

JUDGING RESULTS IN FIGURE SKATING AFTER THE ISU JUDGING SYSTEM WAS INTRODUCED IN 2004

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ABSTRACT

Figure skating is the most subjective winter sport. If in other competitions, the result of the athlete is clearly monitored by a stopwatch, here the judges give marks for the performance. Judges are people who can be biased in judging or simply can make mistakes. 2002 was a turning point in figure skating judging. After the 2002 Salt Lake City USA Winter Olympics scandal, the so-called six-zero scoring system was replaced by a new judging system.

The purpose of the research is to analyze the judges' scores and dependencies between the final result and the separate segments of the evaluation when the ISU judging system was introduced in 2004. In order to achieve the set goal, the judging protocols of the Winter Olympic Games in women's figure skating were studied after the introduction of the ISU judging system in 2004.

After the introduction of the ISU judging system, the evaluation of the programs has become much more precise, where each element is evaluated separately. Expanding the scale for evaluating technical elements from -5 to +5 after the Winter Olympic games in 2018, according to the analyses carried out, leads to a greater weighting of the judging panel, which consists of 9 judges, rather than the technical panel, consisting of 3 specialists. This could ultimately lead to more objective judging in figure skating.

Keywords: figure skating, ISU judging system, dependencies between judges' marks

INTRODUCTION

Figure skating is the most subjective winter sport. If in other competitions, the result of the athlete is clearly monitored by a stopwatch, here the judges give marks for the performance. Judges are people who can be biased in judging or simply can make mistakes.

For more than 100 years, a six-zero system was used in figure skating. Six-point scoring was introduced by the International Skating Union (ISU) as early as 1901. Judges' evaluations under system 6.0 were divided into two: in the short program – for technical execution and presentation and in the free program – for technical performance and presentation. The rating scale was from 0 to 6.0: 0.0–0.9 – not fulfilled; 1.0–1.9 – very bad; 2.0–2.9 – poor; 3.0–3.9 – mediocre; 4.0–4.9 – good; 5.0–5.9 – very good; 6.0 – perfect. Each judge gave plac-

es to the competitors. A higher place was given to the figure skater with the higher amount of two judges' marks. If the participants had the same amount of the two judges' marks, then the competitor with the higher technical mark ($5.9+5.7 > 5.8+5.8$) would be placed first, since the 1988/89 season a role for ranking first in the free program, when there was the equal amount, the mark for presentation played a more significant role ($5.9+5.7 < 5.8+5.8$). As a result, participants were allocated according to the principle of relative majority. In the simplest example, if figure skater A, who had 5 first places and 4 second places, took first place, and the figure skater who had 4 first places and 5 second places took second place. In case of inconsistencies, the highest deciding place for which there was a minimum majority (at least five) judges shall be determined.

If there were several identical determining places, the figure skater with more such places took a more advanced place. If the number of such places was the same, then their amount was calculated, and if they were also equal, the total amount of judging places should be determined. Only with the equality of all these indicators did figure skaters occupy the same place, which had happened just a few times throughout competition history (6.0 system, 2022). The number of judges was always odd (not less than five, but usually nine).

2002 was a turning point in figure skating judging. After the scandal at the 2002 Salt Lake City USA Winter Olympics, the so-called existing six-zero scoring system was replaced by a new judging system. It was introduced and maintained by the International Skating Union (ISU) in 2004, and during the 2002/2003 season, the new judging system was tested at various competitions. From the 2004/2005 season,

it became the only one.

In their programs, figure skaters perform a certain set of technical elements, each of which is evaluated separately and carries its own base value, which value depends on the type of element and its degree of complexity. Each element is assessed for quality of execution. The overall technical score consists of a simple sum of the scores of all the individual technical elements of the program. Each athlete has the right to choose the set of elements they will perform, but the rules impose very strong restrictions on the set of elements and attempts to be performed, including the free programs (Chichkova & Inozemtseva, 2018). After the end of the execution of the program, the judges also evaluate its execution with five components. Each component is evaluated on a ten-point scale up to 0.25: Skating Skills, Transitions, Performance, Composition, and Interpretation of the music (ISU, 2018).

Rank	Name	Nation	Starting Number	Total Segment Score	Total Element Score	Total Program Component Score (factored)	Total Deductions
17	Name SURNAME	GER	15	107.38	50.06	57.32	0.00

#	Executed Elements	Info	Base Value	GOE	J1	J2	J3	J4	J5	J6	J7	J8	J9	Ref Scores of Panel
1	3F+2T		6.60	0.76	0	2	1	1	2	2	1	1	2	7.36
2	3T+2T		5.50	-0.12	0	0	0	-1	-1	0	0	-1	1	5.38
3	2A		3.30	0.71	2	3	2	3	2	1	1	2	3	4.01
4	3S+1T+2Lo		6.40	0.00	0	0	0	0	0	0	0	0	1	6.40
5	3F<	<	3.98	-1.88	-5	-5	-5	-5	-5	-5	-4	-4	-4	2.10
6	FCSp4		3.20	0.55	2	3	2	2	1	1	1	2	2	3.75
7	CCoSp4		3.50	0.50	2	2	2	1	1	0	1	1	2	4.00
8	3Lo<<	<<	1.87 X	-0.56	-4	-3	-4	-3	-4	-3	-3	-3	-3	1.31
9	3S		4.73 X	-0.43	-1	-1	-1	-1	-1	-1	-1	-1	-1	4.30
10	StSq4		3.90	0.72	2	3	2	2	2	0	1	2	2	4.62
11	ChSq1		3.00	0.71	1	2	1	2	2	1	1	1	2	3.71
12	LSp4		2.70	0.42	1	2	3	3	1	0	1	1	2	3.12
48.68														
Program Components		Factor												Ref Scores of Panel
Skating Skills		1.60		7.50 7.25 7.00 7.50 7.50 6.75 6.75 7.00 7.25										7.18
Transitions		1.60		7.25 7.25 7.00 7.00 7.25 6.25 6.50 6.75 7.25										7.00
Performance		1.60		7.50 7.50 7.25 7.25 7.25 6.75 6.50 7.00 7.50										7.21
Composition		1.60		7.25 7.50 7.25 7.25 7.75 6.50 6.75 6.75 7.50										7.18
Interpretation of the Music		1.60		7.25 7.50 7.50 7.25 7.50 6.75 6.50 7.25 7.25										7.25
Judges Total Program Components Score (factored)														57.32
Deductions:														0.00

<Under-rotated jump <<Downgraded jump X Credit highlight distribution, base value multiplied by 1.1

Figure 1. Judges' protocol – Free Skating (Single Women)

- Mark for elements execution
 - Abbreviated names of the elements are recorded in the column Executed Elements (1).
 - In the Info column (2), special characters are indicated, giving information about the execution of the element.

- Base Value (3) is the calculated value of a standard performed element according to the table. A completed jump element in the second half of the program (in Short Program – 1 jump element, in Free Skating – 3 jump elements) has a higher value of 10%, and these elements are marked with an “x”.
 - GOE (4) – Grade of Execution (5) score increases determined by judges, with some judges’ scores being rejected. The increase is taken from the table for the most difficult jump of the combination without any coefficients.
 - J1 ... J9 (5) – the GOE scores given by the judges.
 - Scores of Panel (6) – the final value of the element, which is equal to the sum of columns 3 and 4.
 - Total Program Component Score (7): the judges’ ratings from 0 to 10 are indicated. The *Factor* column contains the weights of the components.
 - Deductions (8): the penalties. In the example figure: there are no penalties.
 - Total Segment Score for the program (9):
 - Total Element Score – the overall score for the elements.
 - Total Component Score – the total score for the components of the program (multiplied by the relevant coefficients).
 - Deductions – penalties (fall -1, late start -1, etc.).
 - Total Segment Score – the total score is the sum of the other three.
- In sports with a qualitative definition of a sports result, in the presence of a subjective factor, the result of sports achievements is carried out mainly by experts, using mathematical methods and a number of other methods available to the coach: historical analogy and intuitive prediction (Absalyamov, 2011).

The evaluation of competitive performances in sports with complex coordination of movements is filled with great difficulties. They are due to a number of reasons:

- the impossibility of an objective quantitative assessment of sports achievements;
- the complexity of evaluating the quality criteria of the program (Absalyamova, 2016).

In the process of evaluating the performance of figure skaters, two panels of judges take part. These are a technical panel, which consists of three judges, and decisions are made by a majority vote: a technical controller and two technical specialists. Their task is to determine and call the elements presented by the competitors, to determine and call the levels of elements, and also to fix violations during their execution – downgraded and underrotated jumps, falls, execution of jumps from the wrong edge, and others (Prodan, 2019). The quality of the performance of the elements and the general presentation of the programs are evaluated by the panel of Judges. Judges for major competitions are usually 9 but can also be fewer (minimum 5). The judges from the Panel do not influence the base score of the complexity of the element, nor on whether to respect the element in principle or not, their task is to evaluate the quality of execution of each element with points from -5 to +5. Each judge independently evaluates each element and program component. In the evaluation process, judges must consider the criteria given in the special tables for each type of element (jumps, spins, step sequences) (Sinigina, 2019). The lowest and highest mark for each element is dropped, and the total score for technical elements is the sum of their average values.

The Grade of Execution (GOE) evaluation for each technical element has clear guidelines from the ISU Communication; it ranges from a “base value” of 0 to a highest +5 and a lowest –

-5. Before the 2018/2019 season, the valuation of elements ranged from -3 to +3, with a base value of 0. The changes were introduced to al-

low more accurate grading points to be awarded in a sport that is becoming more technical (ISU judging system, 2022).

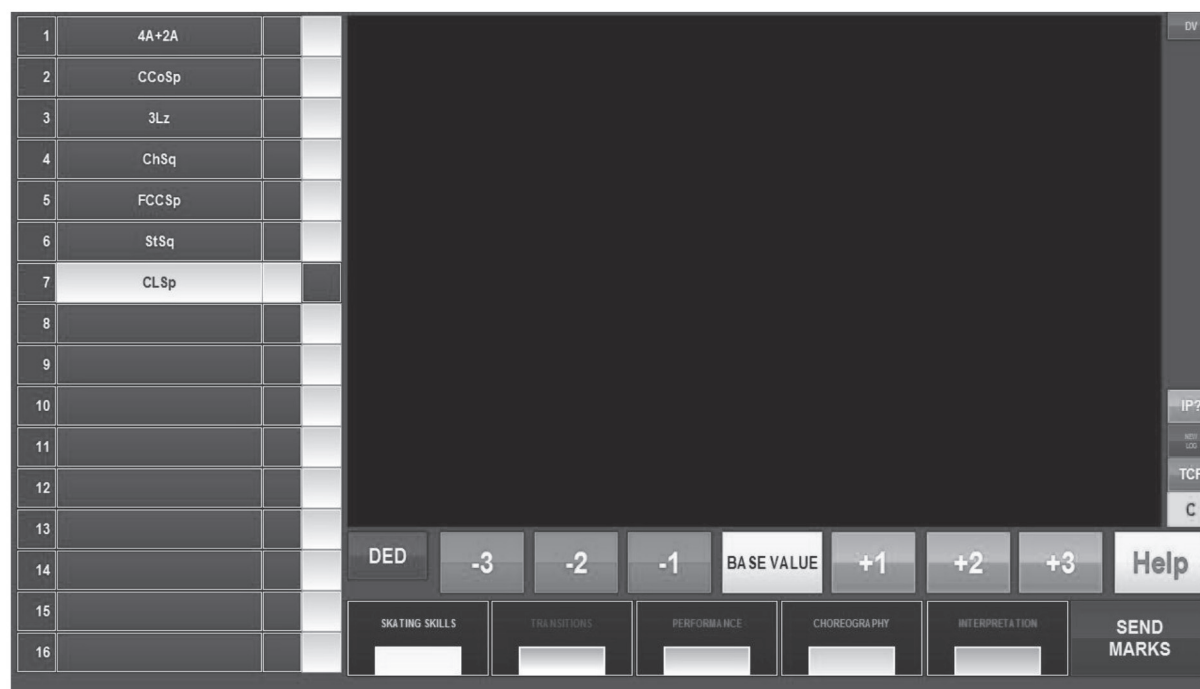


Figure 2. Judges' screen

On the judging screen (Figure 2), the judges see abbreviations of the performed elements and evaluate the quality of their execution. All elements are submitted by the Technical Panel, consisting of 3 people, and decisions are taken by the 2 of them. The judges see the jump elements with markings against them, such as “<” – under-rotated jump (the base value is reduced and is 70%), “<<” – a decreased jump by 180° or more (receives a value of the same jump, but with fewer revolutions, i.e., if a triple is executed, it will receive the value of a double). Also, signs of an incorrect edge are submitted when performing the jumps Flip and Lutz – “e” the wrong edge, “!” doubts about execution from the “clean” edge. When all these signs appear, the judges are obliged to reduce the mark! For elements that receive levels – Spins and Steps Sequences – judges do not see any symbols, i.e., they really evaluate what they see.

In all sports, the essential factor for progress in educational importance and aesthetic aspects is objective judging (Singina, 2020).

The purpose of the research was to analyze the judges' scores and dependencies between the final result and the separate segments of the evaluation when the judging system was introduced in 2004.

MATERIALS AND METHOD

The tasks of the study were:

- ◆ To give a general description of the evaluation in single skating according to the judging system introduced in 2004.
- ◆ To analyze the judges' marks.
- ◆ To analyze correlations between different segments of the judging results.
- ◆ To monitor the dynamics of individual segment dependencies of the judging evaluation.

The following *research methods* were used to solve the set tasks:

- ◆ Analysis and summarization of the scientific literature.
- ◆ Analysis of judging protocols from competitions.
- ◆ Pedagogical observations.
- ◆ Math statistical methods.

Organization of the research

In order to achieve the set goal, the judging protocols of the Winter Olympic Games in women’s figure skating were studied after the introduction of the ISU judging system in 2004. The judging protocols of five Winter Olympic Games (2006, 2010, 2014, 2018, and 2022) were analyzed from Short Program and Free Skating. All participants were examined – 30 in Short Programs and 24 in Free Skating.

Data analysis

The following results from the protocols

(Figure 1) were recorded in an Excel table for each competitor separately: The base Value of the elements (3), the Score of the Panel of judges for the elements (6), the Total Program Component Score (7) and the Total Segment Score (9).

To analyze the judges’ values, we used mathematical-statistical methods: descriptive statistics and correlation analysis with the statistical software package IBM SPSS Statistics 22 and MS Office 2018.

RESULTS AND DISCUSSION

The descriptive statistics of the judges’ marks for the 2006, 2010, 2014, 2018, and 2022 Winter Olympics (Tables 1 and 2) give us low values of the coefficients of variation, skewness, and kurtosis. The coefficient of variation of all indicators is up to 22%, which is an indicator of an approximately homogeneous sample and a normal distribution of data from the sample in question.

Table 1. Descriptive Statistics – Short Program Women

Years	Judges Score	Min	Max	Range	Mean	S	V%	As	Ex
2006	Base Value	20.80	32.50	11.70	27.25	3.18	11.69	-0.32	-0.63
	Scores of Panel	19.06	36.21	17.15	27.05	5.27	19.47	0.14	-1.01
	Total Program Component Score	17.88	31.40	13.52	23.70	3.90	16.47	0.36	-0.87
	Total Segment Score	38.44	66.73	28.29	50.57	8.70	17.19	0.34	-0.85
2010	Base Value	17.10	34.90	17.80	28.83	4.06	14.08	-0.84	1.03
	Scores of Panel	16.78	44.70	27.92	30.86	6.10	19.77	-0.03	0.36
	Total Program Component Score	19.28	33.80	14.52	24.90	4.23	17.01	0.42	-0.89
	Total Segment Score	36.10	78.50	42.40	55.65	10.06	18.08	0.23	-0.21
2014	Base Value	20.93	32.04	11.11	27.03	2.90	10.74	-0.20	-0.77
	Scores of Panel	18.93	39.09	20.16	28.90	4.98	17.24	0.40	-0.06
	Total Program Component Score	21.36	36.63	15.27	27.44	4.75	17.31	0.54	-0.98
	Total Segment Score	40.37	74.92	34.55	56.24	8.80	15.65	0.71	0.05
2018	Base Value	20.93	36.41	15.48	29.38	3.32	11.30	-0.06	0.29
	Scores of Panel	21.29	45.30	24.01	32.02	5.99	18.70	0.60	-0.40
	Total Program Component Score	22.93	38.42	15.49	29.21	4.69	16.05	0.69	-0.68
	Total Segment Score	44.40	82.92	38.52	60.94	10.51	17.24	0.62	-0.57
2022	Base Value	22.92	37.71	14.79	30.42	3.48	11.45	-0.19	-0.04
	Scores of Panel	22.78	44.51	21.73	33.11	5.49	16.58	0.24	-0.19
	Total Program Component Score	25.64	37.65	12.01	30.87	3.32	10.74	0.53	-0.64
	Total Segment Score	48.68	82.16	33.48	63.74	8.54	13.41	0.46	-0.08

Table 2. *Descriptive Statistics – Free Skating Women*

Years	Judges Score	Min	Max	Range	Mean	S	V	As	Ex
2006	Base Value	31.30	57.50	26.20	47.00	7.30	15.54	-0.32	-0.85
	Scores of Panel	26.77	62.32	35.55	45.43	8.73	19.21	-0.15	-0.61
	Total Program Component Score	36.80	63.00	26.20	49.05	7.83	15.95	0.31	-0.85
	Total Segment Score	65.04	125.32	60.28	94.11	15.37	16.33	0.20	-0.61
2010	Base Value	40.05	60.90	20.85	49.62	7.01	14.13	-0.08	-1.53
	Scores of Panel	34.84	78.30	43.46	52.33	11.18	21.37	0.33	-0.55
	Total Program Component Score	40.80	71.76	30.96	53.72	8.91	16.58	0.28	-0.73
	Total Segment Score	78.80	150.06	71.26	105.63	19.34	18.31	0.51	-0.62
2014	Base Value	33.78	66.34	32.56	52.43	7.86	15.00	-0.58	-0.03
	Scores of Panel	30.39	75.54	45.15	55.27	12.07	21.84	-0.16	-0.76
	Total Program Component Score	43.61	74.50	30.89	57.98	10.31	17.79	0.25	-1.31
	Total Segment Score	75.20	149.95	74.75	112.67	21.99	19.52	0.13	-1.21
2018	Base Value	43.33	66.01	22.68	56.04	5.66	10.10	-0.32	-0.40
	Scores of Panel	38.39	81.62	43.23	60.56	11.13	18.38	0.13	-0.47
	Total Program Component Score	50.06	77.47	27.41	61.33	8.83	14.39	0.51	-0.96
	Total Segment Score	88.44	156.65	68.21	121.40	19.38	15.96	0.39	-0.74
2022	Base Value	48.24	95.39	47.15	61.21	10.34	16.90	1.92	4.50
	Scores of Panel	47.87	106.16	58.29	65.97	14.51	21.99	1.34	2.19
	Total Program Component Score	51.26	75.26	24.00	63.90	6.36	9.96	0.03	-0.84
	Total Segment Score	100.15	177.13	76.98	129.25	20.17	15.60	0.92	0.68

The minimum base values of the elements in the Short Programs of the figure skaters did not differ significantly at the studied Olympic Games. They ranged between 17.10 and 22.92, i.e., the difference was 5.82, graphically represented in Figure 3. Almost the same difference of 5.67 was observed in the maximum base values – they were between 32.04 (2014) and 37.71 (2022). If we look at the judges' scores for the elements, the difference between the minimum values over the years was not very significant – between 16.78 in the 2010 Olympics and 22.78 in 2022. It is noticed that the minimum value for the technical elements of the judging panel was lower than the minimum base value in the short programs, which can be explained by errors made in elements by the last ranked figure

skaters and lower levels of Spins and Steps. The maximum base value ranged between 36.21 – in 2006 and a high of 45.30 in 2018, when the evaluation was still -3 to +3.

The situation is slightly different in Free Skating. 2006 Olympics – the minimum base value for the elements was 31.30, the maximum was 57.50, and the range was 26.20. 2022 Olympic – the minimum base value for the elements was 48.24, and the maximum was 95.39. The range of these values was 47.15 points. The maximum values of the judging panel in the Free Skating programs differed significantly in 2014 – it was 17.4, compared to 2006, where there were only 4.82 points. In the 2018 Olympic Games, the difference in maximum values of the judging panel score and the base value was 10.77.

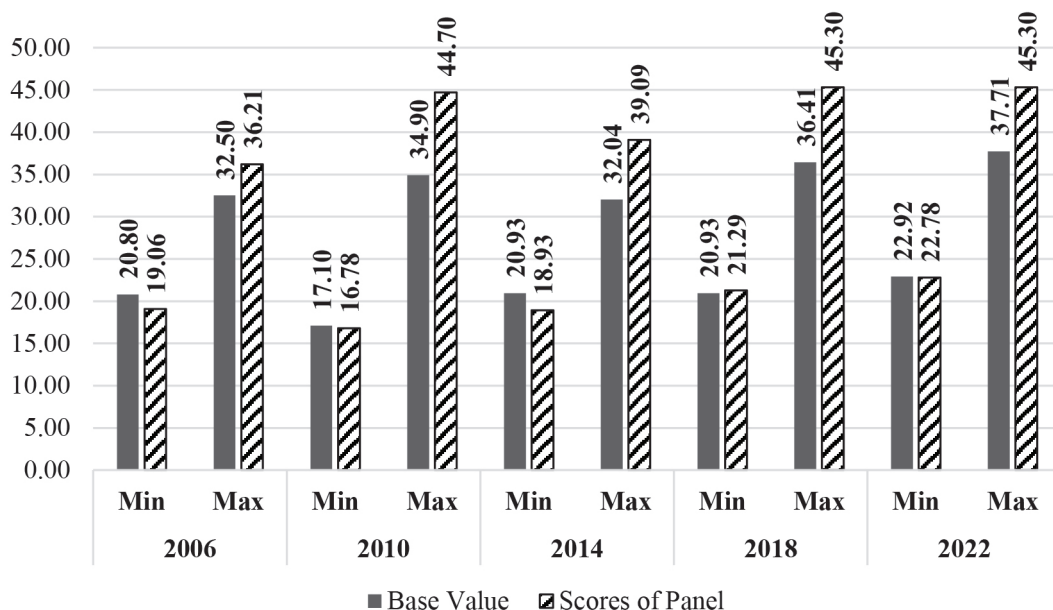


Figure 3. Dynamics of the Min and Max Basic Values and Judges Score in Short Program

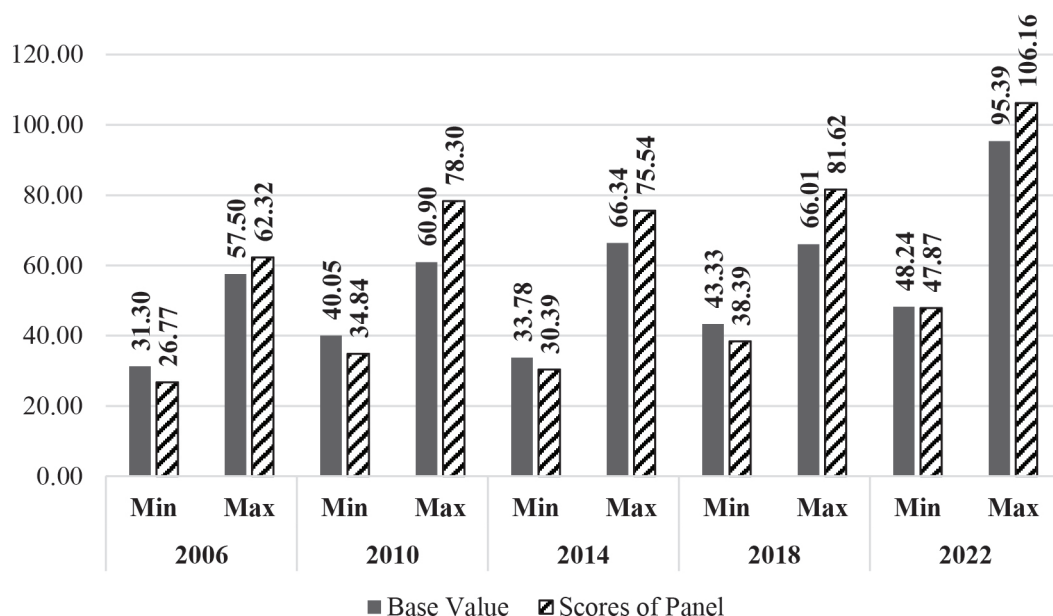


Figure 4. Dynamics of the Min and Max Basic Values and Judges Score in Free Skating

Tables 3 and 4 present the average judging values in the different segments (Basic Values, Scores of the Judging Panel, Total Program Component Score) and the average Total Segment Score in the Short Program and Free Skating programs of the figure skaters. In the Short Programs, there was no significant increase in the mean values of the evaluations:

the base value increased by 3.39 points, the scores of the panel estimated by 6.06, and grades for the program component scored – 7.17. The biggest jump of 5.17 points in the free programs was between the last Olympics in 2022 and the one in 2018. This fact can be explained by the executions of complex quadruple jumps in 2022 by the skaters, despite

the fact that the base value of the jumps was reduced. In the judges' evaluations, the biggest difference of 6.9 points was observed between the 2006 and 2010 Olympic Games, and not in

the last 2022 Olympic Games, where the elements were now scored from -5 to +5. The mean value for program components scores increased by 14.85 in Free Skating programs.

Table 3. *Average Judges' Scores in Short Program*

	Base Value	Scores of Panel	Total Program Component Score	Total Segment Score
2006	27.25	27.05	23.70	50.57
2010	28.83	30.86	24.90	55.65
2014	27.03	28.90	27.44	56.24
2018	29.38	32.02	29.21	60.94
2022	30.42	33.11	30.87	63.74

Table 4. *Average Judges' Scores in Free Skating*

	Base Value	Scores of Panel	Total Program Component Score	Total Segment Score
2006	47.00	45.43	49.05	94.11
2010	49.62	52.33	53.72	105.63
2014	52.43	55.27	57.98	112.67
2018	56.04	60.56	61.33	121.40
2022	61.21	65.97	63.90	129.25

Correlation analysis describes the strength, direction, and statistical significance of relationships between variables. The statistical indicators that carry this information are called correlation coefficients (Gigova, 2014). Before we proceeded with the correlation analysis, a scatter plot was constructed to establish the shape of the scatter. The studied variables were more than two, and a matrix of scatterplots was constructed. Because the relationship is ordinary in type, linear in shape, and the variables are quantitative, the used coefficient is Pearson (r).

Tables 5 and 6 present the Pearson coefficients of the dependencies between the individual judging segments and the final result in the short and free programs of the Olympic Games from 2006 to 2022. The dependence of the final result was very strong on the judges' values of the elements – r above 0.9 in both programs. The final result was strongly dependent – r over 0.9 on the program components

of all the Olympic Games in both programs; only in 2014, the dependence on the program components was $r = .891$ in the short programs of the figure skaters and in 2022 in the free programs it was $r = .868$. The value of the panel of judges for elements was in a very strong dependence, i.e., r was over 0.9 in the volley programs of all races we examined. In the short programs, it was strongly dependent in 2006 and 2010. In 2014, 2018, and 2022, a slight decrease in this dependence was observed in the short programs of figure skaters – from $r = .898$ in 2014 to $r = .857$ in 2022. The components of a program were significantly dependent on the base values of the elements – r was between .587 and .776. Only in 2014 did this dependence fall to a moderate $r = .411$ in the short programs. The influence of the base values of the elements on the final result was significant – between .736 and .901.

Table 5. *Correlations of the Scores in Short Program*

Year	BV / SP	BV / TPCS	BV / TSS	SP / TPCS	SP / TSS	TPCS / TSS
2006	.938**	.604**	.848**	.747**	.956**	.907**
2010	.929**	.718**	.880**	.848**	.976**	.942**
2014	.898**	.411*	.736**	.637**	.917**	.891**
2018	.876**	.673**	.795**	.881**	.976**	.960**
2022	.857**	.641**	.797**	.846**	.980**	.933**

BV – Base Value, SP – Scores of Panel, TPCS – Total Program Component Score, TSS – Total Segment Score.

Table 6. *Correlations of the Scores in Free Skating*

Year	BV / SP	BV / TPCS	BV / TSS	SP / TPCS	SP / TSS	TPCS / TSS
2006	.959**	.669**	.891**	.704**	.938**	.906**
2010	.936**	.685**	.880**	.774**	.960**	.920**
2014	.961**	.776**	.901**	.890**	.976**	.967**
2018	.949**	.662**	.867**	.794**	.964**	.925**
2022	.916**	.587**	.855**	.753**	.979**	.868**

BV – Base Value, SP – Scores of Panel, TPCS – Total Program Component Score, TSS – Total Segment Score.

Figures 5, 6, and 7 present the dynamics of some dependencies between the individual segments of the evaluation in short programs. It is clearly visible in Figure 5 that there was a decrease in the dependence of the score of

the judging panel for the elements on the base value of the elements – from very strong $r = .938$ in the 2006 year and $r = .929$ in the year 2010 to a strong in years 2014, 2018 and 2022, respectively $r = .898$; $.876$; $.857$.

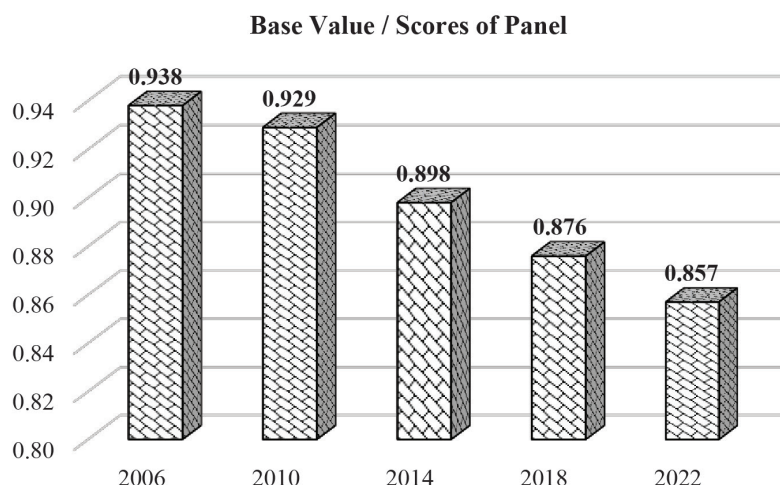


Figure 5. *Correlation's dynamics between Base Value and Scores of the Panel in Short Program*

In Figures 6 and 7, we see the graphics of the dynamics of the dependencies of the total segment score on the base values and the score of the panel for the elements. It is clearly seen that they moved almost equally over the years. The lowest correlation coefficient was in

the year 2014. Figure 7 clearly shows $r = .980$ – at the 2022 Olympic Games, it was close to 1; in other words, the total segment score approached the functional dependence on the score of the judges' panel for the technical elements.

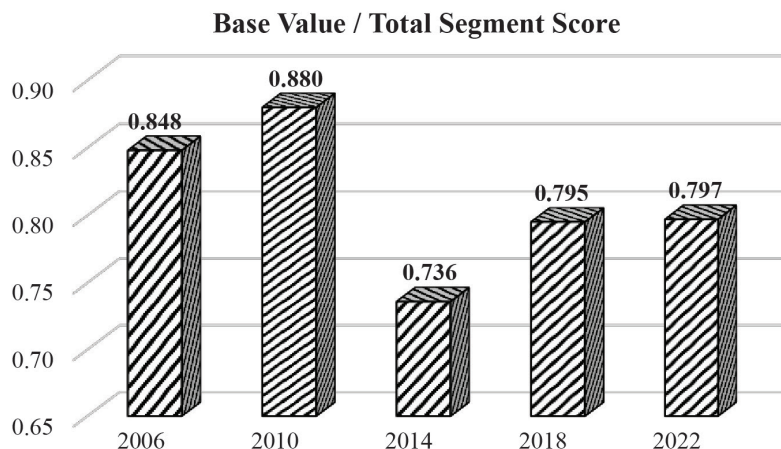


Figure 6. Correlation's dynamics between Base Value and Total Segment Score in Short Program

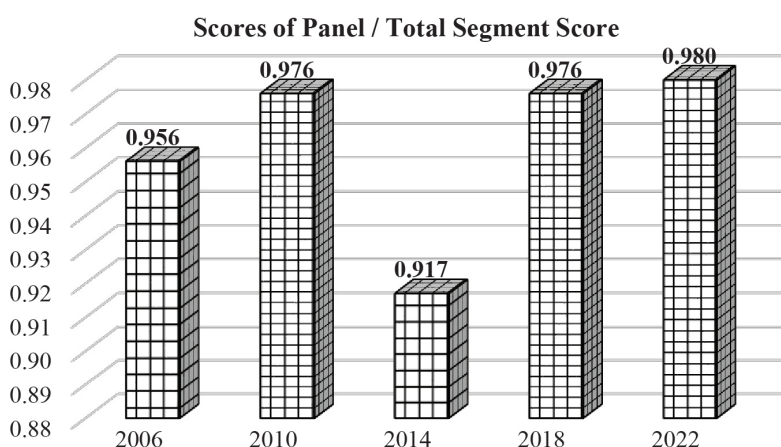


Figure 7. Correlation's dynamics between Scores of the Panel and Total Segment Score in Short Program

The correlation dependences in the Free Skating of the female skaters are depicted in Figures 8, 9, and 10, where it is clearly seen that the situation is different than in the Short Programs. The dependence of the mean values of

the judges' evaluations for the elements on the base value was the lowest in 2022, $r = .916$, and the highest in 2014 – $r = .961$. In the same way, the dependence of the final result on the base value in 2022 – $r = .855$, but in 2014 $r = .901$.

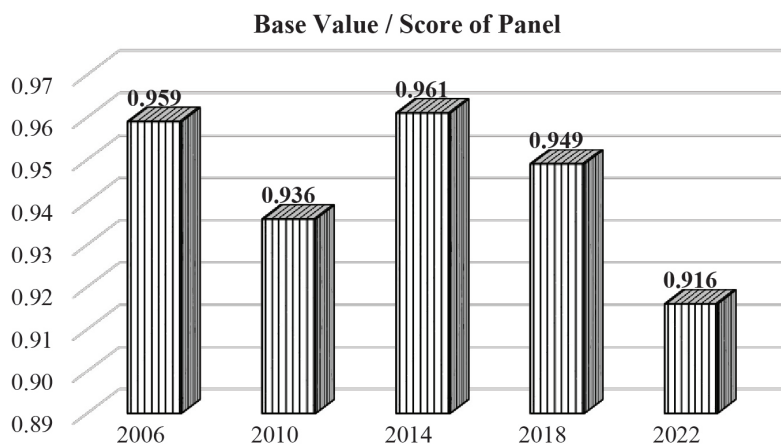


Figure 8. Correlation's dynamics between Base Value and Scores of the Panel in Free Skating

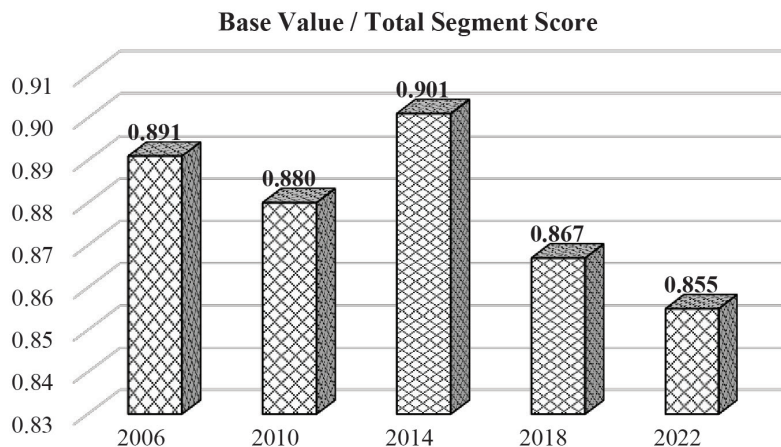


Figure 9. Correlation's dynamics between Base Value and Total Segment Score in Free Skating

In Figure 10, we see that in the 2022 Olympic Games, the final result was strongly dependent on the evaluations of the judging panel for the technical elements and was higher than in

2018. This dependence was the lowest at the first Olympic Games in 2006, immediately after the introduction of the new judging system – $r = .938$.

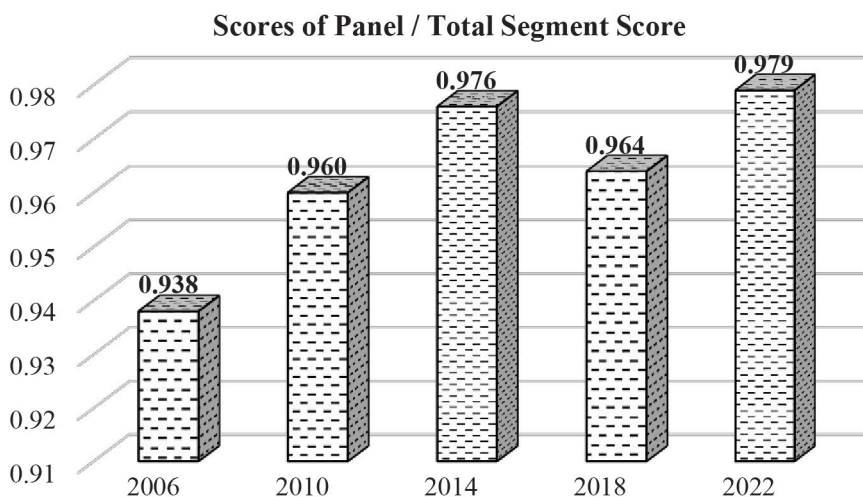


Figure 10. Correlation dynamics between Scores of the Panel and Total Segment Score in Free Skating

CONCLUSION

The conducted analysis of the judges' evaluations of the Olympic Games allows us to draw the following conclusions. After the introduction of the ISU judging system, the evaluation of the programs has become much more precise, where each element is evaluated separately. The evaluation gives the coaches a clear idea of the mistakes made and what exactly needs to be worked on to get better re-

sults, both technically and for the artistic part of the programs. The minimum base values of the elements and the judges' panel values were not significantly different. The maximum values in both programs significantly increased, especially in 2022, which can be explained by the best-ranked athletes' performance of much more complex quadruple jumps.

The correlation analysis shows a very strong dependence between the individual seg-

ments of the evaluation and the total segment score, which is normal. The dynamics of these dependencies at the first Olympic Games and the subsequent one are interesting. In both programs – Short Program and Free Skating, the dependence of the judges' score for the technical elements on the base value score of the elements gradually decreased, which is an indicator of more objective judging. The dependence of the total segment score on the base value of the elements in the short programs from 2014 to 2022 increased, while in the free skating, it decreased. Judges' evaluations of technical elements have increased their dependence on the final result in both the short programs and the free skating in the recent Olympic Games. Expanding the scale for evaluating technical elements from -5 to +5, according to the analyses carried out, leads to a greater weighting of the judging panel, which consists of 9 judges, rather than the technical panel, consisting of 3 specialists. This could ultimately lead to more objective judging in figure skating.

REFERENCES

Absalyamova, I. V. (2016). Ob'yektivnyye i sub'yektivnyye faktory sudeystva v figurnom katanii na kon'kakh. Materialy XVI Vserossiyskoy nauchno-prakticheskoy konferentsii. Moskva, Str. 5. // Абсалямова, И. В. (2016). Объективные и субъективные факторы суждения в фигурном катании на коньках. Материалы XVI Всероссийской научно-практической конференции. Москва, Стр. 5.

Absalyamova, I. V., Kuznetsova, L.V. (2011). *Kharakteristika sportivnykh tantsev na l'du i metodika ikh sudeystva: uchebnoye posobiye dlya studentov RGUFKSMiT, Moskva: RGUFKSMiT, 76 s.* // Абсалямова, И. В. (2011). *Характеристика спортивных танцев на льду и методика их суждения: учебное пособие для студентов РГУФКСМиТ, Москва: РГУФКСМиТ, 76 с.*

Chichkova, V. V., Inozemtseva, YE. S. (2018). Sistema sudeystva v figurnom katanii. *Strategiya formirovaniya zdorovogo obraza zhizni naseleniya sredstvami fizicheskoy kul'tury i sporta: tendentsii, traditsii i innovatsii: Materialy Mezhdunarodnoy na uchno-prakticheskoy konferentsii, posvyashchennoy pamyati professora V.N. Zuyeva, Tyumen', 17–18 oktyabrya 2018 goda.* – Tyumen': ООО „Вектор Бук“, 2018. – pp. 320-323. – EDN YNCMCT. // Чичкова, В. В., Иноземцева, Е. С. (2018). Система суждения в фигурном катании. *Стратегия формирования здорового образа жизни населения средствами физической культуры и спорта: тенденции, традиции и инновации: Материалы Международной научно-практической конференции, посвященной памяти профессора В.Н. Зуева, Тюмень, 17–18 октября 2018 года.* – Тюмень: ООО „Вектор Бук“, 2018. – С. 320-323. – EDN YNCMCT.

Gigova, V. (2014). *Statisticheski metodi sus SPSS Statistics 19*, Sofia. // Гигова, В. (2014). *Статистически методи със SPSS Statistics 19*, София.

International Skating Union, Special Regulations & Technical Rules. Single & Pair Skating and Ice Dance, (2018), pp. 82-84.

Prodan, A. S. (2019). Sudeyskaya sistema ISU. *Materialy VII Vserossiyskoy nauchno-prakticheskoy konferentsii molodykh uchenykh, aspirantov, magistrantov i studentov s mezhdunarodnym uchastiyem.* Izd.: Povolzhskaya gosudarstvennaya akademiya fizicheskoy kul'tury, sporta i turizma (Kazan'). // Продан, А. С. (2019). Судейская система ISU. Материалы VII Всероссийской научно-практической конференции молодых ученых, аспирантов, магистрантов и студентов с международным участием. Изд.: Поволжская государственная академия физической культуры, спорта и туризма (Казань).

- Singina, N. F. (2019). Evolyutsiya sudeystva v figurnom katanii. *Uchenyye zapiski universiteta imeni P. F. Lesgafta*. – 2019. – № 5 (str. 171). // Сингина, Н. Ф. (2019). Эволюция судейства в фигурном катании. *Ученые записки университета имени П. Ф. Лесгафта*. – 2019. – № 5 (стр. 171).
- Singina, N. F. (2020). Analiz ob'yektivnosti sudeystva v tantseval'nom sporte statisticheskimi metodami. *Sovremennyye problemy nauki i obrazovaniya*. – 2020. – № 1. // Сингина, Н. Ф. (2020). Анализ объективности судейства в танцевальном спорте статистическими методами. *Современные проблемы науки и образования*. – 2020. – № 1.
- Wikimedia Foundation. (2022, August 11). *6.0 system*. Wikipedia. Retrieved November 02, 2022, from https://en.wikipedia.org/wiki/6.0_system
- Wikimedia Foundation. (2022, August 18). *ISU judging system*. Wikipedia. Retrieved November 02, 2022, from https://en.wikipedia.org/wiki/ISU_Judging_System
- Zhdanova, A. A. (2019). Istoriya sistemy otsenivaniya v odinochnom figurnom katanii. *Tezisy dokladov XLVI nauchnoy konferentsii studentov i molodykh uchennykh vuzov yuzhnogo federal'nogo okruga, Krasnodar*. // Жданова, А. А. (2019). История системы оценивания в одиночном фигурном катании. *Тезисы докладов XLVI научной конференции студентов и молодых ученых южного федерального округа, Краснодар*.

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