

Canon anthropometric relationship between the characteristics and specific motor abilities in football club in Gjilan

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The sample of 100 boys, aged 15+ years, has been applied to the system from a total of 10 variables, of which five morphological variables and five variables, motor skills, to determine their mutual relations, and data were analyzed using canonical correlation analysis. In determining the statistically significant relationship, it was obtained by a pair of statistically significant canonical correlation. Since the first canonical factor structure in space, anthropometric variables are applied to all variables, it is interpreted as a canonical factor of growth and body development, while others could not be interpreted because of poor information value. The area-specific motor skills for the first canonical factor could not be interpreted because of poor information value and the second canonical factors is interpreted as the shock factor in goal precision and the other as a factor keeping and ball control, fast dribbling and precision kick into the goal. Based on the analysis of calculated matrix structure of canonical factors, results showed that in boys soccer at this age are statistically significant correlations between canonical variables and factors anthropometric motor skills, which is ($R_c = .41$), which is statistically significant level ($p = .03$).

Key words: canonical analysis, anthropometric, motor skills, relationships, players.

INTRODUCTION

Therefore, a problem that occurs in connection with this is to find a statistically significant relationship between the individual latent dimensions corresponding morphological characteristics and motor abilities of some components that are relevant in certain activities, in order, on the one hand, children of this age could check and maintain the desired anthropological harmony, on the other hand, carry the required educational technology and update practicing programming. In this regard, it is well known that while a single type of activity motor body structure directly hamper the achievement of the kinetic, the same physique in another motor activity in a different gender or age, can be extremely favorable, as can be seen also in growing body of research (Viskić, 1975; Malacko, 2004) In recent years, are extremely relevant problems in the relationship between individual characteristics and anthropometric dimensions of the motor skills, not only because they have been insufficiently studied, but because there are very marked differences in age. (Viskić 1975).

PROBLEM AND OBJECTIVE

The problem of this research is to determine the correlation between the canonical system characteristics of anthropometric (five variables) motor skills (five variables) the cadet football league in Gjilan. In other words, the aim of this study is to determine how to adjust football training opportunities to the students which would enable a controlled and overall progress, and this includes the initial diagnosis of conditions, direct and cumulative process control training and education in general.

RESEARCH METHOD

The sample of variables

To assess the characteristics, were applied the following anthropometric system variables: body height (ATV), body mass (ATM), leg length (AND), foot length (ADS), Thigh range (AON).

To assess specific motor abilities were used the following system variables:

Juggling the ball with his feet in the area of mea 1.5x1.5 meters (SMŽL), dribbling with obstacles (SL) of 20 meters, straight-line running the ball (with four contacts) to 20 meters, kicking the ball into the goal of long-distance of 10 meters, kicking the ball into the goal at his head-distance of 5 meters.

The aim of these statistical methods is the formation of linear combinations of the set of independent variables, but so that the linear combination of such a maximum correlation. In order to determine the relationship between two different systems manifest variables anthropometric characteristics and specific motor abilities was applied canonical correlation analysis. Assuming that the two applied anthropological multidimensional linear systems related variables, they first calculate the descriptive parameters, then the interpretation made cross-correlation matrix, where the characteristic equation obtained by solving the roots of the equation (λ), and Bartlett's χ^2 -test tested the statistical significance of canonical correlation coefficients (R_c).

RESULTS

Table 1

Descriptive parameters

	Valid N	Mean	Minimum	Maximum	Variance	Std.Dev.	Skewness	Kurtosis
ATV	112	1.7187	1.56000	1.8700	0.0037	0.06123	0.23888	-0.04292
ATM	112	61.9170	47.10000	82.0000	54.4980	7.38228	0.53804	0.09492
ADN	112	101.6786	61.00000	111.0000	30.8147	5.55110	-3.47704	25.12327
ADS	112	26.4804	24.50000	28.6000	0.8156	0.90313	-0.14721	-0.56086
AON	112	50.1161	43.00000	61.0000	15.1306	3.88980	0.44387	0.11556
SMŽL	112	31.7589	10.00000	55.0000	157.2657	12.54056	0.31470	-0.87916
SMSV	112	4.8796	3.92000	6.7000	0.2117	0.46006	0.49583	1.13603
SMPV	112	4.4840	2.80000	5.3000	0.1690	0.41112	-0.76241	1.59980
SMUN	112	2.4911	0.00000	5.0000	1.0269	1.01338	-0.16039	-0.43819
SMUG	112	3.0268	1.00000	5.0000	0.9272	0.96291	0.19241	-0.37779

Table 1 shows the results of the statistical parameters of variables. It is clearly evident that the distributions of all the variables are symmetrical, because they do not exceed values greater than 1.00, except for anthropometric variables (AND -3.47).

	1	2	3	4	5	6	7	8	9	10
ATV	1.00									
ATM	0.54	1.00								
ADN	0.66	0.41	1.00							
ADS	0.54	0.27	0.33	1.00						
AON	0.33	0.77	0.23	0.10	1.00					
SMŽL	0.21	0.27	0.06	0.08	0.23	1.00				
SMSV	0.02	0.08	0.02	-0.01	0.07	-0.23	1.00			
SMPV	-0.14	-0.02	0.03	-0.13	0.01	-0.22	0.30	1.00		
SMUN	0.05	0.05	0.11	0.13	0.11	0.25	-0.24	-0.07	1.00	
SMUG	-0.05	-0.13	-0.09	-0.01	0.09	0.29	-0.35	-0.16	0.36	1.00

The analysis of the system matrix cross-correlation of anthropometric characteristics and motor variables (Table 2), does not recognize the high and statistically significant correlation of pairs of variables at $p = 0.01$. Based on the results it is evident that the motor variables, slalom dribbling (SMSV), straight-line running the ball (SMPV), kicking the ball into the goal (SMUN), and knocking the ball into the goal by head do not

show a statistically significant correlation with anthropometric variables, while the variables juggling balls (SMŽL), with the same variables obtained anthropometric only two correlations.

Table 3

Testing the significance					
	Lambda – Prime λ	Canonicl – R Rc	Chi-sqr. Rc ²	Chi-sqr. χ^2	p
0	0.692727	0.410118	38.73109	38.73109	0.03
1	0.832802	0.305064	19.30223	19.30223	0.25
2	0.918258	0.226729	8.99665	8.99665	0.43
3	0.968021	0.178347	3.42893	3.42893	0.48
4	0.999823	0.013303	0.01867	0.01867	0.89

(λ = lambda, Rc = canonical correlation, Rc² = coefficient of determination, Chi-square χ^2 test, p = probability)

In determining the relationship between system characteristics and specific anthropometric -motor skills (Table 3), Bartlettovog using Chi-square test (χ^2), it was found that in younger football no statistically significant correlation between one pair of canonical factors at the level of 0.03, which is canonical correlation (Rc = .41).

Table 4

Canonical structures of growth factors and body development

	Fc 1	Fc 2
ATV	0.83	0.05
ATM	0.84	-0.02
ADN	0.71	-0.05
ADS	0.56	0.09
AON	0.66	0.08
SMŽL	0.28	0.60
SMSV	-0.11	0.69
SMPV	0.05	0.50
SMUN	0.11	0.68
SMUG	-0.12	0.73

Based on the calculated matrix structure in the space of canonical factors anthropometric variables and canonical factor, structure-specific motor skills. (Table 4), it is clear that the structure of the first canonical factors are applied all anthropometric variables, so that he interpreted as a canonical factor of growth and body development, and the second canonical factor anthropometric variables can be interpreted as the structure of the first canonical factor-specific motor skills that can not be interpreted due to very low values of information variables, while the second canonical factor-specific motor skills are applied to all motor-specific variables, so that he interpreted as a canonical factor of accurate shots on goal, and the factor of leadership and ball control.

DISCUSSION AND CONCLUSION

When interpreting the canonical relation, as is known, the normal rules apply, and that is to increase the value of the resulting linear vector of variables from the first canonical factor space corresponding to a linear proportional increase in the value of the

resulting vector of variables from the second canonical factor space, and vice versa, provided that the two variables tested the system in different areas there is a statistically significant correlation. In particular, this study means that based on the first pair of canonical factors football players do better in precision kicks the ball into the goal, and less in the management and ball control, if they have increased the value of the variables anthropometric characteristics, and vice versa. Although the second pair of canonical factors could not adequately be interpreted morphological structure of canonical factors for very low values of information variables in relation to the first canonical factor. Very likely in this case it is a motor-specific variables that do not represent the starting point of regular exercise, which hint that the players of this age has not been a preferred alignment in certain segments of the anthropological characteristics. The study met the expectations because the basis of the results may confirm the general assumption that players aged 15 + -6 years, a statistically significant relationship between the characteristics and anthropometric specific-motor abilities. Based on the first pair of canonical factors can be concluded that players of this age do better in precision shocks, and less in the management and ball control, if they have increased in value anthropometric variables.

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The report has been reviewed.