic components of fitness as well as the requirements for the quality of the competition all require the need to act on, and attention to training young basics of the competition so their access to the global digital levels. (2002)(5),(2004) (4).

ever after that entered modern science and various human duty in the sports field appeared influence evident in the production of these sciences has accomplished economy great performance and effort and results fortuitous in sports, also contributed effectively in the mobilization and use of modern technology and increase in the training procedure .(1986)(11), (2001) (10).

otherwise, we find that the ability to construe the movement and understand their causes are important for the coach; as an analysis Bio-mechanic main aspect of the diagnosis scientific to utilize the technical performance of psychomotor skills in the type of competition through the application of the laws and principles of mechanical prevailing human performance and the application of these basics well make training effective and valuable High (2001) (12), (2002) (5).

Given to competitions jump being one contests the field which facilitates determining stages of the theoretical side but art performance skills which requires to much great cruise in movement and physical ability and high qualities of physical and specific Bio-mechanic properties (2000)(3), (2000) (7), (2004)(1).

Since Cuno grams is installation ,stream for details linear motion straight or curved within the overall system performance skills in the type of competition, so we find that the substantive study of the skill kinetic and stages various art contribute to clarify the principles and the rules and conditions for the best and the most adequate performance Skill conceivable for the rider, the performance skill most effective is which achieves the highest result possible sports. (1997)(16),(2002)(2).

This form can be used for contestants from several aspects of psychological or physical, Bio-mechanic or psychology and advantage from training in directing or surmise the sporting level or in the selection process. (2002)(6), (2001)(14).

Especially use the cursor preferential to the world champions in a comparison of the performance of possessions physical skills and other variables from the analysis? It can be considered index the cursor discriminatory is better in the rapprochement between the high sporting levels and the lower level. (2000)(9), (2004)(4).

So The skill performance installation represents the exact type of motor sport pursuit and which can correspond the physical components that are associated with this performance. (1997)(16), (2000)(3)

It is noticeable for the contestants in the implementation of skill (taking a closer or style aviation) had follow most of the contestants method similar in performance in terms of the stages of the competition according to rules and laws but each contestant his own, which is governed by preparations and properties anatomical and mechanical and biological. (1989)(8),(2004)(13).

So Privacy training when designing training programs effective is supposed to fit the had of each rider on the extent and are studying the properties of each rider to identify individual differences they have and try to fix weaknesses and further improve the strengths. (1988) (15),(2001) (12).

It is no doubt that the topical study of motor skill and various technical stages contribute to clarify the principles and the rules and conditions for the best and the most appropriate and highest performance skill possible for the rider; The special skill performance and the most effective is the one who achieves the highest result possible sports Although we find that look coaches real contestants are (distance achieved or time recorded in speeds) during training or competitions, and observed the development of methods to study the problem performance skills in the field of sports during the past years is the result of a number of research and private, which was based on the researchers applications biomechanics, but the true measure they have is the measuring tape to calculate the distance and the stopwatch to calculate the time or observation self without reaching deficiencies real, which is difficult for them estimate technical errors for the performance of the contestants, which can not be seen or can be amended only by means of measurement precision.

So I started in the recent period positive and effective participation of some discerning contestants in long jump competitions, which is one of the competitions digital field, which depends in appreciation and rationing causes quantitative values that can be measured in an objective manner (2000)(9).

As long jump consists of a series of consecutive renderings technical (characterized by force and speed) and can be divided into a preliminary stage is approaching and then upgrading Vtairan stage major and landing phase final outcome of these phases can be expressed distance horizontal completed the implementation of these phases, which depends entirely on potential contestant physical and skill and that support its effectiveness indicators Bio-mechanic determined in the light of the level of achievement.

So Studying and analyzing indicators discriminatory Kinmeteki performance racers long jump Libya importance in obtaining quantitative data whereby the interpretation of results and comparing high levels as Technik levels of sport high model standard or standard of performance skill outstanding Mountqah scientific rationalism, especially when comparing indicators discriminatory change the evolution of the level Performance. (1988)(15).

and we find that the number Libya was in 1983 "8.03 m" we find may decline to become 7.06 m in 2005 and declined until 2012 and this means that there is a large digital gap between the previous and the current figure.

It shows the importance of scientific research when using documentary information or quantitative data recorded for optimum performance through analysis in order to identify weaknesses in performance and review the sincerity of hypotheses that are on the basis of the organization of work and development, the performance most effective is the one who achieves the highest mathematical results possible.

Objective:-

Identify some indicators discriminatory and the percentage of its contribution to the achievement level Libyan national team racers for the long jump.

Assumptions:-

- There are significant differences for some indicators discriminatory in the long jump competition.
- There is a relationship between some of the following indicators discriminatory and level: -
- Basic and Anthropometric - physical – Bio-mechanic

Study: Dave Nielsen (2002)(5)

Efficiency Rating For the Long Jump

objective: to identify the efficiency of Sports statistically approach and high speed flight and set up a mathematical model when you evaluate the efficiency of the jump jockeys.

Sample search: Named intentional one rider.

Key actions:

- Use descriptive manner measurement method and analysis of its relevance to the nature of the research.
- Measurement of the total length and limb length.
- Measure the speed of the enemy for a distance of 30 yards from flying start with a repeat test three times with complete rest between attempts.
- Assume that the angle of promoting homosexual 20 °, and the high center of gravity body for takeoff amounted to 60% of the length rider also used equations statistical extraction "speed vertical and horizontal, attributed the loss of speed, flight time, distance upgrading, Jump distance actual.

Main conclusions:

- The mathematical model can be used as an aid in the identification of areas of performance development.
- If a flight the second half less foot distance flight the first half and improve the rider point behind upgrading Panel 6 inches advised rider improving adjust its approach.
- If the rider bouncing from the middle of the plate rise and the efficiency of the rider plus by 1.5, the concentration of basic training should be on your running speed primer "proposed by the equation."
- The contestant who have a low flight path in a remarkable way may need to improve the strength of jump.

Study: Abdel Moneim HR Lady (2004)(1)

Title: The analytical study of some Kinmeteci variables in the long jump for first-class racers men.

objective: to identify the characteristics of the variables Kinmeteci research contestant during the transition from the last step of the approach to improve the long jump jockeys.

Sample: intentional sample of eight best runners participants in the final round of the Republic of companies.

Key actions:

- Use descriptive survey method based television imaging and analysis Bio-mechanic CNC.
- Filming the last step before upgrading and upgrading stage and the movement of the rider after upgrading Panel to start direct flight stage.
- Photo six attempts each contestant during the tournament.
- I took some measurements represented in "height, weight, distance legal Jump, the actual distance of the bounce."
- Speed of the center of gravity of the body when leaving the rider to upgrade panel directly, "in the horizontal direction, vertical direction, speed outcome."
- Angle of flight.

- The horizontal displacement of the body's center of gravity from the moment of contact with the ground and even improve.
- High center of gravity of the body when upgrading directly.

Main conclusions:

- Loss rate ranged Distance Panel upgrade between (12-19 cm).
- Average speed of the center of gravity of the body during the last step before upgrading directly ranged (1113.25 cm / s ± 50.27 cm).
- Average speed and horizontal and vertical speed collected to the center of gravity of the body when you touch the ground were respectively (1097.65 cm / s, 5.67 cm/ s, 1086.85 cm / s)

So confirms that importance Bio-mechanic analysis can contribute to the study and performance improvement and development through access to specific information about the rider and thus the research Bio-mechanic become objective means to assess the technical performance and skill for any athletic activity.

Search actions

* **Research Methodology**:

Use descriptive approach based on imaging and analysis Bio-mechanic through the computer.

* **Areas of research:**

- The temporal domain Libya Championship track and field competitions for season 2012.
- Spatial domain. Field athletics sports city in Tripoli, Libya.
- The human sphere. Libyan national team racers in the long jump competition.

* sample

Find sample was selected intentional way where the choice fell on the top three riders in the championship Libya nor less than the average distance Jump have about seven meters.

Data collection tools: -

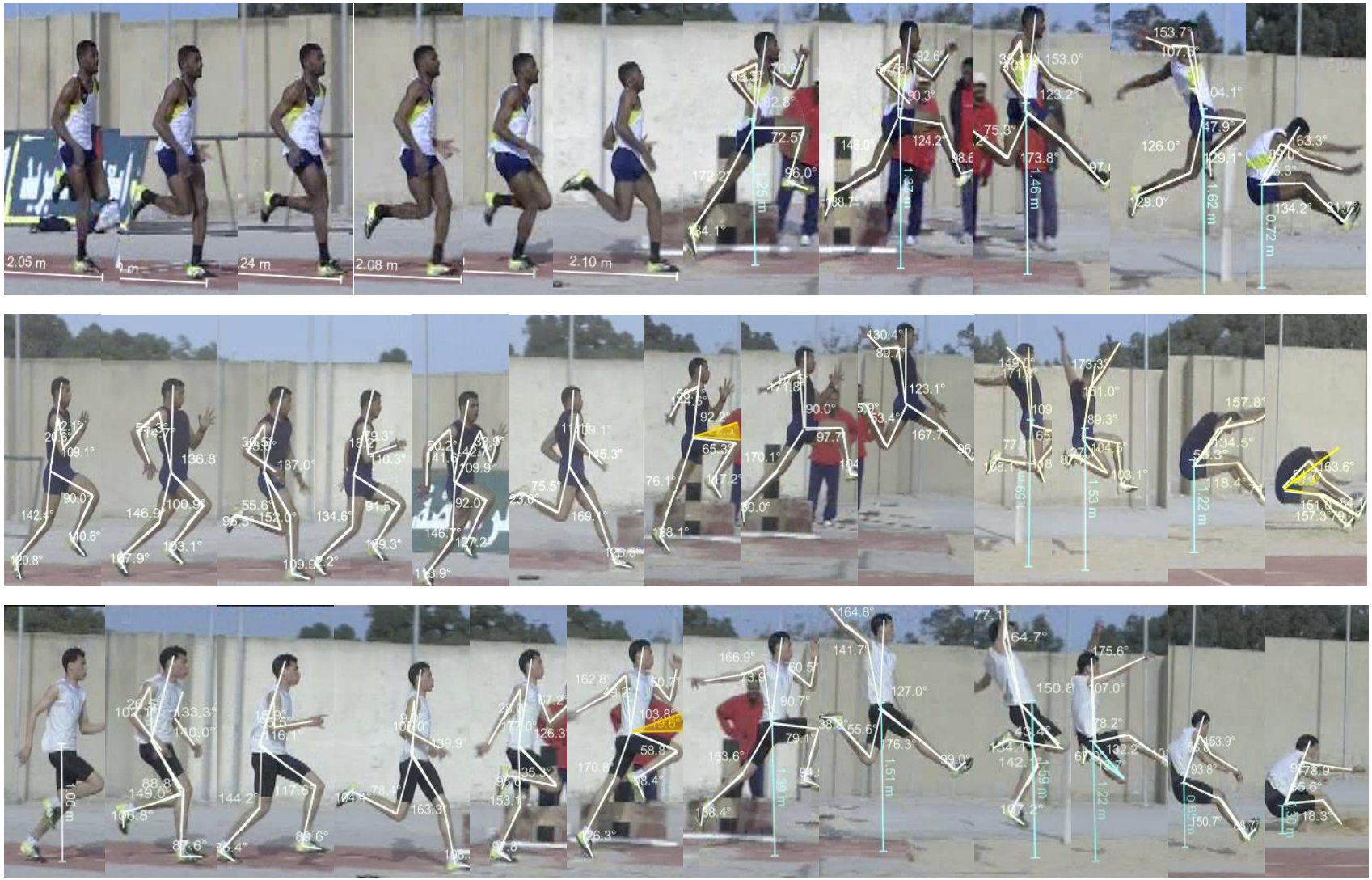
• registration cards. • signs and signposts officer.
• Medical balance. • camera video recording.
• hours off • computer.
• tape measure. • Kinetic analysis program.

Measurements: -

Some indicators have been identified related discriminatory long jump competition, namely: _

A. Discriminatory indicators represented in basic (age - weight - length - years of training)

B. Anthropometric discriminatory indicators represented in: -
1) Overall length.
2) the length of the lower end "along the thigh, leg length"
3) the length of the upper limb "along the trunk, arm's length" along the upper arm and forearm, palm size. "
C. Discriminatory physical indicators represented in: -
(Long jump of stability, Three hop feet right , Three hop left foot , 30 m start time a bird, a time of 50 m, 100 m sprint time)
D. Indicators discriminatory Elkinmetekih represented in: -
The length of the third step before upgrading (m) angle ankle of a man raising (degrees)
The length of the second step before upgrading (m) angle of the knee joint of a man raising (degrees)
The length of the last step "step raise (m) angle ankle of a man free (degrees)
Speed third step before upgrading (m / s) the angle of the knee joint to a free man (degrees)
The second step before the speed upgrade (m / w) Aviation (degrees)
Speed last step "step raise" (m / s) for time to improve (w)
Lost distance between the foot and upgrading panel (cm) high center of gravity beginning Aviation (cm)
The horizontal displacement of the center of gravity in the upgrade step (cm) composite horizontal (m / w)
The vertical displacement of the center of gravity in the upgrade step (cm) composite anchored (m / w)
Cruising speed (m / w)
Confined distance between the center of gravity and landing feet (cm)
Digital level (m)



Form (1)

Display Results

Table (1)

Statistical characterization of basic indicators discriminatory and Anthropometric respondents n=3

Coefficient sprain	Deviation	Median	Average	Tests
0.94	**1.53**	**26**	**26.33**	Age
-0.94	**1.53**	**71**	**70.67**	Weight (kg)
0.00	**3**	**179**	**179**	Overall length (cm)
0.00	**1**	**104**	**104**	Lower limb length (cm)
-0.94	**0.76**	**50**	**49.83**	Thigh length (cm)
1.73	**0.58**	**50**	**50.33**	Leg length (cm)
0.00	**0.50**	**4**	**4**	Foot height (cm)

It is the table noted that the coefficients sprains are close to zero is within acceptable values for coefficient sprains (less than 3±) and thus achieve stability and consistency acceptable for the purposes of scientific study, indicate this ratio to a level well in the general shape of the data that has been collected through measurements made the research sample.

Table (2)

Statistical characterization of physical indicators discriminatory and time enemy 30 m, 50 m and 100. Respondents

Coefficient sprain	Deviation	Median	Average	Tests
1.55	0.06	3.00	3.03	The stability of the long jump (m)
-1.72	0.27	8.90	8.76	Three hopscotch upgrading feet (m)
-1.67	0.06	7.89	7.86	Three free hopscotch feet (m)
-1.73	1.04	13.30	12.70	Throw ball medical imam (m)
-1.69	0.33	13.15	12.98	Throw a ball medical successor (m)
-1.55	3.21	58	56.67	Sitting of lying down (once/s)
-1.62	16.29	66	58.67	On the abdomen trunk raised high(once/s)
1.68	6.08	165	168	Strong muscles of the feet (kg)
-1.08	22.05	155	149.33	Strength of the back muscles (kg)
-1.69	3.33	15.50	13.83	Bend the trunk bottom (cm)
1.73	57.74	3000	3033.33	Vitality capacity (cm3)
-0.98	0.19	3.43	3.39	Time of 30 m (w)
-1.09	0.05	6.05	6.04	Time of 50 m (w)
1.05	0.22	10.90	10.95	Time of 100 m

It is noted that the table torsion coefficients are close to zero is within cceptable

values for coefficient sprains (Less than 3±) and thus ensure the stability and consistency of acceptable for the purposes of scientific study, where this ratio indicates a good level in the general shape of the data that has been collected through measurements made on a sample search.

Table (3)

Statistical characterization of discriminatory Bio-mechanic indicators

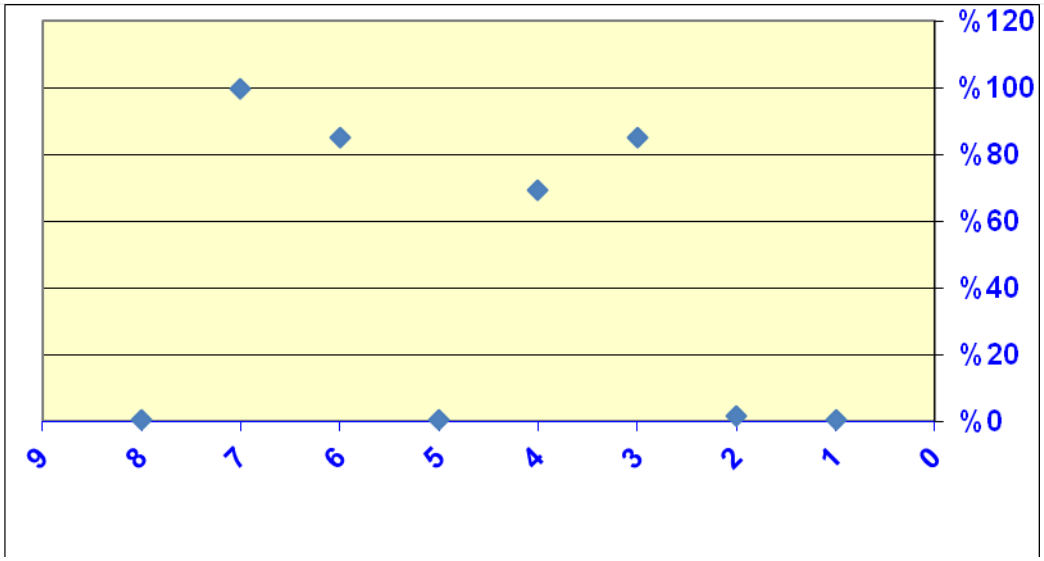
Coefficient sprain	Deviation	Median	Average	Tests
-1.597	0.757	36.70	36.367	Approaching distance (m)
1.709	1.328	2.207	2.900	The length of each step of the last three steps before takeoff (m)
-0.399	0.398	8.71	8.674	Speed every step of the last three (m / w)
0.586	0.003	0.112	0.112	takeoff time (w)
-0.935	1.528	64.00	63.66	The horizontal displacement of the body's center of gravity (cm)
-1.732	1.155	22.00	21.33	The vertical displacement of the body's center of gravity (cm)
-1.732	1.155	137.00	136.33	High center of gravity of the body beginning Aviation (cm)
-1.586	1.457	22.50	21.86	Aviation angle (degrees)
-0.143	0.315	8.470	8.460	Horizontal vehicle (m / w)
-1.668	0.275	3.440	3.307	vertical vehicle (m / w)
-1.630	0.305	9.160	9.020	Cruising speed (m / w)
-0.331	4.509	56.00	55.66	Confined space between CG and feet (cm)
-1.700	0.078	7.05	7.010	Best attempt in the long jump (m)

It is the table noted that the coefficients sprains are close to zero is within acceptable values for coefficient sprains (less than 3±) and thus achieve stability and consistency acceptable for the purposes of scientific study, indicate this ratio to a level well in the general shape of the data that has been collected through measurements made the research sample.

Table (4)

Contribution basic indicators discriminatory and Antorpomitri level of achievement

correlation	Contribution rate	Significance	Value T	Standard error	Factories	Fixed amount	Tests
0.064	0.40%	0.896	0.165	12.777	-0.820	14.746	Years of training
0.126	1.60%	0.957	0.067	19.403	2.459	9.096	Age
0.922	85.00%	0.484	-1.050	7.572	18.033	-55.743	Weight (kg)
0.832	69.30%	0.813	-0.302	21.296	31.967	-45.090	Overall length (cm)
0.064	0.40%	0.436	1.225	12.777	-0.820	109.74	Lower limb length (cm)
0.922	85.00%	0.703	-0.504	3.786	9.016	-13.372	Thigh length (cm)
0.998	99.60%	0.021	30.760	0.473	-7.377	102.04	Leg length (cm)
0.064	0.40%	0.903	0.153	6.389	-0.410	6.873	Foot height (cm)

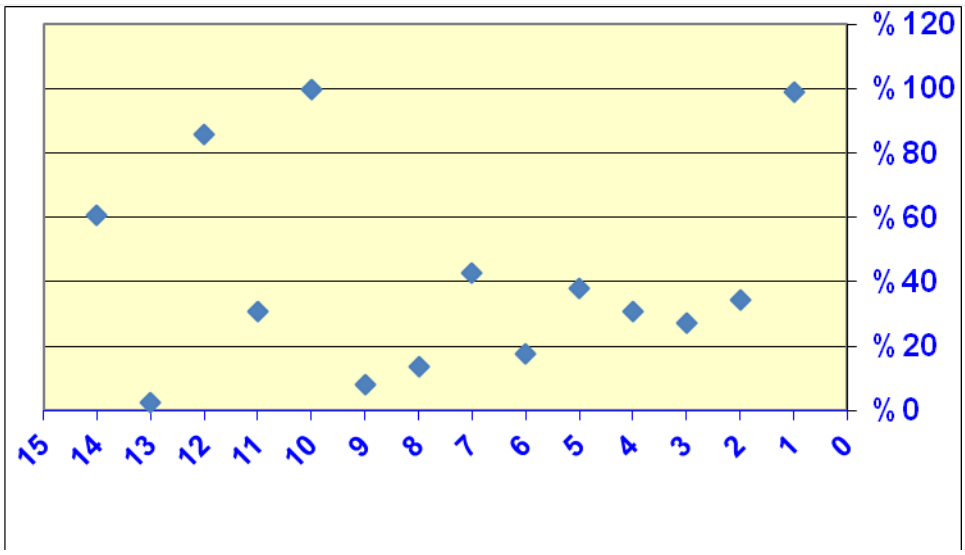


The form of (2) the contribution of discriminatory indicators Anthropometric basic level of achievement in the long jump

Table (5)

Contribution indicators discriminatory physical level of achievement in the long jump

Correlation	Contribution rate	Significance	Value T	Standard error	Factories	Fixed amount	Tests
0.996	99.20%	0.038	16.527	0.076	-0.820	8.773	The stability of the long jump (m)
0.585	34.30%	0.449	1.175	2.759	-1.992	22.719	Three hopscotch upgrading feet (m)
0.523	27.40%	0.244	2.480	0.601	-0.369	10.449	Three free hopscotch feet (m)
0.554	30.70%	0.559	0.830	11.074	-7.377	64.413	Throw ball medical imam (m)
0.615	37.90%	0.410	1.332	3.360	-2.623	31.370	Throw a ball medical successor (m)
0.418	17.50%	0.621	0.677	37.386	-17.213	177.33	Sitting of lying down (once/s)
0.652	42.60%	0.529	0.914	158.06	-136.066	1012.4	On the abdomen trunk raised high(once/s)
0.368	13.60%	0.959	-0.065	72.405	28.689	-33.107	Strong muscles of the feet (kg)
0.284	8.10%	0.771	0.375	270.	-80.328	712.43	Strength of the back muscles (kg)
0.999	99.98%	0.007	-85.893	0.473	42.623	-284.9	Bend the trunk bottom (cm)
0.554	30.74%	0.976	0.037	615.20	409.836	160.38	Vitality capacity (cm3)
0.925	85.72%	0.306	-1.921	0.913	2.238	-12.300	Time of 30 m (w)
0.162	2.63%	0.376	1.493	0.648	-0.107	6.784	Time of 50 m (w)
0.78	60.85%	0.792	-0.340	1.723	2.148	-4.101	Time of 100 m

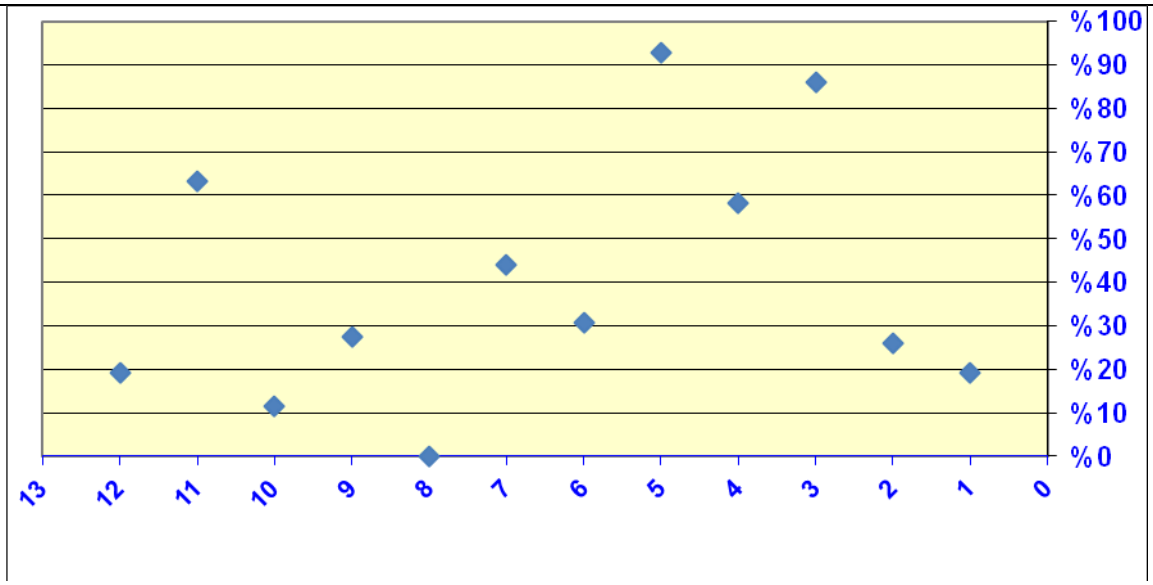


Form (3) the proportion of the contribution of indicators discriminatory physical level of achievement in the long jump

Table (6)

Contribution discriminatory indicators Kinematic level of achievement in the long jump

correlation	Contribution rate	Significance	Value T	Standard error	Factories	Fixed amount	Tests
0.44	19.30%	0.474	1.085	8.708	-4.262	66.245	Approaching distance (m)
0.509	25.90%	0.674	-0.563	14.635	8.647	-57.713	The length of each step of the last three steps before takeoff (m)
0.928	86.10%	0.317	-1.837	1.899	4.727	-24.460	Speed every step of the last three (m / w)
0.763	58.20%	0.752	-0.411	0.021	0.025	-0.060	takeoff time (w)
0.964	92.90%	0.312	-1.877	5.206	18.852	-68.489	The horizontal is placement of the body's center of gravity (cm)
0.554	30.70%	0.267	2.247	12.304	-8.197	193.79	The vertical displacement of the body's center of gravity (cm)
0.663	44.00%	0.467	1.110	13.961	-12.377	108.630	High center of gravity of the body beginning Aviation (cm)
0.037	0.10%	0.836	0.263	4.032	0.148	7.426	Aviation angle (degrees)
0.523	27.40%	0.582	0.771	3.005	-1.844	16.235	Horizontal vehicle (m / w)
0.338	11.40%	0.607	0.709	3.677	-1.320	18.271	vertical vehicle (m / w)
0.795	63.20%	0.367	1.537	35.020	-45.902	377.43	Cruising speed (m / w)



Form (4) contribution discriminatory indicators Kinematic level of achievement in the long jump

Evident from the table (4) that there is a correlation between the level of performance of long jump and some measurements Antorpomitri represented in (weight by 922%, the total length by 832%, thigh length by 922%, leg length by

998%) and these are important indicators affecting level of performance when the contestants long jump national team to Libya, study conform with the study Jamal Aladdin(1989)(8), study Agoston schulek (2002)(2) study Abdel Moneim Haridi (2004)(1)

Evident from the table (5) that there is a correlation between the level of performance of long jump and some physical measurements represented in (test long jump of stability for the ability of muscles of the feet, test the ability of the back muscles, and a time of 30 m start flying, long 100 m speed) that improve these indicators affect the level of performance when the contestants long jump national team to Libya, study conform with the study Samir Abbas Omar(1988)(13) study Hay Popov Bosco & others (2000) (7)

Evident from the table (6) that there is a correlation between the level of performance of long jump and some variables Kinmetekih represented in (offset horizontal center of gravity body by 964%, speed steps last three before upgrading by 928%, flight speed) that improve these indicators affect level of performance when the contestants long jump national team to Libya, study conform with the study Zaki Darwish, Adel Abdul-Hafiz(1997) (16), study Margie Galloway and Keith Connor (2000)(9),study Roys. Luckhurst(2001)(10)

References

1-Abdel Moneim Ibrahim Haridi: an analytical study of some Elkinmetekih variables in the long jump for first-class racers, men c.. Magazine p scientific theories and applications, Issue Session, Faculty of Physical Education for Boys 2004 Alexandria

2-Agoston schulek : long jump with super a maximal & normal speed, new studies in athletics by iaaf 17:2,37- 43 , 2002

3-Aweys Ali al-Jabali : Sports Coaching Theory and Practice, i 1, Knowledge House for printing and publishing, distribution and advertising 2000

4- Branko Skof, Stanko Stuhec: kinematics analysis of jolanda ceplak,s running technique, new studies in athletics by iaaf, 19:1,23-31,2004

5- Dave Nielsen : efficiency rating for the long jump track coach . 2002

6- Endrew Lemey : stading long jump .www.shes . bangor .ac .uk. staff .al.ht.ml.2002

7- Hay Popov Bosco & others :kinematics- dynamic analysis of the take off action in long jump 2000

8-Jamal Mohammed Aladdin: system movements and direct and control systems, an article, the magazine scientific theories and applications, sixth issue, the College of Physical Education, University of Alexandria 1989

9- Margy Galloway: the effect of steering on stride sample & velocity in & Keith Connor long jump ,www ,education, ed ,ac, uk/ field-ath/ papers/ gc. Htm 2000

10-Mohamed Gaber Briva : Biomechanics in the sports field, a scientific journal article theories and applications, Issue Forty-one, College of Physical Education, Alexandria University, 2001

11-Mohamed Yousuf Sheikh: biomechanics and its applications, Knowledge House Cairo Egypt 1986

12- Roys. Luckhurst :biomechanics projectiles . the definitive version. A companion to the dip he in sports science lecture series &experimental laboratory sessions .in the school of science, athematics &information technology. Semester 3, 2001

13-Walter Herzog : file://k,long jump biomechanics ,www.Education ,ed ac.uk/field-ath/htm 2004

14-Qassim Hassan Hussein: Mechanical vehicle decathlon competitions Mohamed Ali Abd al-Rahim men ,seven-women,1, National Library, Benghazi ,publications International House, Malta 2001

15-Samir Abbas Omar: study spaces and increasing rates of speed and the maximum speed for age (14 - 15) Journal Nziat and applications, the fourth issue, Faculty of Physical Education for Boys, Helwan University, 1988 Alexandria

16-Zaki Darwish, Adel Abdul-Hafiz: Encyclopedia of athletics art of speed and sequences, Knowledge House Cairo Egypt 1997