

## **DIFFERENCE BETWEEN FOOTBALL PLAYERS AND NON-FOOTBALL PLAYERS IN THE ANTHROPOMETRIC, MOTOR SPACE AND SITUATIONAL MOVEMENTS**

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### **Abstract**

*The purpose of this research is to highlight the changes in anthropometric dimensions and the basic movements with a particular emphasis on space in situational movements between students as football players and non-football players 13- years old, ( $\pm$  6-months). It will be defined anthropometric and motor space of the two tested groups, and will be assigned relations between spaces to the students of football players and students of non-football players. Taking into account the anthropometric status of students as football players and those non-football players of the same age is meant with a certain basic system of anthropometric latent dimensions which are developed with the influence of endogenous and exogenous factors (hours of physical education and various exercises). Meanwhile in motor space research is defined in basic movement and situational ones, where in some of them genetic factor plays an important role, whereas to others, work which students have worked in schools during the physical education classes, whereas had a possibility that except physical education classes to work during training held 3 to 4 times during the week in a football school. Taking into account the anthropometric and motor status of this research, measuring instruments and some anthropometric and motor dimensions used in this research, as well as methods which are used for processing the results, we can define the objectives of the research in this way: The main goal of this research is verification of differences of anthropometric and motor dimensions in space manifesto, especially in particular way to the situational movements, which is expected to be verified differences between students as football players and non-football players.*

**Key Words:** *Anthropometric and motor dimensions, football players*

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### **Introduction**

When it comes to transforming processes, general kinesiology activities are those that possess a dominant role for human anthropological status.

Knowing the dimensions of psychosomatic status is being explored with the aim of selecting and implementing kinesiology operators.

Football as a sport is a specific branch of poly-structural movements, even more complex, which besides being used for recreational purposes, entertainment, competitive, rehabilitation, presents a high degree of transformation of sportsman in psychosomatic aspects and at the same time is a base for scientific research.

The game of football is one of the most popular sports in the world, including our country. Contemporary football has complex movements both in technical and tactical aspects, as well as in the high physical preparation, with fluent and fast actions and with perfect effective shots. At certain situational moments these give to the game of football a dynamic and glow that awakens the curiosity of sportsman and great interest among young age groups.

Even scientific researchers are looking for tools and more professional methods and optimal loads for children from young age to be given more accurate kinesiology information, that in sport, respectively in Kosovo football are few, and they should be given special treatment and work with young age groups in a professional way.

Taking in consideration the importance of anthropometric and motor parameters, there should be adequate operator choices for the purpose of transformation and right orientation in realization of qualitative results in football, respectively sport in general.

Creativity and professional-scientific ability are a guide for implementation and evaluation of the results achieved in sport. Based on this, the aim of this paper is based on empowerment and confirmation of scientific legalities in the achievement of qualitative results in football, as well as in changes in anthropometric, motor dimensions and situational movements. It will also be reflected on the creativity and work of teachers from the subject of physical education in primary schools. In other words, I think that will reflect in valuable statistical differences between students who have attended football school with those who have not attended this school, but have attended the subject of physical education during learning process.

### Material & Methods

The sample of the tested students in this research was chosen as a population of males, 13 – years old,  $\pm$  six months. The total number of the tested students is 142 respondents, 71- are students from 13 - years  $\pm$  6 months, of the elementary school „Vëllëzerit Frashëri „, from Lypjan, that attended only regular hours of physical education at school, whereas other group of the tested students 71- are regular students of the football school at the football club „ULPIANA“ from Lypjan. The majority of students gravitate from villages of the Lypjan Municipality, that besides the hours of physical education have attended 3-4 trainings during the week and one full year have attended football school.

In this research 10- anthropometric variables were applied which are considered to cover enough space for this research work: evaluation dimension of volume and body mass, definition of longitudinal dimension of skeleton and definition of transversal dimension of skeleton: APESHA – Body weight, ALARTE – Body height, AGJAKË - Length of the leg, AGJASHP - Length of the foot, APEGJO - Chest perimeter, APEBEL - Waist perimeter, APEKOF - Thigh perimeter, APEKËR - Shinbone perimeter, ADIGJU - Knee diameter, ADIZOG - Ankle diameter.

According to the movement variables the subjects are treated with 7 movement variables, 3 basic variables movement tests and 4 situational movement tests. MVR 20m - Running on 20 meters, high start, MKGJV - Long jump from the place, MTAPKË - Taping legs, MPUTOP - Work with the ball, MUSLLA - Ball leading in “slalom” 10m, MUGJRR - Ball leading in half a circle, MUTK 20m - Ball leading in the hall 20m.

For the purpose of interpretation of the results, they were processed with the program SPSS, for Windows. The research was conducted as a part of anthropometric and motor space. Applied methods enable us to realize the purpose of this scientific work. Processing of these methods is made with these statistical methods: T-Test for anthropometric and motoric variables between two groups, Discriminatory analysis between two groups.

### Results and Discussion

#### *Differences in manifestos space*

#### *T – Test for anthropometric and motor variables between two groups*

Method with which is done verification of statistical differences between two groups (group 1- football players, 2- non-football players) in every difference is T- Test. With this method we can verify the differences of how many times the difference of two arithmetic averages is bigger than their standard error. In order to show the statistical validity by this test we must know the value of T-Test, which is  $T > 1.96$ , in the level of statistical significance  $p < .05$ . We can say that the difference between these two groups in a variable is statistically valid.

Table 1 shows the data between two groups that are subject to T-Test. On the basis of the results shown in table 1 we can see the differences for every variable one by one and we can conclude that there was valuable statistical differences in anthropometric space only in the variables ADIGJU and ADIZOG, whereas in motor space valuable statistical differences are shown in situational movement tests MUSLLA, MUGJRR and MUTK 20m. With these results we can say that it is verified that there is important statistical differences in both spaces, especially in situational movement tests, which was the main purpose of this research paper.

By discriminatory analysis basic problem lies in the fact that to differentiate the factors between two groups, under the influence of any kinesiology treatment, with what we can verify the differences between these two groups, in this case in Discriminatory analysis in anthropometric space between two groups.

By discriminatory analysis basic problem lies in the fact that to differentiate the factors between two groups, under the influence of any kinesiology treatment, with what we can verify the differences between these two groups, in this case between football players and non-football players.

In order to notice differences between football players and non-football players in morphological space is used precisely the discriminatory analysis presented in Table 2, which has the following data: Func.- Number of discriminatory functions,  $\lambda$  - Characteristic root, Rc.- Canonical Correlation, Var% - Explains certain percentage of the variability in discriminatory space, Wiks'  $\lambda$  - Determines the criteria for discriminating force of variables,  $X^2$  - Bartlett test which tests the statistical significance of the discriminatory function, Df - Stairs of freedom, Sig. - Level of significant change of the discriminatory function.

Table 1. T-Test between the two groups, 1- football players, 2- non-football players

	Group	N	Mean	Sig.
APESHA	1	71	424,1408	
	2	71	433,8592	0,74
ALARTE	1	71	1539,69	
	2	71	1564,352	0,63
AGJAKE	1	71	897,6761	
	2	71	898,831	0,32
AGJASH	1	71	246,1549	
	2	71	248,0986	0,59
APEGJO	1	71	734,8873	
	2	71	739,493	0,91
APEBEL	1	71	631,2817	
	2	71	624,0423	0,68
APEKOF	1	71	434,5211	
	2	71	434,3944	0,92
APEKER	1	71	309,9577	
	2	71	308,9155	0,45
ADIGJU	1	71	92,98592	
	2	71	81,26761	<b>0,00</b>
ADIZOG	1	71	67,01408	
	2	71	62,12676	<b>0,00</b>
MKGJAT	1	71	182,493	
	2	71	166,6761	0,77
MTAPKË	1	71	28,56338	
	2	71	26,49296	0,14
MVR 20m	1	71	3,732394	
	2	71	3,999437	0,75
MPTOP	1	71	8,422535	
	2	71	7,042254	0,29
MUSLLA	1	71	12,6438	
	2	71	15,02915	<b>0,00</b>
MUGJRR	1	71	15,36563	
	2	71	16,39042	<b>0,00</b>
MUTK 20m	1	71	4,139718	
	2	71	5,150141	<b>0,00</b>

*Discriminatory analysis between two groups**Discriminatory analysis in anthropometric space between two groups*

In table 2 are given the results of discriminatory analysis between these groups, football players and non-football players in anthropometric space. It is seen that the differences between the tested groups in ten anthropometric variables is gained one discriminatory function.

Significant changes between these two groups are presented through the characteristic root  $\lambda$  .98. Canonical correlation showed fairly large value Rc .704, with variability of Var% 100, whereas criteria for discriminatory force of morphological variables applied Wilks'  $\lambda$  .505, that is tested through Bartlett test  $X^2$  92.26, for Df 10 stairs of freedom. The level of importance of this function Sig. .000 indicates statistical validity of the discriminatory function.

Table 2. Discriminatory Analysis of anthropometric variables

Function	$\lambda$	Rc.	Var%	Cumul%	Wilk' $\lambda$	X-2	Df	Sig.
1	.981	.704	100	100	.505	92.26	10	<b>.000</b>

In order to know the structure of discriminatory function we must observe structural matrix presented in Table 3, in which case were shown correlations between anthropometric space and discriminatory function. Significant correlation with discriminatory function are showing variables ADIGJU and ADIZOG, in which case we can define this function as: circular dimensionality of the body.

In table 4 are presented centroid of groups that can do better discrimination of groups. The concentration of centroid of groups in discriminatory function is divided in two parts, the first group of football players has greater value of centroids .983, whereas on the other part where is the group of non-football players has smaller value of centroids -.983.

Table 3. Discriminatory function of anthropometric variables

Variables	Function 1
ADIGJU	<b>,878</b>
ADIZOG	<b>,551</b>
ALARTE	-,147
APEBEL	,081
APESHA	-,070
AGJASH	-,069
APEGJO	-,048
APEKER	,021
AGJAKE	-,011
APEKOF	,002

Table 4. Centroids of anthropometric groups

	Function
groups	1
1,00	,983
2,00	-,983

*Discriminatory analysis in motor space between two groups*

In table 5 are given the results of discriminatory analysis between these two groups in motor space. It is seen that the differences between the tested groups in seven motor variables, is gained one discriminatory function. Significant changes between groups are presented through the characteristic root  $\lambda$  1.33,

Canonical correlation showed fairly large value  $R_c$  .756, with variability of Var% 100, whereas criteria for discriminatory force of morphological variables applied Wilks'  $\lambda$  .429, which is tested through Bartlett  $X^2$  115.53, for Df 7 stairs of freedom. The level of importance of this function Sig. .000 indicates statistical validity of the discriminatory function.

Table 5 Discriminatory analysis of motor variables

Function	$\lambda$	Rc.	Var%	Cumul%	Wilk's $\lambda$	X-2	Df	Sig.
1	1.33	.756	100	100	.429	115.53	7	.000

In order to know the structure of discriminatory function we must observe structural matrix presented in Table 6, in which case were shown correlations between motor space and discriminatory function. Significant correlation with discriminatory function are showing variables MUSLLA, MUTK 20m, MVR and MKGJV. On the basis of structure of discriminatory function, this function we can define as dimensionality of explosive force and speed.

In table 7 are presented centroids of groups that do better discrimination of the groups. The concentration of centroids of groups in discriminatory function, in which are in two parts divided the first group of football players has smaller value of centroids -1.15, whereas on the other part where is the group of non-football players has greater value of centroids 1.15

Table 6. Discriminatory function of motor variables

Variables	Function 1	
MUSLLA	.735	
MUTK20m	.701	
MVR 20m	.361	
MKGJV	-.341	
MUGJRR	.298	
MTAPKË	-.230	
MPTOP	-.152	

Table 7. Centroids of motor groups

groups	Function	
1,00	-1,146	
2,00	1,146	

**Conclusion**

The purpose of this research was verification of anthropometric and motor changes of situational movements between students of football players and non-football players of 13 years old  $\pm$  6 months. In which case was treated the sample of 142 entities, 71 students of elementary school "Vëllëzërit Frashëri" in Lypjan and 71 applicants of football school from Lypjan Municipality.

On the basis of presented results, of T-test and discriminatory analysis in manifestos space, we have verified that are shown statistical valuable changes only in those parameters that are specific for the

game of football eventhough time period of the students as football players that are attending football school is only one year. But we can say that it was realized the purpose of this research paper which verifies changes of manifestos space, to the situational movement tests that are in favor of students as football players, in which case their one year work at the football school helped them to be distinguished from the people of same age and to transform in morphological aspect of various specific movements in the game of football.

We can say that the value of this work can be in the function of the information for the development of morphological and motor characteristics as for students in the process of physical education in elementary schools also attendants of football schools.

Such works are good predictors and should be considered especially during the selection of children and young people for football school, for orientation and selection for various sports activities, in the function of training process programming, in working research methodology and of creation professional-scientific strong bases.

For the end we can conclude that on the basis of gained results, the goal of this research was realized completely, not with significant results in favor of students as football players but with one valid statistical difference, that gives us to understand that with professional –scientific work, in the clubs, and especially in football schools, where is done a permanent school of young people from young age can be raised quality and level of football game in our country, and this sport to be raised in the level and quality what is contemporary football today.

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