

## GAME QUALITIES OF WOMEN BASKETBALL PLAYERS (AGILITY, RELIABILITY AND EFFICIENCY) IN LEAGUE GAMES

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### **Abstract**

*Agility, reliability and realization efficiency of the leading components of the competitive game of the analyzed women basketball players were evaluated by the analysis of 5 video-recorded games each of the six analyzed the First women's basketball league clubs in Bosnia and Herzegovina. The agility results, reliability and realization efficiency, sample by defined leading components were given individually and as a sum for a certain woman basketball player and each analyzed team. Dominant characteristic of the women basketball players classified by specific separated groups are related to: efficiency, reliability and agility jump shot for three points (SEFUU, SEFSUP AND SEFSUS), reliability in doing the free throw (SEFPENS), agility and block reliability and throwing the ball in the basket (doing the hoops) (SEFBLPP, SEFBLPS), and reliability of jump shot from different positions.*

**Key words:** *basketball, agility, reliability and efficiency*

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### **Introduction**

From our point of view, the valorizations of a basketball game quality are based on the assumptions that a model aimed actual and prognostic valorization of competitive individual and team efficiency in a technical-tactic action of the women basketball players is conditioned by complementarity's principal, level and the character of basic and situational-motor coordination readiness.

However, this methodological work is directed on reflection of game quality individual and team technical-tactic action of some interviewed women basketball players by level and character of dominating characteristic and their basic situational-motor coordination readiness. The comparative analysis of their complementary condition was done on the sample of representative team of the six analyzed in the First women's basketball league clubs in Bosnia and Herzegovina.

Primary goal of the research is projecting methodology science plan of model aimed valorization of competitive individual and team efficiency technical-tactic action of basketball players conditioned by level and characteristic of basic and situational-motor coordination readiness, expressed through agility, reliability and realization efficiency of the leading components in a competitive game.

### **Methods**

#### *Sample of the subjects*

Inquiries have been done in 15 First league championship Bosnia and Herzegovina for women basketball games in 2004/ 2005. There are six most quality basketball clubs in total in the club championship the First women's basketball league clubs in Bosnia and Herzegovina: KŽK Željeznica – Sarajevo, KŽK Jedinstvo – Tuzla, KŽK Biss Tours Čelik – Zenica, KŽK Banovići, KŽK Zrinjski – Mostar, KŽK Brčko – Brčko Distrikt. Number of tested women basketball players is 43.

#### *Variable sample*

Composition variables are formed based on: a) successfully done moving action considering the time spent playing, b) efficiency quality, successfully done moving action considering the number of attempts made, c) reliability quality and number of moving action done considering the time spent playing, d) agility quality. Due to this some variables have been made: Summing the individual variables of situational game components made on each of the five analyzed games. Due to that sum, variables have been made:

\* SSSUT = SKSUTU1 + SKSUTU 2 + SKSUTU 3 + SKSUTU 4 + SKSUTU 5 = sum of successful jump shots in five different games;

\* SSSpT = SKSUTp1 + SKSUTp2 + SKSUTp3 + SKSUTp4 + SKSUTp5 = sum of attempted jump shots in five different games;

\* SVPLU = SVPLU1 + SVPLU2 + SVPLU3 + SVPLU4 + SVPLU5 = sum of successful sprint leading and placing the ball on the opposite side of the court in five different games;

\* SVPLP = SVPLp1 + SVPLp2 + SVPLp3 + SVPLp4 + SVPLp5 = sum of sprint attempt, leading and placing the ball on the opposite side of the court in five different games;

\* SPENU = PENU1 + PENU2 + PENU3 + PENU4 + PENU5 = sum of successfully made pens in five different games;

\* SPENp = PENp1 + PENp2 + PENp3 + PENp4 + PENp5 = sum of penal attempts made in five different games;

\* SBLPLU = BLPLU1 + BLPLU2 + BLPLU3 + BLPLU4 + BLPLU5 = sum of successfully made passing and catching the ball in front of the wall (30s) with pivot to both sides in five different games;

\* SBLPLp = BLPLp1 + BLPLp2 + BLPLp3 + BLPLp4 + BLPLp5 = sum of attempts made in passing and catching the ball in front of the wall (30s) with pivot to both sides in five different games;

\* S5SUT = S5SUTU1 + S5SUTU2 + S5SUTU3 + S5SUTU4 + S5SUTU5 = sum of successfully made jump shots from five positions;

\* S5SUTp = S5SUTp1 + S5SUTp2 + S5SUTp3 + S5SUTp4 + S5SUTp5 = sum of attempts made in jump shots from five positions;

\* StIGRE = tIGRE1 + tIGRE2 + tIGRE3 + tIGRE4 + tIGRE5 = sum of time spent in five different games;

\* IGRE (games).

## Results

Our approach to the objective valorization of the basketball game quality and interviewed women basketball players are based on the assumptions that model aimed and prognostic valorization of competitive efficiency of individual and technical-tactic action of basketball players is conditioned, due to the complementarity's principle, by level and the character basic and situational-motor coordination readiness.

General goal is overcoming available levels of undefined basketball game quality care for finding subconscious eureka solutions of situations in the game as a result of the competitive players' experience. Heterogeneity of team basketball club is showed by character of separated taxonomic significant variables of analyzed components in a game: with agility and reliability of moving actions blocking and throwing the ball in basket (doing the hoops) (SEFBLPP and SEFBLPS), agility and reliability of jump shot from different positions (SEFS5SU and SEFS5SS).

Table 1. Multiple analysis of variance in efficiency, agility and reliability moving action women basketball players of the First women's league of B&H according to the club belonging

### EFFECT .. KLUB

Multivariate Tests of Significance (S = 5, M = 4 1/2, N = 10 1/2)

Test Name	Value	F-Hyp.	DF	Error DF	Sig.-F
Pillais	2.03	1.23	75	135.00	.15
Hotellings	9.45	2.70	75	107.00	.00
Wilks	.03	1.72	75	114.38	.00
Roys	.88				

Univariate F-tests with (5,37) D.F.

Variable	SS-Hyp	SS Error	MS	MS Error	F	Sig.
SEFSUU	14.61	199.10	2.92	5.38	.54	.74
SEFSUP	69.68	1263.04	13.93	34.14	.41	.84
SEFSUS	4539.92	31843.76	907.98	860.64	1.06	.40
SEFVPLU	22.60	84.74	4.52	2.29	1.97	.11
SEFVPLP	56.47	171.51	11.29	4.64	2.44	.05
SEFVPLS	2282.98	7393.57	456.60	199.83	2.28	.07
SEFPENU	50.88	984.37	10.18	26.60	.38	.86
SEFPENP	60.74	1527.98	12.15	41.30	.29	.91
SEFPENS	1155.31	7442.69	231.06	201.15	1.15	.35
SEFBLPU	9.18	27.87	1.84	.75	2.44	.05
SEFBLPP	22.96	38.38	4.59	1.04	4.43	.00
SEFBLPS	3554.91	5549.78	710.98	149.99	4.74	.00
SEFS5SU	138.17	336.27	27.63	9.09	3.04	.02
SEFS5SP	296.34	1419.74	59.27	38.37	1.54	.20
SEFS5SS	1276.18	3552.67	255.24	96.02	2.66	.04

Structure of quality sides' technical-tactical actions of basketball players in competition conditions, considering their position in the game that was given through a multiple analysis of variance in agility, efficiency and reliability of their moving actions based on five video recorded games (table 2).

Table 2. Multiple analysis of variance in efficiency, agility and reliability of moving actions of women basketball players of the First women's league of Bosnia and Herzegovina according to the position in the game

### EFFECT .. MJTIM

Multivariate Tests of Significance (S = 4, M = 5, N = 11)

Test Name	Value	F-Hyp.	DF	Error DF	Sig.-F
Pillais	2.01	1.83	60	108.00	.00
Hotellings	5.62	2.11	60	90.00	.00
Wilks	.04	1.97	60	95.91	.00
Roys	.76				

Univariate F-tests with (4,38) D.F.

Variable	SS-Hyp	SS Error	MS	MS Error	F	Sig.
SEFSUU	26.12	187.59	6.53	4.94	1.32	.28
SEFSUP	288.11	1044.61	72.03	27.49	2.62	.05
SEFSUS	12018.15	24365.53	3004.54	641.20	4.69	.00
SEFVPLU	45.91	61.44	11.48	1.62	7.10	.00
SEFVPLP	100.64	127.35	25.16	3.35	7.51	.00
SEFVPLS	2042.70	7633.86	510.67	200.89	2.54	.06
SEFPENU	85.35	949.89	21.34	25.00	.85	.50
SEFPENP	171.88	1416.84	42.97	37.29	1.15	.35
SEFPENS	170.29	8427.71	42.57	221.78	.19	.94
SEFBLPU	3.08	33.97	.77	.89	.86	.50
SEFBLPP	5.27	56.08	1.32	1.48	.89	.48
SEFBLPS	282.89	8821.79	70.72	232.15	.30	.87
SEFS5SU	74.42	400.02	18.61	10.53	1.77	.16
SEFS5SP	535.82	1180.26	133.96	31.06	4.31	.01
SEFS5SS	809.92	4018.93	202.48	105.76	1.91	.13

Table 3. Multiple analysis of variance in efficiency, agility and reliability of moving actions of women basketball players of the First women's league of Bosnia and Herzegovina with five analyzed video recorded games on the important level of five separated specific groups

**EFFECT .. TIPAS**

**Multivariate Tests** of Significance (S = 4, M = 5, N = 11)

Test Name	Value	F-Hyp.	DF	Error DF	Sig.-F
Pillais	2.87	4.56	60	108.00	.00
Hotellings	19.41	7.28	60	90.00	.00
Wilks	.00	5.79	60	95.91	.00
Roys	.92				

**Univariate F-tests** with (4,38) D.F.

Variable	SS-Hyp	SS Error	MS	MS Error	F	Sig.
SEFSUU	92.39	121.32	23.10	3.19	7.23	.00
SEFSUP	517.56	815.16	129.39	21.45	6.03	.00
SEFSUS	30269.14	6114.54	7567.28	160.91	47.02	.00
SEFVPLU	7.35	99.99	1.84	2.63	.70	.60
SEFVPLP	23.75	204.24	5.94	5.37	1.10	.37
SEFVPLS	1885.35	7791.21	471.34	205.03	2.30	.08
SEFPENU	233.68	801.56	58.42	21.09	2.77	.04
SEFPENP	155.38	1433.34	38.84	37.72	1.03	.40
SEFPENS	4571.10	4026.90	1142.77	105.97	10.78	.00
SEFBLPU	3.71	33.34	.93	.88	1.06	.39
SEFBLPP	16.08	45.26	4.02	1.19	3.38	.02
SEFBLPS	4584.33	4520.36	1146.08	118.96	9.63	.00
SEFS5SU	105.23	369.21	26.31	9.72	2.71	.04
SEFS5SP	321.89	1394.19	80.47	36.69	2.19	.09
SEFS5SS	1767.26	3061.59	441.81	80.57	5.48	.00

Dominant characteristics of basketball players put into specific separated groups are related to: efficiency, reliability and agility jump shots for three points (SEFSUU, SEFSUP and SEFSUS), reliability in doing the free throw (SEFPENS), agility and reliability of blocks and ball throw to basket (SEFBLPP and SEFBLPS) and reliability of jump shot from different positions.

Table 4. Multiple analysis of variance in game profile expert evaluation of the women basketball players and 5 games video records analyzed of First women's league of B&H according to the club belonging

**EFFECT .. KLUB6**

**Multivariate Tests** of Significance (S = 5, M = -1/2, N = 15 1/2)

Test Name	Value	F-Hyp.	DF	Error DF	Sig.-F
Pillais	1.94	4.69	25	185.00	.00
Hotellings	6.17	7.75	25	157.00	.00
Wilks	.04	6.73	25	124.09	.00
Roys	.77				

**Univariate F-tests** with (5,37) D. F.

Variable	SS-Hyp	SS Error	MS	MS Error	F	Sig.
OCPOZORG	29.95	19.17	5.99	.52	11.56	.00
OCPOZSUT	20.65	33.21	4.13	.90	4.60	.00
OCPOZDOD	13.12	29.86	2.62	.81	3.25	.02
OCPOZSKA	5.56	26.35	1.11	.71	1.56	.20
OCPOZBLO	9.26	37.39	1.85	1.01	1.83	.13

Taxonomic significant variable criteria of game profile expert evaluation of the women basketball players according which are separated by its profile and game quality are: 1) organizational ability level (OCPOZORG), (\*) 2) shot ability level (OCPOZSUT), 3) assistance level – passing (OCPOZDOD).

(organisational level = playmakers) (\*)

**Conclusion**

Basically, this paper has the methodological character. It is directed on observing and providing mutual conditions about competitive results, competitive action structure and individual level and character of dominant characteristics of actual basic and situational-motor coordination readiness of basketball players.

Comparative analysis of inter-actions training and competitive readiness has been spent on a sample of representative team of 6 clubs First women's basketball league of Bosnia and Herzegovina. The questionings were done in 15 championship games of Bosnia and Herzegovina for women. 43 out of 6 most quality women's basketball clubs were tested. 15 video recorded games have been published of the 6 clubs already named of the First women's basketball league of Bosnia and Herzegovina. According to these video records from the games mentioned we evidenced the variety and frequency usage of the game components of the basketball players (according to their positions in the team, kicks: with three points, with two points, from 5 different positions, free throw, shot under the basket).

Successful and unsuccessful actions of the basketball players in attack, as well as time spent playing were noted. Model, actual and prognostic valorization of competitive efficiency of individual and technical-tactic basketball players' actions are conditioned by level and character of basic and situational-motor coordination readiness. Game quality is accomplished by showing just how special personal individuality is. It is the integral individuality with its quality and quantity speciality and any kind of violence used will not lead to development or total realization of playing potential. One of the ways to make them free and develop the playing potentials of the basketball players is to use the structural analysis and constantly discover the individual leading factors of competitive readiness of the basketball players.

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## KVALITETE IGRE KOŠARKAŠICA (AGILNOST, POUZDANOST I UČINKOVITOST) NA LIGAŠKIM UTAKMICAMA

### Sažetak

*Agilnost, pouzdanost i učinkovitost realizacije vodećih komponenata natjecateljske igre analiziranih košarkašica procjenjivana je analizom video-zapisa pet utakmica svakog od šest analiziranih klubova Prve ženske košarkaške lige Bosne i Hercegovine. Rezultati o agilnosti, pouzdanosti i učinkovitosti realizacije, uzorkom definiranih vodećih komponenata natjecateljske igre, predočavani su pojedinačno i sumarno za konkretnu košarkašicu i pojedinačno i sumarno za svaku analiziranu momčad. Dominantne odlike košarkašica svrstanih po tipospecifičnim izdvojenim grupama odnose se na: učinkovitost, pouzdanost i agilnost skok šuteva za tri boda (SEFUU, SEFSUP i SEFSUS), pouzdanost u izvođenju slobodnih bacanja (SEFPENS), agilnost i pouzdanost blokada i polaganja lopte na koš (SEFBLPP, SEFBLPS), te pouzdanost skok šuta sa različitih pozicija.*

**Ključne riječi:** košarka, agilnost, pouzdanost, učinkovitost

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