Original scientific paper *UDC 793.3.071.2:159.923.2.072.59*

The structure of the social status of dancers

Evagelia Boli, Dragan Popović, Ankica Hosek-Momirović,
Jasna Popović & Vladimir Savić

Faculty of Sports and Physical Education, the University of Priština
temporarily based in Leposavić, Serbia

e-mail: evagelia.boli@pr.ac.rs

1. Introduction

Sociological characteristics imply the characteristics of some groups or social institutions related to a man.

Within the integral anthropological status, in the social sphere, the subjects of a vast number of previous researches were related to the position of a person in the social sphere, respectively to the problems of social differentiation, social stratification and social mobility (A. Hošek-Momirović, 1979). While the notion of social mobility is relatively clear, the notions of social differentiation and social stratification are frequently substituted, and sometimes identified with the notion of class differences. One of the reasons of such state is certainly the lack of adequate cybernetic models on which research on social differences could be established.

In previous researches, with the help of factor procedures, various factors of the social status of the first line, within some subsystems were identified:

Socialization subsystem:

- Educational status – the level of the individual's education in the society,
- Basic residential status – characteristics of the place where the subject spent his/her early childhood;

Institutionalized subsystem:

- Professional status – level of the individual's expert power or individual's position in the working organization,
- Sociopolitical status – the individual's position in sociopolitical organizations,
- Political orientation;

Sanction subsystem:

- Basic - economic status – net income in the family and objects standard for a family,
- Life style – above-average living standard
- Residential status – characteristics of the place where people live.

There is only one model of social status presently available that has enabled a real scientific approach to the study of the structure of stratification dimensions. The model was constructed by S. Saksida, which later served as a base for many researches conducted by other authors (Saksida and Petrović 1972, Saksida, Caserman and Petrović 1974, Momirović and Hošek 1975). Constructed as a phenomenological model, it has undergone several modifications over time, but it still remains suitable for studying social changes.

2. Research methods

2. 1. The sample of examinees

The sample of examinees is conditioned by the financial capabilities necessary for the research procedure. Besides, the sample depends on the number of qualified and trained measurers, on the instruments and standardized conditions in which the planned research may be realized.

In order to conduct the research properly, with satisfactorily stable results, in the sense of sampling error, it is necessary to include a satisfactory number of examinees into the sample. The size of the sample for research of this type is as

well conditioned by the aims and tasks of the research, size of the population and the degree of variability of the applied system of parameters.[33]

According to the selected statistical-mathematical model and the aim of the research, the sample of examinees included 131 female dancers and 136 male dancers, aged from 11 to 13, actively engaged in standard and Latin American dances in the Serbian dancing clubs.

The size of the so defined sample should satisfy the following criteria:

- the effectives of the sample should be planned so that it enables as many degrees of freedom as necessary for any coefficient in the pattern or correlation matrix, which is equal to or bigger than 0.22, to be considered different from zero with an inference error less than 0.01.
- in order to successfully apply the adequate statistical methods according to the latest convictions, the number of subjects in the sample must be five times bigger than the number of the applied variables.

During all the factor procedures, it should always be kept in mind that the results of the analysis depend on three major systems which determine the selection and transformations of information: the sample of variables, sample of examinees, and the selected extraction, that is rotation, method.[34]

2. 2. The sample of variables

For the evaluation of the social status, there was applied the model constructed by Saksida and Petrović 1972; Saksida, Caserman and Petrović 1974; Momirović and Hošek 1975. In this research the appendix INST2, the questionnaire SSMIN were applied.

33 Popović, D.: Determining the structure of psychosomatic dimensions in fights and developing the procedures for their evaluation and monitoring - The Monograph, the Faculty of Physical Education, University of Priština, Priština, 1993.

34 Popović, D.: Determining the structure of psychosomatic dimensions in fights and developing the procedures for their evaluation and monitoring - The Monograph, the Faculty of Physical Education, University of Priština, Priština, 1993.

VARIABLES FOR EVALUATION OF STATUS CHARACTERISTICS

Table 1.

No.	VARIABLE	LABEL
1	Father's education	OBRO
2	Mother's education	OBRM
3	Knowledge of foreign languages	JEZ
4	Father's knowledge of foreign languages	JEZO
5	Mother's knowledge of foreign languages	JEZM
6	Type of school	ŠKOLA
7	Type of school which father finished	ŠKOLAO
8	Type of school which mother finished	ŠKOLAM
9	Father's qualifications	KVALO
10	Mother's qualifications	KVALM
11	Paternal grandfather's education	DEDAO
12	Maternal grandfather's education	DEDAM
13	School performance	USPEH
14	Grade repetition	PON
15	Intensity of sport activities	SPORT
16	Type of place where childhood was spent	M15
17	Type of place where father spent his childhood	M15O
18	Type of place where mother spent her childhood	M15M
19	Type of current place of respondent's residence	MESTO
20	Who took care of the respondent during early childhood	ČUVAO
21	Number of children of respondent's parents	DECAR
22	Sexual partner's education	OBRS
23	Best friend's education	OBRP
24	Father's sports results	SPORTO
25	Mother's sports results	SPORTM
26	Number of books in the home library	KNJIGE
27	Father's membership and activity in left-wing political parties	LEVIO

Table continued on next page...

...Table continued from previous page		
28	Mother's membership and activity in left-wing political parties	LEVIM
29	Father's membership and activity in right-wing political parties	DESNIO
30	Mother's membership and activity in right-wing political parties	DESNIM
31	Father's membership and activity in center political parties	CENTARO
32	Mother's membership and activity in center political parties	CENTARM
33	Father's professional position in the working organization	PROFO
34	Mother's professional position in the working organization	PROFM
35	Father's involvement in governmental bodies	DPZO
36	Mother's involvement in governmental bodies	DPZM
37	Father's function in sport clubs	FNSPORTO
38	Mother's function in sport clubs	FNSPORTM
39	Father's social commitment	FNDRUŠTO
40	Mother's social commitment	FNDRUŠTM
41	Colour TV	TV
42	Car	AUTO
43	Under two years old car	AUTON
44	Weekend cottage	VIK
45	Video recorder	VIDEO
46	Stereo system	MUZIK
47	Computer	KOMP
48	Freezer	FRIZ
49	Dishwasher	MSUD
50	Washing machine	MVEŠ
51	Size of apartment	KVSTAN
52	Comfort of apartment	KOMFOR
53	Monthly household income	PRIHOD

2. 3. Data processing methods

All the data collected in this research were processed in the Multidiscipline Research Centre of the Faculty of Sports and Physical Education, the University of Priština, supported by the system of data processing programmes developed by D. Popović, 1980, 1993, K. Momirović and D. Popović 2003. Therefore the aim of this work is to propose a consistent algorithm for latent structure analysis which consists in orthoblique transformation of principal components significant by PB criterion with additional operations for variance component analysis of manifested and latent variables as well as for the evaluation of the reliability of latent variables, and to describe a program, written in the Matrix language for SPSS, that functions in Windows environment, that is, the program which will be available to almost all users of personal computers or workstations.

THE ALGORITHM

Let Z be a matrix of standardized data obtained by the description of some set E of n entity on some set V of m quantitative, normally or at least elliptically obtained distributed variables. Let R be an intercorrelation matrix of those variables. Assume, R is surely regular matrix, and there could with certainty be rejected the hypothesis according to which variables from V have spherical distribution, i.e. the eigenvalues of the correlation matrix in the population P, from which the sample E has been drawn, are equal.

Let

$$U^2 = (\text{diag } R^{-1})^{-1}$$

be Guttman's estimate of unique variances of variables from V, and let λ_p, p = 1,...,m be the eigenvalues of matrix R. Let

$$c = \text{trag } (I - U^2).$$

Define the scalar k so that

$$\Sigma_p^{\ k} \lambda_p \geq c, \Sigma_p^{\ k-1} \lambda_p < c.$$

k is now the number of principal components of matrix Z determined according to PB criterion by Štalec and Momirović (Štalec and Momirović, 1971).

Let $\Lambda = (\lambda_p)$; p = 1,...,k be a diagonal matrix of the first k eigenvalues of matrix R and let $X = (x_p)$; p = 1,...,k be a matrix of the associated eigenvectors scaled so that $X^tX = I$. The principal components of the analyzed set of variables will be the vectors of the matrix

$$K = ZX$$

with the covariance matrix

$$K^tK = \Lambda;$$

if the latent dimensions, thus defined, are standardized by the operation

$$P = K\Lambda^{-1/2}$$

the elements of the matrix

$$H = Z^tPn^{-1} = X\Lambda^{1/2}$$

that is, the correlations between the variables and principal components, will, simultaneously, be the coordinates of the vectors of variables in the space stretched by the standardized vectors of principal components. The variances of the standardized variables, projected into the k – dimensional space of the principal components, will therefore be the elements of the vector

$$h^2 = \text{vec diag } (HH^t) = \text{vec diag } (X\Lambda X^t);$$

and since, obviously,

$$H^tH = \Lambda,$$

the analysis of principal components maximizes not only the variances of the so defined latent dimensions, but also the correlations between those dimensions and analyzed variables.

Although the principal components have simple and clear mathematical meaning, their interpretation is very complex, especially when the vectors of variables form clusters in the component space. Therefore, almost always, the coordinate system formed by the vectors of principal components undergoes some parsimonic transformation, wherein the primary aim of all the transformations is that new coordinate axes are passing through the clusters of the vectors of variables. For that purpose, a lot of methods have been proposed; but out of them the orthoblique transformation of type II, proposed by Chester Harris and Henry Kaiser (Harris and Kaiser, 1964) is not only the most simple, but the closest to the main idea of parsimonic transformation.

Let T be some orthonormal matrix such that it optimizes the function

$$XT = Q = (q_p) \mid p\,(Q) = \text{extremum}, T^tT = I,$$

where p (Q) is some parsimonic function, for instance an ordinary Varimax function

$$\Sigma_j^m \Sigma_p^k q_{jp}^4 - \Sigma_p^k (\Sigma_j^m q_{jp}^2)^2 = \text{maximum}$$

where the coefficients q_{jp} are the elements of matrix Q (Kaiser, 1958).

Now the transformation of principal components defined by the vectors in the matrix

$$K = ZX,$$

into semiorthogonal latent dimensions determined by type II of orthoblique procedure (Harris and Kaiser, 1964), is defined by the operation

$$L = KT = ZXT.$$

The covariance matrix of those dimensions is

$$C = L^tLn^{-1} = Q^tRQ = T^t\Lambda T;$$

Denote the matrix of their variances as

$$S^2 = (s_p^{\,2}) = \text{diag } C.$$

If latent dimensions are standardized by the operation

$$D = LS^{-1},$$

in the matrix

$$M = D^tDn^{-1} = S^{-1}T^t\Lambda TS^{-1}$$

there will be their intercorrelations; notice, that C, and therefore M, cannot be diagonal matrices, so that the latent dimensions, thus obtained, are not orthogonal in the space of the entity from E.

The matrix of correlations between the variables from V and latent variables, which is usually classified as a matrix of factor structure, will be

$$F = Z^tDn^{-1} = RXTS^{-1} = X\Lambda TS^{-1};$$

and since the elements of matrix F are orthogonal projections of vectors from Z to the vectors from D, the coordinates of these vectors in the space stretched by vectors from D are the elements of the matrix

$$A = FM^{-1} = XTS.$$

But as

$$A^tA = S^2$$

then the latent dimensions obtained by this procedure are orthogonal in the space stretched by the vectors of variables from Z; the squared norms of the vectors of those dimensions in the space of variables are equal to the variances of those dimensions.

Naturally, matrices A and F are factor matrices of matrix R because

$$AF^t = AMA^t = FM^{-1}F^t = HH^t = X\Lambda X^t;$$

consequently the operation

$$W = (w_{jp}) = A \bullet F,$$

where • is a symbol of Hadamard's multiplication, forms a matrix whose rows include the variance components of variables that may be attributed to orthoblique factors, and columns contain the variance components of orthoblique factors which may be attributed to variables.

For its simplicity and clear algebraic and geometrical meaning and latent dimensions, also the identification structures associated with those dimensions, reliability of latent dimensions obtained by orthoblique transformation of principal components may be determined in a clear and unambiguous manner (Momirović, 1996).

Let $G = (g_{ij})$; $i = 1,...,n$; $j = 1,...,m$ be an acceptably unknown matrix of measurement errors when describing set E on set V. Then the matrix of the true results of the entity from E on the variables from V will be

$$Y = Z - G.$$

If, in accordance with the classical measurement theory (Gulliksen, 1950; Lord and Novick, 1968; Pfanzagl, 1968) we assume that the matrix G is such that

$$Y^tG = 0$$

and

$$G^tGn^{-1} = E^2 = (e_{jj}2)$$

where E^2 is a diagonal matrix, then the covariance matrix of true results will be

$$J = Y^tYn^{-1} = R - E^2$$

if

$$R = Z^tZn^{-1}$$

is an intercorrelation matrix of variables from V defined on set E.

Assume, the reliability coefficients of variables from V are known; let P be a diagonal matrix whose elements ρ_j are those reliability coefficients. Then the variances of measurement errors for standardized results on variables from V will precisely be the elements of the matrix

$$E^2 = I - P.$$

At present the true values on the latent dimensions will be the elements of the matrix

$$\Gamma = (Z - G)Q$$

with the covariance matrix

$$\Omega = \Gamma^t\Gamma n^{-1} = Q^tJQ = Q^tRQ - Q^tE^2Q = (\omega_{pq}).$$

Accordingly, the true variances of latent dimensions will be the diagonal elements of matrix Ω; let's mark those elements as ω_p^2. Based on the formal definition of coefficients of reliability of some variable

$$\rho = \sigma_t^2 / \sigma^2$$

where σ_t^2 is a true variance of some variable, and σ^2 is a total variance of that variable, that is, the variance which also includes the error variance, the coefficients of reliability of latent dimensions, if the reliability coefficients of the variables from which those dimensions have been derived are known, will be

$$\gamma_p = \omega_p^2 / s_p^2 = 1 - (q_p^tE^2q_p)(q_p^tRq_p)^{-1}$$

$$p = 1,...,k$$

Coefficients γ_p vary in the range of (0,1) and can take the value 1 only when P = I, that is, if all the variables are measured without errors, and the value 0 only when P = 0 and R = I, that is, if the total variance of all variables consists only of the variance of measurement error, and variables from V have a spherical normal distribution. Because if the total variance of each variable from some set of variables consists only of the variance of measurement error, then it is obligatory that $E^2 = I$ and R = I, so all coefficients γ_p are equal to zero.

However, the matrix of reliability coefficients $P = (\rho_j)$ is often unknown, so the matrix of the variances of measurement error E^2 is as well unknown. But, if the variables from V are selected so that they represent some universe of variables U with the same field of meaning, the upper limit of the variances of measurement error is defined by the elements of the matrix U^2 (Guttman, 1945; 1953), or unique variances of those variables. That is why, in that case, the lower limit of reliability of latent dimensions may be estimated by the coefficients

$$\alpha_p = 1 - (q_p^tU^2q_p)(q_p^tRq_p)^{-1}$$

$$p = 1,...,k$$

which are derived by the procedure identical to the procedure by which the coefficients γ_p are derived with the definition $E^2 = U^2$, that is, in the same way as Guttman derived his own measure λ_6. Coefficients α_p vary in the range of (0,1),

although they cannot reach the value 1. Because R = I, then $U^2 = I$, so all coefficients α_p are equal to zero. But, since $U^2 = 0$ is not possible if the matrix R is regular, all coefficients α_p are necessarily less than 1 and tend to 1 when the unique variance of variables, from which the latent dimensions have been derived, tends to zero.

By applying the same technology, it is simple to derive measures of the absolute lower limit of reliability of latent dimensions defined by orthoblique factors. For this purpose, set $E^2 = I$. Then

$$\beta_p = 1 - (q_p{}^t R q_p)^{-1}$$

will be the measures of the absolute lower limit of reliability of latent dimensions, since, naturally, $Q^tQ = I$.

Obviously it is necessary that all coefficients β_p are less than 1, and tend to 1 when m, the number of variables in set V, tends to infinity, since then each squared form of matrix R tends to infinity. If R = I, then, of course, all coefficients β_p are equal to zero. However, the lower limit of those coefficients need not be zero, because it is possible, but not for all coefficients β_p, that variance s_p^2 of some latent dimension is less than 1. Naturally, the latent dimension which emits less information than any other variable from which it was derived, has no sense, and it is probably best discovered on the basis of the values of coefficients β_p.

3. Results and discussion

By componential analysis of variables for estimating the social status of the selected young dancers of standard and Latin American dances, by applying Momirović's B6 criterion four characteristic roots have been obtained which may be considered as statistically important. The total percentage of the explained variability of the applied system of variables amounts 56.28%. What can be seen by the inspection of (table 1) is monotonic declining of both the characteristic root and percentage of the explained variance by 14.22% for the second principal component and by 4.89% for the fourth principal component, so they could be considered as products of hyper factorization. Most probably this occurred when also the communalities of variables whose values in the whole matrix equals one, were taken into account.

The largest projections on the first oblimin factor are of the groups of variables by which the institutionalized subsystem has been evaluated, precisely the professional status by which a degree of expert power of an individual in a working organization has been determined, socio-political status, by which a certain

position of an individual in socio-political and sport organizations has been determined, where the test vector which explains this subsystem (DRORGM), the mother's function in socio-political or professional organizations, is dominantly representative. The second group of variables which significantly determine this oblimin factor belongs to the group of the sanction subsystem where the variable of the total household income (PRIH) is a dominant feature of the basic economic status, or the net income in the family. The features of this oblimin factor are, also, the variables for estimating the lifestyle (above-average living standard but as well as the parents' knowledge of foreign languages by which the educational status is quantified) that is subordinated to socialization subsystem. Recognizing the real fact that dancers as entities realise during their lives various roles in various groups, it becomes clear that the first oblimin factor, to which the most important kinesiological reality is given, presents a dominant feature of the selected young dancers of folk dance, so it is possible to nominate a social status factor.

The second oblimin factor is defined by the variables of the parents' educational status with a negative sign which belong to the socialization subsystem as well as the parents' political orientation which belongs to the institutional subsystem.

This latent dimension is bipolar which has as a dominant feature a low lifestyle, poor education of parents, ignorance of the subject's language, but also mostly left political orientation of parents.

The third oblimin factor is explained by variables of the achieved success in the final school year (USPEH), approximate amount of books in the home library (KNJIGE), sports results achieved by parents (SPORTO i SPORTM) and the variable of whether the family has a weekend cottage or not. The dominant feature of young dancers is a low level of education of an individual, low life status and a low professional position of the mother.

The fourth oblimin factor has the highest correlation with the variables of the parents' education level, then the variables of basic residential status (M15, M15O i M15M), as well as the lifestyle variables like whether the family owns a TV and an automobile (TV and AUTO). This space of dancers involved in standard and Latin American dances requires further research with new methods and new instruments for its evaluation in order to enter a deeper and more comprehensive analysis of dancers' social status.

MATRIX OF THE PRINCIPAL COMPONENTS OF DANCERS' SOCIAL STATUS

Table 1.

Variable	FAC1	FAC2	FAC3	FAC4
OBRO	-.10	-.87	.20	.11
OBRM	-.11	-.86	.14	.17
JEZ	.04	-.54	.01	.13
JEZO	.53	-.26	-.14	-.03
JEZM	.64	.21	.18	.13
ŠKOLA	.66	.04	.21	.10
ŠKOLAO	-.19	.06	.54	.50
ŠKOLAM	.67	-.01	.18	.15
KVALO	-.31	-.18	.25	.68
KVALM	-.33	.13	-.30	.55
DEDAO	.08	-.30	-.21	.39
DEDAM	-.10	-.02	-.46	-.01
USPEH	-.22	-.25	-.83	.01
PON	-.51	-.39	-.31	.17
SPPORT	-.49	-.58	.17	.37
M15	.01	-.16	.06	.65
M15O	-.21	.30	.14	.69
M15M	.47	.19	-.24	.54
MESTO	.14	-.02	-.21	.52
CUVAO	-.24	.04	-.68	.22
DECAR	-.33	-.31	-.30	.40
OBRS	-.45	.10	-.31	.27
OBRP	-.67	-.23	.02	.50
SPORTO	-.39	.18	-.71	.22
SPORTM	-.38	.33	-.71	.17
KNJIGE	-.19	.09	-.84	-.07
LEVIO	-.13	.70	-.24	.28

Table continued on next page...

...Table continued from previous page				
LEVIM	-.42	.61	-.09	.47
DESNIO	-.35	.60	.09	.59
DESNIM	-.10	.48	-.20	.10
CENTARO	-.35	.55	.06	.50
CENTAR	-.15	.37	-.77	.00
PROFO	-.09	-.57	-.18	.07
PROFM	-.28	.09	-.71	.18
POLITO	.45	.21	-.37	-.27
POLITM	.64	.08	.01	-.16
SPORGO	.85	.13	-.01	-.35
SPORGM	.84	.09	.26	-.30
DRORGO	.40	-.04	.14	-.04
DRORGM	.92	.05	.29	-.21
TV	.11	.19	.43	.60
AUTO	.12	.05	.03	.53
AUTON	.44	.00	-.07	.02
VIK	.17	.14	-.73	-.13
VIDEO	.61	-.09	-.24	-.12
MUZIK	.65	-.30	.22	-.13
KOMP	.82	-.06	.25	-.11
FRIZ	.66	-.16	.15	-.08
MSUD	.68	.15	.47	.01
MVES	.69	-.16	.40	-.04
STAN	.69	-.41	.31	-.18
KOMF	.10	-.91	.15	-.20
PRIH	.83	-.23	.36	-.32
LAMBDA	13.77	7.05	5.94	3.53
%	27.14	14.22	10.03	4.89
CUM %	27.14	41.36	51.39	56.28

PATTERN MATRIX OF DANCERS' SOCIAL STATUS

Table 2.

Variable	OBL1	OBL2	OBL3	OBL4
OBRO	-.12	-.88	.22	.13
OBRM	-.11	-.86	.14	.17
JEZ	.03	-.54	.01	.13
JEZO	.53	-.26	-.14	-.03
JEZM	.64	.21	.18	.13
ŠKOLA	.66	.04	.21	.10
ŠKOLAO	-.19	.06	.54	.50
ŠKOLAM	.67	-.01	.18	.15
KVALO	-.31	-.18	.25	.68
KVALM	-.33	.13	-.30	.55
DEDAO	.08	-.30	-.21	.39
DEDAM	-.10	-.02	-.46	-.01
USPEH	-.22	-.25	-.83	.01
PON	-.51	-.39	-.31	.17
SPPORT	-.49	-.58	.17	.37
M15	.01	-.16	.06	.65
M15O	-.21	.30	.14	.69
M15M	.47	.19	-.24	.54
MESTO	.14	-.02	-.21	.52
CUVAO	-.24	.04	-.68	.22
DECAR	-.33	-.31	-.30	.40
OBRS	-.37	.07	-.25	.19
OBRP	-.62	-.25	.10	.39
SPORTO	-.26	.12	-.66	.16
SPORTM	-.26	.28	-.66	.10
KNJIGE	-.09	.03	-.83	-.10
LEVIO	-.05	.68	-.19	.25

Table continued on next page...

...Table continued from previous page				
LEVIM	-.34	.59	.01	.38
DESNIO	-.27	.59	.18	.52
DESNIM	-.06	.47	-.16	.07
CENTARO	-.28	.54	.15	.43
CENTAR	-.03	.32	-.76	-.03
PROFO	-.06	-.59	-.20	.08
PROFM	-.15	.04	-.69	.15
POLITO	.48	.20	-.43	-.19
POLITM	.65	.09	-.09	-.04
SPORGO	.84	.14	-.15	-.20
SPORGM	.80	.12	.14	-.15
DRORGO	.46	-.030	.07	.04
DRORGM	.89	.06	.16	-.05
TV	.16	.20	.43	.63
AUTO	.23	.03	.00	.57
AUTON	.48	-.00	-.14	.10
VIK	.27	.09	-.77	-.09
VIDEO	.66	-.10	-.34	.01
MUZIK	.63	-.28	.11	.00
KOMP	.81	-.04	.12	.04
FRIZ	.66	-.15	.04	.05
MSUD	.65	.18	.38	.13
MVES	.67	-.13	.29	.10
STAN	.65	-.39	.19	-.04
KOMF	.05	-.90	.08	-.15
PRIH	.76	-.19	.23	-.16

STRUCTURE MATRIX OF DANCERS' SOCIAL STATUS

Table 3.

Variable	OBL1	OBL2	OBL3	OBL4
OBRO	-.10	-.89	.25	.12
OBRM	-.11	-.87	.17	.15
JEZ	.01	-.54	.05	.10
JEZO	.52	-.26	-.05	-.13
JEZM	.64	.19	.26	.01
ŠKOLA	.68	.02	.31	-.03
ŠKOLAO	-.20	.05	.50	.53
ŠKOLAM	.67	-.02	.28	.02
KVALO	-.39	-.17	.20	.73
KVALM	-.48	.17	-.36	.62
DEDAO	-.02	-.27	-.18	.37
DEDAM	-.16	.01	-.48	.03
USPEH	-.35	-.19	-.85	.05
PON	-.58	-.36	-.36	.26
SPPORT	-.53	-.57	.13	.44
M15	-.10	-.14	.06	.64
M15O	-.33	.32	.08	.74
M15M	.32	.21	-.19	.46
MESTO	.01	.00	-.19	.50
CUVAO	-.38	.09	-.72	.28
DECAR	-.45	-.27	-.34	.46
OBRS	-.45	.10	-.31	.27
OBRP	-.67	-.23	.02	.50
SPORTO	-.39	.18	-.71	.22
SPORTM	-.38	.33	-.71	.17
KNJIGE	-.19	.09	-.84	-.07
LEVIO	-.13	.70	-.24	.28

Table continued on next page...

...Table continued from previous page				
LEVIM	-.42	.61	-.09	.47
DESNIO	-.35	.60	.09	.59
DESNIM	-.10	.48	-.20	.10
CENTARO	-.35	.55	.06	.50
CENTAR	-.15	.37	-.77	.00
PROFO	-.09	-.57	-.18	.07
PROFM	-.28	.09	-.71	.18
POLITO	.45	.21	-.37	-.27
POLITM	.64	.08	.01	-.16
SPORGO	.85	.13	-.01	-.35
SPORGM	.84	.09	.26	-.30
DRORGO	.40	-.04	.14	-.04
DRORGM	.92	.05	.29	-.21
TV	.11	.19	.43	.60
AUTO	.12	.05	.03	.53
AUTON	.44	.00	-.07	.02
VIK	.17	.14	-.73	-.13
VIDEO	.61	-.09	-.24	-.12
MUZIK	.65	-.30	.22	-.13
KOMP	.82	-.06	.25	-.11
FRIZ	.66	-.16	.15	-.08
MSUD	.68	.15	.47	.01
MVES	.69	-.16	.40	-.04
STAN	.69	-.41	.31	-.18
KOMF	.10	-.91	.15	-.20
PRIH	.83	-.23	.36	-.32

INTERCORRELATION MATRIX OF OBLIMIN FACTORS

Table 4.

Variable	OBL1	OBL2	OBL3	OBL4
OBL1	1.00	-.02	.15	-.19
OBL2	-.02	1.00	-.06	.04
OBL3	.15	-.06	1.00	-.01
OBL4	-.19	.04	-.01	1.00

4. Conclusion

The research was conducted in order to determine the structure of the social status of dancers, occupied with the Latin American and standard dances.

In order to determine the structure of sociological status, 267 male dancers, aged from 11 to 13, actively engaged in standard and Latin American dances, were involved.

The model constructed by Saksida and Petrović 1972, Saksida, Caserman and Petrović 1974, Momirović and Hošek 1975 was used for the evaluation of the social status. Appendix INST2, questionnaire SSMIN were also applied in the research.

All the data collected in this research were processed in the Multidiscipline Research Centre of the Faculty of Sports and Physical Education, the University of Priština, supported by the system of data processing programmes developed by D. Popović, 1980, 1993, K. Momirović and D. Popović 2003.

Using the component analysis of variables for the evaluation of the social status of the selected young dancers of Latino American and standard dances, applying Momcilović's B6 criterion, four characteristic roots were obtained and thus four factors that could be considered as statistically significant. The greatest projections on *the first oblimin factor* are of the groups of the variables, which were used for estimating the institutional subsystem, especially professional status and then the variables included in the group of the sanction subsystem. *The second oblimin factor* was defined by the variables of educational statuses of the father and mother with the negative sign, which belong to the socialization system, political orientation of the parents included in the institutional subsystem. *The third oblimin factor* is explained by the variables, that dominantly mark a low level of the individual's education, low average life status and low professional

position of the mother. *The fourth oblimin factor* has the highest correlation with the variables of the educational level of the parents' education and variables of the basic residential status.

5. References

[1.] Boli, E.: (1996) Structure of intellectual and musical abilities and personality traits of female dancers involved in standard and Latin American dances, Master thesis, Priština: The University of Priština, Faculty of Physical Education.

[2.] Boli, E., Popović, D., A. Hošek.: (2009) Sport and Crime, Leposavić: The University of Priština, Multidisciplinary Research Center of the Faculty of Sport and Physical Education.

[3.] Boli, E.: (2011) Structure of anthropologic dimensions of male and female dancers and data processing for their evaluation and monitoring. (Monograph), Leposavić: The University in Priština, Multidisciplinary Research Center of the Faculty of Sport and Physical Education.

[4.] Momirović, D, Wolf, B. i Popović, D: (1999) Introduction to the measurement theory and internal metric characteristics of the composite measuring instruments (textbook), Priština: The University of Priština, Faculty of Physical Education.

[5.] Popović, D., Antić, K., Stanković, V., Petković, V. & Stanković, S.: (1989) Procedures for objectification of evaluation of the efficiency in performing judo techniques. Scientific Youth, 21(1-2), 83-89.

[6.] Popović, D., Kocić, J., Boli, E. & Stanković, V.: (1995) Conative characteristics of female dancers, Cologne: International Congress "Images of Sport in the World", 75th Anniversary of the German Sport University, Abstract Volume, (pp. 96), Open Forum, Germany.

[7.] Popović, D., Petrović, J., Boli, E. & Stanković, V.: (1995) The structure of the personality of female dancers, Komotini: 3rd International Congress on Physical Education and Sport, Exercise & society supplement issue No. 11 (pp. 196), Greece.

[8.] Popović, D., Stanković, V., Kulić, R. & Grigoropulos, P.: (1996) The structure of personality of handball players, Komotini: 4th International Congress on Physical Education and Sport, Exercise & society supplement issue No. 15 (pp. 164), Greece.

[9.] Popović, D.: (1988) Application methods of factorial analysis for determining morphological types, Varna: 4th international symposium on the methodology of mathematical modelling, Bulgaria.

[10.] Popović, D.: (1991) Methodology of research in Physical Education (textbook), Niš: The University of Niš, Scientific Youth.

[11.] Popović, D.: (1992) Methodology of research in Physical Education, Athens, Greece.

[12.] Popović, D.: (1993) Programs and subprograms for analysis of quantitative modifications (textbook), Priština: The University of Priština, Faculty of Physical Education, Multidisciplinary Research Center.

[13.] Popović, D.: (1993) Determining the structure of psychosomatic dimensions in fights and data processing for their evaluation and monitoring (monograph), Priština: The University of Priština, Faculty of Physical Education.

Received on Nov. 23rd, 2010.
Approved on Dec. 17th, 2011.

Original scientific paper *UDC 793.3.071.2:159.923.2.072.59*

The structure of the social status of dancers

Evagelia Boli, Dragan Popović, Ankica Hoshek-Momirović, Jasna Popović & Vladimir Savić

Faculty of Sports and Physical Education, the University of Priština temporarily based in Leposavić, Serbia

e-mail: evagelia.boli@pr.ac.rs

Summary

The research was conducted in order to determine the structure of the social status of dancers, occupied with the Latin American and standard dances. This research involved 267 male dancers, aged from 11 to 13. The model constructed by Saksida and Petrović 1972, Saksida, Caserman and Petrović 1974, Momcilović and Hoshek 1975 was used for the evaluation of the social status. Appendix INST2, questionnaire SSMIN were also applied in the research. All the data collected in this research were processed in the Multidiscipline Research Centre of the Faculty of Sports and Physical Education, the University of Priština, supported by the system of data processing programmes developed by D. Popović, 1980, 1993, K. Momirović and D. Popović 2003. Using the component analysis of variables for the evaluation of the social status of the selected young Latin American and standard dancers, applying Momcilović's B6 criterion, four characteristic roots were obtained as well as four factors that could be considered as statistically significant. The greatest projections on the first oblimin factor are of

the groups of variables, which were used for estimating the institutional subsystem, especially professional status and then variables included in the group of the sanction subsystem. The second oblimin factor was defined by the variables of educational status of the father and mother with the negative sign, included in the social system, but also political orientation of the parents included in the institutional system. The third oblimin factor was explained by the variables, that dominantly marked a low level of the individual's education, low average life status and low professional position of the mother. The fourth oblimin factor has the highest correlation with the variables of the educational level of the parents' education and variables of the basic residential status.

Key words: /education/group/subsystem/structure/social status/questionnaire/model/

Evagelia Boli
Faculty of Sports and Physical Education, the University of Priština
temporarily based in Leposavić, Serbia
e-mail: evagelia.boli@pr.ac.rs