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PERFORMANCE ANALYSIS OF PROFESSIONAL BASKETBALL LEAGUE PLAYERS

Agnesa Aulia Sutrisno*[1], Yudy Hendrayana[2], Nuryadi[3]

[1,2,3]Sekolah Pascasarjana, Universitas Pendidikan Indonesia, Indonesia

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ABSTRACT

The most successful teams are teams that can play efficiently and perform well. Performance is essential in sports, whether individual or group because all players with good performance will bring their team as winners. This study aimed to determine the performance of players who participated in the Indonesian Basketball League. The research method used is a descriptive correlation. The study was conducted on all teams participating in the 2017 Indonesian Basketball League. The instrument used to measure performance uses software from Fibalivestats. All data were processed using SPSS 20 for windows. The results of data processing show that the results of calculating the effectiveness of players who have excellent effectiveness from all games with a total of 182 from the Pelita Jaya team, the results of the calculation of effectiveness are based on positions which are divided into five positions, Point Guard positions total effectiveness 149 from the Jakarta Aspac team, Shotting Guard positions The total effectiveness of the Pelita Jaya team is 156, the Small Forward position has a total effectiveness of 176 from the Satria Muda team, the Power Forward position has total effectiveness of 116 from the Aspac Jakarta team. The Center position has total effectiveness of 182 from Pelita Jaya. The result of the highest team efficiency is the Pelita Jaya Jakarta team, with a total efficiency of 1218 and 1330 points. The results of this study show a significant relationship between player performance and team achievement.

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Keywords: Analysis, Performance, Professional League, Bolabasket, Statistics, efficiency.

INTRODUCTION

Basketball is one of the most popular sports in the world; fans of all ages feel that basketball is a fun, competitive, educational, entertaining, and healthy game. Individual skills such as shooting, passing, dribbling, and rebounding, as well as teamwork to attack or defend, are requirements for success in playing this sport (Li et al., 2021; Mclean et al., 2019; Nguyen et al., 2018). *Basketball* is a team game played by both boys and girls. In a basketball game, each team must try to put the ball into the opponent's basket by using their hands to score points and instead try to keep their basket so the opponent cannot score points. This basketball game is a complete team consisting of 12 players, five leading players, and seven reserve players.

Moreover, Vaquera et al., (2016) suggests the definition of basketball: Basketball is played by two teams with five players per team. The goal is to get a score by getting the ball into the basket and preventing the other team from doing the same (García et al., 2020; Jones et al., 2019; Li et al., 2021; Patel et al., 2019). The ball can be awarded only by hand passing or by dribbling it (batting, pushing, or tapping) several times on the floor

* **Correspondence Address**
E-mail: anesagnesa@gmail.com

without touching it with both hands simultaneously, and can shoot towards the opponent's basket (García et al., 2020). (p.2) Technically, every basketball player wants an excellent performance to bring his team to win the game. However, the success of an attack to score points depends on the individual's ability to master several techniques in playing basketball (Khan et al., 2018; Lemme et al., 2019). So, in this case, the players and coaches must be able to analyze the performance during or at the end of the game; the coach and players must analyze the match to determine the players' performance.

Sampaio et al. in Reina et al., (2020) suggest that all players must master the technique in basketball games because every match technique significantly affects a team's success in winning the game. The most critical variables analyzed are player and team performance in actual competition. There are several indicators of a team's victory, seen from the performance of good players, and good performance can be seen from how many players make assists, rebounds, turnovers, and shooting (Huyghe et al., 2018; Pino-Ortega et al., 2021). According to Jack II et al., (2020), two fundamental factors influence the team's success, namely productive resources, good potential, and how efficient the resources are. Are the most successful teams necessarily the most efficient, or is a success even if it is not efficient. It can be said that the most efficient team does not necessarily achieve victory (Matulaitis & Bietkis, 2021; Sarlis & Tjortjis, 2020). Through the measurement of efficiency can find the team with the highest wins. To be able to play efficiently, players must have good performance because the performance of players is very influential on a team; if all players do not have good performance, then the player is not necessarily able to bring his team to win and can be seen from the statistical results at the time of the match. With statistical data, we can see individual efficiency in each game, even in each round, and find out which player can bring his team to win or bring his team to lose in every match (Matulaitis & Bietkis, 2021; Sampaio & Janeira, 2003; Sarlis & Tjortjis, 2020). Statistics are the most common benchmark in professional basketball for comparing overall scores. Player or called efficiency. These are parts of basketball statistics, a combination of basic player statistics that can determine each player's total efficiency, namely points, rebounds, assists, steals, blocks, turnovers and shots, and fouls (Sampaio & Janeira, 2003). Efficiency statistics, in theory, can provide a player's contribution in terms of offensive (points, assists) and defensive contribution (steals, blocks). However, it is generally considered that efficiency ratings are seen from players who commit fouls while defending because the defense is tough to measure using statistics.

Efficiency or Player Efficiency Rating (PER) is a rating per minute. PER extends this critique to calculating stats for basketball, noting that a player's chances of collecting stats depend on the number of minutes played as well as the speed of the game. Grieshober et al., (2018) said that the efficiency of players or the performance criteria of players on the field seen from rebounds and assists blocked shooting can also be used to evaluate player performance. Researchers assume that understanding the performance of the analyzed basketball match can describe the team's strategy and tactics. The efficiency results are generated from the total data from the box score processed by Fibalivestat.

One of them is the player efficiency rating (PER). John Hollinger, a sports journalist, discovered this. According to Matulaitis & Bietkis, (2021), efficiency is measured by the weighting of each player's performance while on the field, depending on the time and situation, and the efficiency obtained by looking at the number of minutes played by players (Jones et al., 2019; Mclean et al., 2019; Vaquera et al., 2016). This formula takes multiple variables, including points, assists, shots, fouls, free throws, shots taken, missed shots, rebounds, steals, and turnovers, to measure players' performance according to their pace throughout the game and the league's average performance level.

In a study Pino-Ortega et al., (2021) Said team sports have been analyzed to know the needs of high-level players and team performance in several dimensions (biomechanics, physiology, psychology, and sociology) that are applied in several sports

(volleyball, handball, water polo, and sports). Basketball). In a basketball game, statistical data for each match can be obtained. According to Patel et al., (2019) suggests that: There is a close relationship between sports and statistics; measuring performance and statistics can also be used to make simulation matches. The development of sports science makes statistical positioning even higher. The role of physiology and coaching science is indeed essential in achieving achievement. However, combining it with statistical abilities resulted in perfection.

Although it looks confusing, statistics show how players and teams perform in matches. After the game, the coaches usually often use statistical data as material for team evaluation. The good and bad performance of players can be seen from shooting 2 points and 3 points, both successful and unsuccessful), free throws (successful and unsuccessful), offensive and defensive rebounds, blocks and assists, fouls, turnovers, and steals, which the result is the efficiency of the player (Khan et al., 2018; Lemme et al., 2019; Reina et al., 2020). So all the statistics of these basketball players have been recorded throughout the season and even throughout the player's career. However, in carrying out the statistical recording, there are pluses and minuses; the players may only be able to read and cannot understand the results of statistical data, as well as the coaches not, can understand the statistical results, and sometimes the coaches only use statistical data to see how many fouls have been committed (Khan et al., 2018; Lemme et al., 2019; Reina et al., 2020). Players do; sometimes, some big teams have a special team to analyze statistics.

Based on these circumstances, the authors are interested in revealing and reviewing the analysis of the performance of the 2017 Indonesian Basketball League players. Because a team's victory can be seen from the player's performance, which can be seen from statistical results as an evaluation material for the team's defeat or victory, and used as a reference for coaches to determine strategies or tactics that will be applied in the next match, besides that the data can also be used to select the national team and to rank the performance of players in each team.

LITERATURE REVIEW

Performance analysis is a field of sports and sports science related to sports performance that is used for athlete evaluation, which distinguishes performance analysis from other disciplines; it deals with accurate and actual data based on data collected from self-reports such as questionnaires, group focus, interviews, and videos (Huyghe et al., 2018; Pino-Ortega et al., 2021). According to Mclean et al., (2019), The applied nature of performance analysis research is described, and a justification for performance analysis as a research area is made. There is an overlap between performance analysis and other disciplines as technical, physical, and psychological aspects of performance are often being investigated within performance analysis investigations.

Analysis of the performance of both individuals and teams is instrumental and can determine the success or failure of a match (Lemme et al., 2019; Lorenzo et al., 2019; Reina et al., 2020). In addition to monitoring matches, performance analysis can also be used to monitor players as a team and individually, usually used for talent scouting purposes. The importance of performance analysis is a detail that must be considered by analysts such as coaches and officials who work for their teams because without understanding the characteristics of each individual (athlete) in the team, it would be nil if the coach expected these players to be able to contribute optimally to every match that was carried out (Grieshober et al., 2018; Li et al., 2021; Pino-Ortega et al., 2021). The player's performance can be seen from the total efficiency; it will be seen how much the player's contribution to his team is. According to Lemme et al., (2019), this type of efficiency is evaluated by calculating the number of points the team has made with the players on the field minus the number of points the opposing team has made. This calculation is done for each team player while they are on the field. The player's performance will be seen in a few minutes on the pitch.

METHODS

This research is included in ex post facto descriptive research. This research was conducted on teams participating in the 2017

Professional Basketball League, as many as 11 teams participated in the league, and there were 140 players from 11 teams. The sample used is a saturated sample where all players are sampled. First, the researcher determines the population and sample; after being determined, the researcher begins to determine the schedule for the researcher to conduct research; the research schedule has been obtained, the researcher conducts research when the Indonesia Basketball League (IBL) Season II 2017 match takes place, as many as 11 teams participate in the IBL Season II, which divided into two groups (red group and white group). The red group consisted of a team from Satri Muda Pertamina Jakarta, Cls Knights Surabaya, Bank BJB Garuda Bandung, Jne Siliwangi Bandung, and Bima Perkasa Jogja. In contrast, the white group consisted of teams from Pelita Jaya Jakarta, W88.News Aspac Jakarta, Pacific Caesar Surabaya, Nsh Jakarta, Hangtuah Sumsel, and Satya Wacana Salatiga. The total of all matches starting from the Regular Season round and the Playoff round is 85 games; team statistics in each game are collected to determine the player's performance in each game and take videos during the match. After the data was obtained, the researcher began collecting all the data to process the research results.

RESULTS AND DISCUSSION

Data was collected through statistical data processing on each team during the match. The data analyzed in this study are all games in the 2017 season from series 1 – 8 to the playoffs; this data is taken using statistical data from FIBALIVESTATS, which is taken at the end of each match (Quarter 4) by the statistician.

Description of each Player's Efficiency Data

One hundred forty-four players participated in the 2017 Professional Basketball League, and it is known that each player's total efficiency and points start from the one with the highest effectiveness and point to the lowest of all the games they participate in. Efficiency results are total points, total shooting in and not getting in, total rebounds during Offensive Rebounds and Defensive Rebounds, total doing Turnovers, total doing Steals, total doing Assists, total doing Blocked Shots, and total doing Foul, using the formula from the Fibalivestats program. The average efficiency of each player in the 11 teams that participated in the 2017 Professional Basketball League, which was then separated by position when the players competed, can be seen in table 1-6.

Table 1. Point Guard position

Jersey	Name	Team	EFF	PTS
1	Dhyaksa Andakara Prastawa	ASPAC JAKATRA	149	169
20	Wijaya Wendha	GARUDA BDG	116	72
31	Saputra Nuke	PACIFIC CAESAR	93	91
5	Wuysang Mario	CLS SURABAYA	89	118
2	Hardianus Hardianus	SATRIA MUDA	87	62
11	Hidayat Arif	CLS SURABAYA	76	79
3	Purwanto Kelly	HANGTUAH	61	58
71	Teja Widyantaputra	ASPAC JAKATRA	53	21
9	Hutasoit Reiner	PACIFIC CAESAR	40	55
8	Julius Achmad Faisal	PELITA JAYA	39	37
11	Arizanugra Audy Bagastyo	SATRIA MUDA	30	34
17	Sucipto Budi	SATYA WACANA	22	54
23	Gumilar Gian	BANDUNG UTAMA	9	22
11	Mahardika Andrey	PELITA JAYA	6	4
15	Panagan Jan Misael	CLS SURABAYA	5	0
2	Kuntara Januar	GARUDA BDG	2	62
1	Tampa'i Elyakim	SATYA WACANA	-1	3
1	Uneputty Richardo	HANGTUAH	-3	9
25	Wijaya Benny	NSH JAKARTA	-5	2
16	Eliza Ranti Jeremiah	PELITA JAYA	-7	8

8	Fredy Fredy	BANDUNG UTAMA	-14	31
4	Husnuzan Imanudin	NSH JAKARTA	-14	5
3	Manuputty Cassiopeia	SATYA WACANA	-27	48

Based on the data from **Table 1**, the highest efficiency result is Dhyaksa Andakara Prastawa from Aspac Jakarta, with a total efficiency of 149 with 169 points, and the lowest is Manuputty Cassiopeia from Satya Wacan Salatiga, with an efficiency of -27 with 48 points.

Table 2. Shooting Guard Position

Jersey	Name	Team	EFF	PTS
0	Pamungkas Respati	PELITA JAYA	156	159
7	Wenas Daniel	PELITA JAYA	143	100
1	Pratama Diftha	GARUDA BDG	116	155
35	Kokodiputra Juan Laurent	SATRIA MUDA	96	112
4	Damar Grahita Abraham	ASPAC JAKATRA	76	116
1	Pradhitya R. Azzaryan	NSH JAKARTA	58	85
4	Michel Vamiga	SATRIA MUDA	58	32
22	Shariputra Raymond	ASPAC JAKATRA	51	52
17	Baskoro Katon Adjie	CLS SURABAYA	26	37
11	As'adi M. Alan	BIMA PERKASA	26	21
16	Mustohirin Mustohirin	NSH JAKARTA	21	30
3	Sua Yo	SATRIA MUDA	19	17
93	Putra Anindya	PACIFIC CAESAR	11	30
8	Toas Poli Tertius	BIMA PERKASA	5	12
2	Abraham Hans	CLS SURABAYA	4	13
0	Tuasela Yerikho	CLS SURABAYA	0	8
88	Budidharma S A. A. Ngurah	CLS SURABAYA	-1	6
11	Nurdin Muhammad Alfy	GARUDA BDG	-1	3
30	Amier Andi	NSH JAKARTA	-4	6
3	Wismaya Aga	PACIFIC CAESAR	-4	4
2	Wilopo Tri Wijoyo	BANDUNG UTAMA	-7	45
16	Praditya Bryan Adha	SATYA WACANA	-8	37
9	Fahminda Edo Rizki	BIMA PERKASA	-16	6
7	Satria Ichsan	BIMA PERKASA	-29	27

Based on the data from **Table 2**, the highest efficiency result is Pamungkas Respati from Pelita Jaya Jakarta, with a total efficiency of 156 with 159 points, and the lowest is Satria Ichsan from Bima Perkasa Yogyakarta with an efficiency of -29 with 27 points.

Table 3. Small Forward

Jersey	Name	Team	EFF	PTS
33	Dikania Wisnu Arki	SATRIA MUDA	176	144
5	Ekayana Andrie	HANGTUAH	94	103
15	Adriano Andre	SATYA WACANA	77	122
9	Febiansyakh Sandy	CLS SURABAYA	72	101
17	Prihantono Amin	PELITA JAYA	71	52
7	Joni Mei	HANGTUAH	70	89
24	Muhammad Indra	PACIFIC CAESAR	65	52
27	Ardiansyah Bima Riski	CLS SURABAYA	62	61
23	Seputra Avan	SATRIA MUDA	52	32
21	Arista Okky	PACIFIC CAESAR	48	63
16	Sanjaya Oki Wira	ASPAC JAKATRA	41	74

8	Aziz M. Sandy	SATRIA MUDA	30	33
3	Ray Rodmundus	BIMA PERKASA	26	45
11	Apriyana Romadonsyah Teddy	BANDUNG UTAMA	19	23
13	Gunawan Gunawan	SATRIA MUDA	16	20
17	Abdi Lucky	HANGTUAH	15	9
11	Yuwana Ramdhan	PACIFIC CAESAR	12	9
88	Sianturi Giulio Putra	NSH JAKARTA	10	18
1	Alfian Rizky	BIMA PERKASA	10	11
52	Surliyadin Surliyadin	GARUDA BDG	8	57
5	Koswara Lutfi	NSH JAKARTA	7	51
5	Cahyo Leonardus	BIMA PERKASA	4	5
9	Santosa Handri Satrya	ASPAC JAKATRA	4	12
21	El Islamy Muhamad	GARUDA BDG	3	3
18	Azizi Reza	SATYA WACANA	2	3
7	Risky Gabriel Batitusta	GARUDA BDG	2	0
4	Utu. P Modestus	BIMA PERKASA	-2	7
6	Dwi Handoko Prio	SATYA WACANA	-2	0
6	Lioteza Luca	HANGTUAH	-5	0
70	Yogi Dasilva Francisco	PELITA JAYA	-5	1
17	Herlusdityo Haritsa	BANDUNG UTAMA	-6	0
8	Rahangmetan Rionny	SATYA WACANA	-12	29
13	Halim Oleh	BIMA PERKASA	-13	14

Based on the data from **Table 3**, the highest efficiency result is Dikania Wisnu Arki from Satria Muda Pertamina Jakarta, with a total efficiency of 176 and won 144 points. The lowest is Halim by from Bima Perkasa Yogyakarta, with an efficiency of -13 with 14 points.

Table 4. Power Forward Position

Jersey	Name	Team	EFF	PTS
6	Regowo Pringgo	ASPAC JAKATRA	116	146
9	Pratama Raylly	NSH JAKARTA	79	47
13	Gemilang Kaleb Ramot	CLS SURABAYA	71	86
12	Ramadhani Fandi Andika	ASPAC JAKATRA	64	44
10	Utomo Rachmad Febri	CLS SURABAYA	48	26
32	Herman Herman	CLS SURABAYA	39	25
24	Saroni Moh	BIMA PERKASA	27	48
24	Irman Muhammad	NSH JAKARTA	26	22
1	Oei Laurentius	SATRIA MUDA	26	25
17	Hardian Wicaksono Muhammad	PACIFIC CAESAR	23	46
10	Effendi Rizky	ASPAC JAKATRA	16	11
13	Nurman Sigit Harun	GARUDA BDG	12	61
15	Surawi Vinton	BANDUNG UTAMA	11	87
33	Raharjo Riza	BANDUNG UTAMA	11	22
9	Minallah Fadlan	HANGTUAH	11	41
31	Ramli Hendru	PELITA JAYA	6	21
26	Junaidi Ahmad	HANGTUAH	5	5
7	Syarif Achmad	NSH JAKARTA	3	12
31	Amaluddin Amaluddin	HANGTUAH	2	5
61	Alfandi Anggi	GARUDA BDG	1	4
9	Nuban David	SATYA WACANA	0	20
12	Mustofa Ali	BIMA PERKASA	-1	12
12	Wijaya Yoseph	NSH JAKARTA	-3	0

21	Sanjaya Vincent	SATYA WACANA	-3	35
14	Febriyan Ryan	NSH JAKARTA	-4	6
7	Rismawan Andreas	SATYA WACANA	-4	0
13	Hosen Yurifan	SATYA WACANA	-5	12
14	Insani Fakhry	BANDUNG UTAMA	-5	0
8	Nugraha Dicka	PACIFIC CAESAR	-9	31
15	Priasmoro Yanuar Dwi	BIMA PERKASA	-10	52
12	Ramadhan Musthofa	SATYA WACANA	-11	15
8	Pattikawa Yan Steven	HANGTUAH	-11	10
10	Sapto Nugroho Ary	HANGTUAH	-19	18

Based on the data from **Table 4**, the highest efficiency result is Regowo Pringgo from Aspac Jakarta, with a total efficiency of 116 and 146 points. The lowest is Priasmoro Yanuar Dwi from Bima Perkasa Yogyakarta, with an efficiency of -10 with 52 points.

Table 5. Center Position

Jersey	Name	Team	EFF	PTS
13	Nyoman Indrawan Ponsianus	PELITA JAYA	182	122
66	Gunawan Galank	GARUDA BDG	146	41
15	Sitepu Christian	SATRIA MUDA	142	114
0	Wuwungan Valentino	ASPAC JAKATRA	94	57
16	Nugroho Firman	CLS SURABAYA	67	83
2	Haryoko Dwi	PELITA JAYA	62	34
21	Falconi Muhammad Rizal	SATRIA MUDA	60	55
30	Sitorus Kevin	SATRIA MUDA	58	31
23	Ruslan Ruslan	ASPAC JAKATRA	56	34
12	Heryadi Dian	PACIFIC CAESAR	44	26
28	Dini Fidyan	ASPAC JAKATRA	37	38
6	Damanik Ferdinand	BANDUNG UTAMA	35	86
14	Prasetyo Putra Adhi	PELITA JAYA	34	54
34	Thoyib Muhammad	CLS SURABAYA	31	32
39	Hartanto Tri	PELITA JAYA	31	21
25	Wardana Muhammad	PACIFIC CAESAR	22	25
33	Kosasih Vincent	ASPAC JAKATRA	19	13
32	Martinus Luke	GARUDA BDG	13	38
35	Liem Kristian	ASPAC JAKATRA	4	5
9	Maryono Untung Gendro	BANDUNG UTAMA	3	8
50	Ulhaq Muhammad	SATRIA MUDA	0	20
33	Gunawan Luthfianes	GARUDA BDG	-1	19
32	Yanto Max	HANGTUAH	-2	1
27	Ristanto Donny	PACIFIC CAESAR	-7	1
16	Tiara Andre	BANDUNG UTAMA	-10	53
21	Damanik Boy	NSH JAKARTA	-12	0
15	Sugiharto Tony	HANGTUAH	-14	30

Based on data from **Table 5**, the highest efficiency result is Nyoman Indrawan Ponsianus from Pelita Jaya Jakarta, with a total efficiency of 182 and 122 points. At the same time, the lowest is Sugiharto Tony from Hangtuah, South Sumatra, with an efficiency of -14 with 30 points. The efficiency results are taken from the total points, total shooting in and not going in, total rebounds during Offensive Rebounds and Defensive Rebounds, total Turnovers, total Steals, total doing Assists, total doing Blocked Shots, and total doing Fouls and processed with the existing program on Fibalivestats.

Description of Team Efficiency Data

After all the player efficiency data is collected, then add up the total player efficiency based on each team. These results can be seen from **Table 6**. Based on data from **Table 6** which has the highest team efficiency results, the Pelita Jaya Jakarta team with a total efficiency of 1218 and a total number of 1330 points, the Pelita Jaya team managed to become the winner in the 2017 Professional Basketball League.

Table 6. Team Efficiency

TEAM	EFF	PTS
PJE	1218	1330
GRB	1006	1190
BIMA PERKASA	857	1441
SMP	850	731
JNE BU	830	1181
ASPAC	780	792
CLS	589	675
PCF	500	717
HTS	204	378
NSH	162	284
SWC	28	378

Statistical Assumption Test

Based on the output of the normality test, the EEF data with a value of KS = 0.634 and sig = 0.816 > 0.05 data is declared normal. The data is declared normal in PTS data with KS = 0.575 and sig = 0.896 > 0.05. Both data show a normal distribution, so hypothesis testing is done using parametric statistics.

Table 7. Data Normality Test Results

	Kolmogorov-Smirnov	Sig.	Information
EEF	0,634	0,816	Normal
PTS	0,575	0,896	Normal

Hypothesis Test

Hypothesis testing was carried out using parametric statistical tests through the Pearson correlation test. The results of testing the hypothesis can be seen in table 8 and 9 below:

Table 8. Hypothesis Test Results

Ttable	Sig.	Information
0,885	0,000	Significant Relationship

Hypothesis: H0 = There is no significant relationship between player performance and team achievement based on statistical data from Fibalivestats. H1 = There is a significant relationship between player performance and team achievement based on statistical data from Fibalivestats. Significance value or probability value > 0.05, Ho is accepted. Significance value or probability value < 0.05, Ho is rejected. It can be seen that the values in **Table 8**. above the value of r = 0.885 and sig. = 0.000 < 0.05 then there is a significant relationship between player performance and team achievement.

Table 9. Coefficient of Determination Test Results

R	R Square
0,885	0,784

The results of the regression test are in **Table 9**. shows R square = 0.784 or it can be interpreted that the contribution of player performance to team achievement is 78.4% while the remaining 21.6% is influenced by other factors.

Efficiency results for all players

From the results of the calculation of efficiency data for all players based on

Fibalivestats, excellent efficiency by players from Pelitajaya Nyoman Indrawan Ponsianus with a total of 182 efficiencies, whereas the Pelita Jaya team managed to become champions of the league, an average of 10 players with high-efficiency teams entered the playoffs.

Efficiency results based on position at the time of the match

a. Point Guard position. The results of the calculation of the efficiency of the total of all games based on the position of the point guard, the result that has excellent efficiency in the point guard position is Dhyaksa Andakara Prastawa from Aspac Jakarta with a total efficiency of 149 matches and 169 points.
b. Shooting Guard Position. The results of the calculation of the efficiency of the total of all games based on the position of the point guard, the result that has an outstanding efficiency in the Shooting Guard position is Pamungkas Respati from Pelita Jaya Jakarta with a total efficiency of 156 with 159 points.
c. Small Forward Position. The results of the calculation of the efficiency of the total of all games based on the position of the point guard, the result that has excellent efficiency in the Small Forward position is Dikania Wisnu Arki from Satria Muda Pertamina Jakarta with a total efficiency of 176.
d. Power Forward Position. The calculation of the efficiency of the total of all games is based on the position of the point guard; the result that has excellent efficiency in the Power Forward position is Regowo Pringgo from Aspac Jakarta, with a total efficiency of 116.
e. Center Position. The results of the calculation of the efficiency of the total of all games based on the position of the point guard; the result that has excellent efficiency in the Center position is Nyoman Indrawan Ponsianus from Pelita Jaya Jakarta with a total efficiency of 182.

Team efficiency results

From the calculation results of all players, and after being sorted based on the team of each player, the total efficiency based on the team is obtained, which has the highest total efficiency in the Pelita Jaya Jakarta team with a total efficiency of 1218 and a total of 1330 points. With high efficiency results, Pelita Jaya team Jakarta managed to become the winner in the 2017 Professional Basketball League. From the results of the Pearson correlation, it was found that the player's performance had a significant relationship to the achievement of his team. This can be seen from the correlation value is 0.885, so player performance is very influential on team achievement. Because one of the most important variables analyzed is the performance of the players and their team's performance in the actual competition.

CONCLUSION

Based on the results of data processing and analysis, the answers to the research questions were obtained. The conclusion of the answer to the research question is the results of the effectiveness of all players, the highest effectiveness by Pelitajaya players, namely Nyoman Indrawan Ponsianus, where these players can bring his team to become champions in the 2017 Basketball League. The results of effectiveness are based on position during the match.

The position of Point Guard with the highest effectiveness is Dhyaksa Andakara Prastawa from Aspac Jakarta; this player can bring his team into the playoffs. The Shooting Guard position, which has the highest effectiveness, is Pamungkar Respati Ragil from Pelitajaya; the player managed to bring his team to be the winner of the 2017 Basketball League. The Small Forward position, which has the highest effectiveness, is Dikania Wisnu Arki from Satria Muda; the player brought his team into the final and became the best player in the 2017 Basketball League. The Power Forward position with the highest effectiveness is Regowo Pringgo from Aspac Jakarta, and this player managed to bring his team into the playoffs.

The Center position with the highest effectiveness is Nyoman Indrawan Ponsianus from Pelitajaya, where the player can bring his team to become champion in the 2017 Basketball League. The results of the calculation of all players, and after being

sorted by a team of each player, the total efficiency is obtained by the team with the most outstanding total efficiency in the Pelita Jaya Jakarta team. There is a significant relationship between player performance and team achievement.

Author's declaration

Authors' contributions and responsibilities

The authors made substantial contributions to the conception and design of the study. The authors took responsibility for data analysis, interpretation and discussion of results. The authors read and approved the final manuscript.

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Competing interests

The authors declare no competing interest.

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