Structure of Situation Motor Stereotips of Karate Competitors and Karate Representatives

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Abstract: *This survey was conducted on a deliberate sample of 32 respondents, 16 karate competitors and 16 karate representatives, male, from the Republic of Macedonia. The main goal of this research was to determine the structure of situational motor stereotypes (situational karate tests) between karate competitors and karate representatives in a sports fight for each category separately. In the study, a total of 15 variables of karate elements applied in a sports karate combat divided into 5 spaces were used: three variables of attack with one hand strike, three variables of attack with two hands techniques, three variables of attack with three hands techniques , three variables of attack with one stroke with leg and three variables of atta ck with combined techniques of hands and legs. The results of the factor analysis obtained by this study show the extraction of 3 significant latent dimensions in the category of competitors and 5 significant latent dimensions in the category of representatives.*

Keywords: *situational karate tests, karate elements, sports fights, competitors and representatives, factor analysis*

Introduction

It is a fact that in one particular fight a single situation is never repeated twice in the same way, athletes are forced to reorganize learned stereotypes of motion in a short period, depending on whether they are in the phase is attack or defense. In the karate training program a great attention is paid to the development of anthropological characteristics in accordance with their specific preparation (power, speed, coordination, balance and flexibility). Although these are probably the most important skills for success in karate, it is hard to calculate their independent effect on the very success. In fact, some of these skills are different at karateathletes who belong to different weight and age categories. The value of these researches in the field of karate sports consists of finding and determining the most economical and most effective factors that are important for achieving the top results, by revealing the personality structure and finding suitable measuring instruments. In order to achieve the desired goal, as many information as possible should be properly incorporated and used in the process of building the personality of the karate athlete. Therefore determining the structure of situational motor stereotypes (situational karate tests) is of great importance in karate sports. Modern karate competitions consist of two individually important karate disciplines kumite and kata. Due to the fact that they are based on different selections of motion techniques, their kinematic and kinetic parameters, they differ in their anthropometric and physical performance. Kumite competitions are characterized by the complex technical structure and specific abilities of the competitors in the area of combined attack techniques (Chaabène, H., et all. 2014).

Methods of Work

This survey was conducted with a deliberate sample of 32 participants, 16 karate competitors and 16 karate male and female from the Republic of Macedonia. Respondents were recorded in simulated fighting in a training match where, during a 3-minute combat, they were supposed to perform as many attacks with karate techniques as the subject of the research: a one-handed attack, an attack with two hand techniques , an attack with three hands techniques, an attack with one stroke with leg and an attack with combined techniques of hands and leg (techniques that are commonly used in a sports fight). Each of the respondents individually produced five bouts (with breaks between each fight), which included all five groups of attacks with karate techniques. Also, it was necessary to meet certain criteria

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on the day of carrying out the measurements: to be psycho-physically healthy on the day of the check, to regularly attend training in their clubs, to be competitors in the respective categories and during the measurement to maximally and conscientiously they carry out the tasks set, which would give a realistic picture of the examined state. In the research, a total of 15 variables of situational motor tests were applied (according to Kostovski, Ž. et all. 2014 and Zaborski, B. 2012), divided into 5 spaces, of which:

- three variables of attack with one hand strike (kizame tsuki KC, kizame tsuki back step and KCZS, tsako tsuki DzC),
- three variables of attack with two hands techniques (kizame tsuki- tsako tsuki jodan KCDzCJ, kizame tsuki-tsako tsuki chudan KCDzCC and tsako tsuki-tsako tsuki jodan DzCDzCJ),
- three variables of attack with three hands techniques (kizame tsuki-tsako tsuki-step tsako tsuki KCDzCDzC, tsako tsuki-kizame tsuki-tsako tsuki DzCKTsDzC and kizame tsuki-step tsako tsuki-tsako tsuki other hand KCI2DzC)
- three variables of attack with one leg stroke (mawashi geri, uramawashi geri and mawashi geri with a back leg) and
- three variables of attack with combined techniques of hand and leg (kizame tsuki-tsako tsuki-mawashi geri back leg.

KCDzCMG, tsako tsuki chudan-mawashi geri chudan-mawashi geri jodan DzCMGJ and kizame tsuki-tsako tsuki-mawashi geri jodan KCDzCMGJ).

STATISTICAL METHODS FOR DATA PROCESSING
The data obtained from this research according to the characteristics and size of the selected sample are processed in several programs. For the purposes of this research, the following were calculated: Mean - arithmetic mean, SD - standard deviation, Min., Max., Skew - symmetry of distribution, Kurt - according to the roundness of the distribution of the results, the homogeneity of the results in a certain biomotor test, KS - Kolmogorov-Smirnov, which determines the normal distribution of results and factor analysis.

RESULTS AND DISCUSSION
The basic descriptive statistical parameters (competitors) of the specific - motor skills are shown in table no. 1 from which it can be concluded that the standard deviation (Std.Dev) in the applied variables is with normal values, ie, is less than 1/3 of the arithmetic mean. Minimum and maximum values are logical and expected and do not indicate the existence of extreme values that indicate that the grouping of results mainly moves around its own arithmetic mean.

From the analysis of the projection of the Gaussian curve (Skew.), which determines the symmetry of the distribution of the result, it can be concluded that the displayed coefficients range within the limits of the recommended values (-1 + 1), with the exception of the variable direct attack tsako tsuki - tsako tsuki jodan (DzCDzCJ = -1.03), which suggests that in this variable, most of the respondents show slightly higher values.

From the values of the curvature of the Gaussian curve (Kurt.), a platykurtic distribution is observed, that is, all the variables show consistency and none of them can be seen deviation.

The distribution of the results of the variables obtained by the Kolmogorov-Smirnov method shows that the values of all the examined variables do not depart from the normal distribution of the results.

Table 1. Descriptive statistical parameters of specific motor skills in the participants - competitors and representatives

	Mean	Std. Dev.	Min.	Max.	Skew.	Kurt.	K-S	Sig	Mean	Std. Dev.	Min.	Max.	Skew.	Kurt.	K-S	Sig
KC	15.13	3.95	10.00	22.00	0.12	-1.06	0.66	0.78	15.31	1.85	11.00	19.00	-0.45	1.25	0.83	0.50
KCZS	11.25	1.81	8.00	14.00	-0.12	-0.87	0.64	0.80	13.19	2.46	9.00	19.00	0.53	0.92	0.48	0.97
DzC	14.94	3.97	8.00	22.00	0.41	-0.28	0.87	0.43	14.75	2.79	10.00	21.00	0.55	0.68	0.86	0.45
KCDzCJ	11.63	1.75	8.00	14.00	-0.54	-0.36	0.64	0.81	11.31	1.78	8.00	14.00	-0.13	-0.86	0.85	0.46
KCDzCC	11.38	1.41	9.00	13.00	-0.28	-1.02	0.75	0.62	10.94	1.57	8.00	13.00	-0.83	-0.53	1.25	0.09
DzCDzCJ	11.56	1.71	8.00	14.00	1.03*	0.72	0.90	0.39	11.13	1.41	9.00	13.00	0.08	-1.23	0.65	0.79
KCDzCDzC	7.94	1.77	5.00	12.00	0.60	0.53	0.69	0.72	8.88	0.89	7.00	10.00	-0.39	-0.28	0.97	0.30
DzCKTsDzC	7.44	1.36	5.00	10.00	0.51	0.21	1.00	0.27	8.63	1.41	7.00	11.00	0.44	-1.10	0.94	0.35
KCI2DzC	7.13	1.36	5.00	10.00	0.47	-0.40	0.93	0.35	7.56	1.21	6.00	9.00	-0.04	-1.58	0.78	0.58
AWMG	13.06	2.14	10.00	17.00	-0.05	-0.95	0.68	0.75	13.19	1.64	11.00	16.00	0.17	-1.23	0.71	0.69
UMWG	9.63	1.75	6.00	13.00	-0.20	0.54	0.69	0.73	10.75	1.13	9.00	13.00	0.24	-0.40	0.74	0.64

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MWGZN	13.13	2.36	9.00	18.00	0.35	-0.23	0.51	0.95	13.06	2.35	10.00	17.00	0.20	-1.20	0.58	0.89
KCDzCMG	8.19	1.56	5.00	12.00	0.61	2.07	1.19	0.12	7.88	0.96	7.00	10.00	0.80	-0.23	1.03	0.24
DzCMGJ	6.19	1.11	4.00	8.00	-0.42	-0.76	1.07	0.20	6.81	1.05	5.00	9.00	0.42	-0.20	0.87	0.43
KCDzCMGJ	8.06	1.53	6.00	10.00	-0.25	-1.49	0.92	0.36	7.44	0.96	6.00	9.00	0.46	-0.59	1.20	0.11

The values of the variables based on the standard deviation (Table no. 1), clearly show that this is a homogeneous group of respondents, since there is no deviation greater than one third of the arithmetic mean of the examined variables. The minimum and maximum results obtained are characteristic for the selected sample. Also, from the values of the distribution of the results of the skewness (Skew.), It is evident that it is a normal distribution of them, that is, in the range of moderate symmetry (-1 + 1). The degree of curvature at the top of the curve (Kurt.) is platicurtic, indicating that all the values obtained are less than 3. The homogeneity and distribution of the results in these variables (K-S) is in the range of the normal values and shows no deviation.

On the basis of the inter-correlation matrix of the applied manifest variables of specific motor skills, the characteristic roots (lambda), which explain the common variance of each isolated main component in the first row space, are derived (Table no 2).

Table 2. Extraction Method: Principal Component Analysis - competitors

	Principal component			Varimax		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.54	50.30	50.30	5.41	36.05	36.05
2	2.27	15.12	65.42	3.00	20.01	56.06
3	1.56	10.38	**75.80**	2.96	19.74	**75.80***

The applied Gutman-Kaiser criterion extracted 3 significant latent dimensions. The first of them with its own value (total = 5.41) explains 36.05% of the total variation of the variables, the second with value (total = 3.00) explains 20.01% of the total variance and the third with its own value of (total = 2.96), explains 19.74% of total variability. The total explanation variance by the extracted latent dimensions is 75.80% of the common variance of the entire system and appears to be sufficient to explicate the variability and covariance of the manifest variables applied to the sample competitors.

Table 3. Principal component in Varimax - competitors

	PC1	PC2	PC3	Com	V1	V2	V3
KC	0.68	-0.32	0.33	0.67	**0.82**	0.03	0.05
KCZS	0.57	-0.53	0.03	0.60	**0.68**	-0.26	0.27
DzC	0.89	-0.03	0.14	0.81	**0.78**	0.33	0.31
KCDzCJ	0.81	-0.15	-0.19	0.71	0.62	0.14	**0.56**
KCDzCC	0.59	-0.09	-0.75	0.92	0.17	0.00	**0.94**
DzCDzCJ	0.74	0.08	-0.57	0.88	0.30	0.25	**0.86**
KCDzCDzC	0.81	-0.37	0.19	0.83	**0.88**	0.01	0.23
DzCKTsDzC	0.81	-0.08	0.21	0.70	**0.77**	0.27	0.21
KCl2DzC	0.80	0.41	0.08	0.82	0.50	**0.70**	0.30
AWMG	0.88	-0.18	0.07	0.81	**0.80**	0.18	0.37
UMWG	0.33	0.68	0.32	0.68	0.12	**0.80**	-0.14
MWGZN	0.36	0.83	-0.05	0.82	-0.08	**0.88**	0.19
KCDzCMG	0.75	-0.14	-0.12	0.60	**0.60**	0.14	0.47
DzCMGJ	0.67	0.11	0.51	0.71	**0.71**	**0.44**	-0.12
KCDzCMGJ	0.65	0.57	-0.20	0.78	0.18	**0.72**	**0.48**

From the heights of the projections of the manifest variables of the first major component of the Varimax factor matrix, one can conclude that most variables have significant, medium to moderately high and high projections, which could mean that the factors obtained are in a relatively significant correlation. The value of communalities is high, which

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means that the system of factors relatively well defines the variability and co-variability of manifests variables.

The first latent dimension (F1) is a **factor of a relatively complex structure of segmental movements in a sagittal plane with circular movements in three planes**. It saturates the medium and high projections of the variables represented by techniques of attack with one hand stroke (kizame tsuki, kizame tsuki with the back step and tsako tsuki), techniques of attack with three hands strokes (kizame tsuki - tsako tsuki - step tsako tsuki, tsako tsuki - kizame tsuki - tsako tsuki i kizame tsuki - step tsako tsuki jodan/ćudan). Hands and legs techniques in karate sports are the dominant techniques by which competitors win points or win the fight. Previous research of modern technical and tactical indices in karate battles suggests that hand techniques have a very big impact (Vidranski, T. 2011). Also, according to Mattias, B. (1999) of the predominance of manual techniques in achieving points and the impact of mawashi geri with front leg, one can see their connection. Mawashi geri is a very useful strike when the fight takes place in a close or manual combination because it is difficult for the opponent to see the impact that comes from his circular path. In this situation, either the front or back leg can be used, although kicking with the front leg is faster, and virtually impossible for the opponent to block.

The second latent factor (F2) can be defined as a **factor of circular techniques with leg**. It is represented with high values from the variations of karate techniques of leg attack (ura mawashi geri and mawashi geri with the back leg), relatively high value of the variable from the group of techniques of combined attack by hand and leg (kizame tsuki - tsako tsuki - mawashi geri chudan). In cases where there is a medium or long distance, these leg strikes can be easily combined with the arms and legs. According to the theoretical arguments taken from previous studies (Mattias, B. 1999), these techniques can be used as quick combinations, which is vital for sparring. Also, due to the rotation of the hip, which provides greater acceptance than the mae-geri, the body is well positioned against the opponent, for which it will be more difficult to reach a counter-strike (which is impossible with a linear stroke like the mae-geri).

The third latent dimension (F3) is defined by very high projections of the variables that are representative of the group of attack techniques with two hands strokes (kizame tsuki - tsako tsuki jodan, kizame tsuki - tsako tsuki chudan and tsako tsuki - tsako tsuki jodan) and represents a relative ly clean **factor of karate attack with two hands techniques.** It is believed that there are five techniques by hand in the karate fight: tsako tsuki jodan, tsako tsuki chudan, kizami tsuki, oi tsuki and uraken uchi. Hand strokes are more natural than impacts, they are faster, easier to control, and it's harder to block or avoid them, which can be easily explained why they are more commonly used in karate fight than kicking (Vidranski, T. 2011). These hand and leg techniques according to the literature so far are one of the most commonly used when it comes to the sporting struggle. Carate players used multiple upper limbs (76.19%) as opposed to lower extremity techniques (23.80%). Kizame tsuki was the most used technique with 29.1% of all other techniques used according to Chaabène, H., et all. (2014). From here comes the conclusion that hands and legs strokes can be easily combined, including close, intermediate and long distances. According to the results obtained from the research conducted by Vidranski, T. et al. (2015), the results in the technical and tactical combat concept were influenced by the rapid techniques used by combatants as a means of tactical surprise for gaining preference in the attack phase, ie karate fighting was primarily conquered using simple techniques.

The characteristic roots and the explained variance of the motor manifest variables by the significant main components in the first row are given in Table no 4. The applied Gutman-Kaiser criterion extracted 5 significant latent dimensions that explain 84.50% of the common variance of the entire system and are sufficient to explicate the variability and co-variability of manifest variables applied to the sample of examinees - representatives.

Table 4. Extraction Method: Principal Component Analysis - representatives

Component	Principal component			Varimax		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.71	38.10	38.10	4.36	29.09	29.09
2	2.96	19.72	57.81	2.39	15.95	45.04
3	1.85	12.33	70.14	2.33	15.55	60.59
4	1.15	7.64	77.78	2.13	14.18	74.77
5	1.01	6.72	84.50	1.46	9.73	**84.50***

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Individually, the first one with its own value (total = 4.36) explains 29.09% of the total variance of variables, the second with value (total = 2.39) explains 15.95% of the total variance, the third with its own value of (total = 2.33), explains 15.55 % of the total variability, the fourth with a value (total = 2.13) explains 14.18% of the total variance and the fifth with its own value of (total = 1.46), explains 9.73% of the total variability.

Table 5. *Principal component and Varimax - representatives*

	PC1	PC2	PC3	PC4	PC5	Com	V1	V2	V3	V4	V5
KC	-0.39	0.73	-0.14	0.31	0.33	0.91	-0.16	**-0.88**	0.31	0.00	0.09
KCZS	0.05	0.79	0.21	0.33	-0.31	0.87	0.16	-0.32	**0.85**	-0.14	0.02
DzC	0.14	0.80	0.52	-0.04	0.00	0.93	-0.05	-0.18	**0.87**	**0.37**	0.08
KCDzCJ	0.82	0.15	-0.11	0.17	-0.25	0.79	**0.82**	0.18	0.25	0.12	-0.11
KCDzCC	0.79	0.30	0.24	-0.02	0.00	0.77	**0.57**	0.19	**0.42**	**0.48**	0.03
DzCDzCJ	0.70	0.36	-0.05	-0.54	0.11	0.92	**0.36**	0.11	0.22	**0.74**	**-0.44**
KCDzCDzC	0.77	0.31	-0.15	0.12	-0.22	0.77	**0.77**	0.05	0.33	0.17	-0.19
DzCKTsDzC	0.86	-0.11	0.15	0.05	-0.15	0.81	**0.70**	**0.47**	0.15	0.27	0.07
KCl2DzC	0.84	0.07	-0.42	-0.07	-0.01	0.90	**0.82**	0.06	-0.09	0.33	-0.33
AWMG	0.64	-0.45	0.39	0.10	-0.19	0.81	**0.45**	**0.71**	0.02	0.10	0.31
UMWG	0.76	-0.25	-0.13	0.23	0.32	0.82	**0.73**	0.11	-0.30	0.35	0.25
MWGZN	0.03	-0.30	0.73	0.47	0.28	0.93	-0.08	0.26	0.09	0.05	**0.92**
KCDzCMG	0.64	0.13	0.25	-0.27	0.61	0.93	0.26	0.05	0.02	**0.91**	0.19
DzCMGJ	0.55	-0.29	-0.52	0.45	0.18	0.89	**0.80**	-0.13	**-0.47**	-0.05	0.13
KCDzCMGJ	0.21	-0.58	0.42	-0.19	-0.17	0.62	-0.05	**0.75**	-0.13	0.05	0.18

From the heights of the projections of the manifest variables of the first major component of the Varimax factor matrix, one can conclude that most variables have significant, medium to high projections, which could mean that the factors obtained are in high correlation.

The value of comunalities is high, which means that the system of factors relatively well defines the variability and co-variability of manifests variables. The orthogonal varimax solution has led to the creation of structures that satisfy the simplicity conditions of the same, with the exception of some manifest variables (with relatively lower values) that have projections with close values of more than one latent dimension. The interpretation of the obtained factors would be in the following directions:

The first latent dimension (F1), which can be defined as a **factor of combined and complex attack**, is composed of medium and relatively high projections of variables represented by: techniques of attack with two hands strokes (kizame tsuki - tsako tsuki jodan, kizame tsuki - tsako tsuki chudan i tsako tsuki - tsako tsuki jodan), techniques of attack with three hands strokes (kizame tsuki - tsako tsuki - step tsako tsuki, tsako tsuki - kizame tsuki - tsako tsuki and kizame tsuki - step tsako tsuki jodan/chudan) two legs strokes (mawashi geri and uramawashi geri) and one combined technique of strokes by hand and leg (tsako tsuki - mawashi çudan - mawashi jodan). Karate competitions are characterized by a complex technical structure and specific competitive abilities in the area of combined attack techniques (Kostovski, Ž., et all. (2013). Different techniques such as kizame zuki and tsako tsuki are the most used competitive techniques, which are structurally simple and safe movements and therefore most commonly applied. The results of the conducted researches indicate that direct impacts are the most effective techniques of attack, where they have the advantage of hitting the legs as strokes. These types of attacks can be used as: single attack, counter attack or in combination of both (Vidranski, T. 2011).

In the structure of the *second latent factor (F2)* - **complex factor of continuous attack**, there are intermediate to relatively high projections of three variables belonging to different sets of techniques. The variable kizame tsuki (KC), belonging to the group of techniques with one hand stroke, variable ashi mawashi geri (AMG), and kizame tsuki - tsako tsuki - mawashi geri chudan (KCDzCMGJ) belonging to combined techniques by hand and leg. The variable DzCKTsDzC (tsako tsuki - kizame tsuki - tsako tsuki), which belongs to the group of techniques with three hand strokes, with a much higher projection participates in the definition of the first factor and therefore is not inter-

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preted here. If we analyze the substance of this factor more deeply, it can be noted that in fact all three techniques, although belonging to different groups, repeat and complement one another. This is also the conclusion of the research by Mikić, B. et all. (8) that competitive efficiency depends on the speed of movement with the arms and legs, the segmental hand speed, and the explosive power of the lower limbs.

The third latent factor (3) consists of two hands techniques with one stroke kizame tsuki with back step (KC) and tsako tsuki (DzC), which enter with high projections and define it as the **factor of segmental single attacks**. According to (Vidranski, 2011), the most common pointer technique is tsako tsuki jodan in the attack phase, which is 25.87% of the total pointing techniques in 274 fights. This structure makes the most commonly used karate technique in the phase of technical and tactical attack. In the second place between the technical and tactical attack and the counter-attack phase is the situational efficiency of the kizame tsuki technique. According to the reference study, we can conclude that competitors with bigger skills and winners of the match achieved an overall higher value with kizame tsuki in the attack phase. Therefore, we can conclude that more competitors who had greater skills used the technique of kizame zuki to get an initiative in the fight and achieve a higher situational efficiency in the attack phase. In addition, the technique of kizame tsuki is often used because of the low degree of biomechanical complexity and minimum requirements for amplitude in achieving points (Vidranski, T. 2011). In the context of the above, we will follow up on some of the previous studies according to which karate competitions are characterized by a complex technical structure and specific competitive abilities in the area of combined attack techniques (Jovanović S, et all. 1995). Different techniques such as kizame tsuki and tsako tsuki are the most widely used competitive techniques, which are structurally simple and safe movements and therefore are most commonly applied.

The fourth latent dimension (F4) is represented by a very high projection of the variable of the combined techniques by hand and leg kizame tsuki - tsako tsuki - mawashi geri (KCDzCMG) and the variable from the group of hand techniques with two strokes tsako tsuki - tsako tsuki jodan (DzCDzCJ). The acquired factor can be defined as a **factor of double attack by hand and leg**. As mentioned earlier, hands techniques correlate well with each other when combined, and mawashi geri (according to some of the previous studies previously mentioned in the abovementioned text) also combines well with groups of attacks with manual techniques. The justification in the interpretation of this factor can be sought in the experience of the representatives, in the wider range of performing a number of related and combined techniques (based on the greater training and competitive experience) and in the training processes that they perform together in the pre-trial periods.

The fifth latent factor (F5) is defined by the presence of the variable MGZN (mawashi geri with the back leg), which in the creation of its structure participates with very high projection and defines it as a **single leg attack factor**. According to the above-mentioned study, (Kostovski, Ž., et all 2014), it can be concluded that the competitors and the winners of the matches achieved higher values of situational efficiency of the technique mawashi geri chudan at the attack stage. It could also be noted that the group of contestants winners differed most from the group of defeated contestants in the situational efficiency of the said technique of the legs. It could be concluded that the winners of the competitions perform complex and difficult techniques, while those who were motorically inferior to their opponents can not perform these techniques. In addition to the aforementioned reasons, the technique "mawashi geri ćudan" is often used as a second and third choice technique in composite combinations. The reasons for such classification are: the lowest biomechanical complexity among all observed foot techniques and the transfer of the area for achieving body points (Vidranski, T. 2011). The presence of the variable DzCDzCJ ĐCĐCĐ (tsako tsuki - tsako tsuki jodan) is noticed, which for this factor is not important. Each individual variable of different intensity is related to the resulting factor, ie. the grouping of variables unequally represents the obtained factor. Therefore, the variable that carries the most information about it is distinguished (Perić, D.), as is the case with the latent dimension obtained.

The obtained results of the research carried out by Kostovski, Z., et all. (2013), refer to the measurement of the performance of the applied variable and, above all, the validity, sensitivity and reliability factor of the same, indicate that the test «Mawashi Geri» is characterized by a high degree of sensitivity and satisfaction of the reliability coefficients. Also, the test is simple to apply and easy to explain. The test estimates the motor dimension defined as the karate frequency of the lower limbs. According to the above, the test is recommended in the training process and the selection of karate athletes in the test battery for estimating the specific karate frequency of the lower limbs (until the construction of a new test).

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Structure of Situation Motor Stereotips of Karate Competitors and Karate Representatives

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Conclusion

The survey was conducted on a deliberate sample of 32 respondents, 16 karate players and 16 karate competitors, male, from the Republic of Macedonia. For the realization of this research, a total of 15 variables of situational motor tests were applied (Kostovski, Ž., Et all.2014 and Zaborski, B. 2012), divided in 5 spaces. The research yields results that lead to the following conclusions:

1. Three significant latent dimensions of specific motoric stereotypes (situational karate tests) among the competitors:
   - F1 - factor of a relatively complex structure of segmental movements in a sagittal plane with circular movements in three planes
   - F2 - factor of circular techniques with leg
   - F3 - factor of karate attack with two hands techniques

2. Five significant latent dimensions of specific motoric stereotypes (situational karate tests) among the representatives:
   - F1 - factor of combined and complex attack
   - F2 - a complex factor of continuous attack
   - F3 - factor of segmental single attacks
   - F4 - a factor of double attack by hand and leg.
   - F5 - single leg attack factor

The analysis of the obtained factor structure from this research leads to the conclusion that it is logical and expected. The resulting larger number of extracted latent dimensions in the respondents' representative points to the fact that they practice a greater number of techniques and combinations in their training process, which on the other hand leads to the adoption of a larger number of points in karate battles. This would be one of the conditions under which the second group of respondents (representatives) stand out from the first (contestants).

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