Match Data Study: Johns Brothers vs Tyson McGuffin & Dekel Bar

Summary

This paper presents a comprehensive analysis of a single pickleball match using video data. The analysis focuses on quantifying various aspects of player performance, including shot selection, placement, effectiveness, movement patterns, and overall strategy. By breaking down the match into discrete events and analyzing player actions, we aim to provide insights into successful strategies and areas for potential improvement. The results of this analysis contribute to the growing body of knowledge in pickleball analytics and provide valuable information for players, coaches, and enthusiasts seeking to enhance their understanding of the game. This research has implications for the development of personalized training programs, coaching strategies, and future research in pickleball performance analysis.

Match Facts

Video link: https://www.youtube.com/watch?v=iRqxz5vZiqA
Video uploaded time: 1/13/2024
Match result: Johns/Johns won by 2:0.
Game results:

Johns/Johns	11	11
Mcguffin/Bar	9	8

Match length: 36m 46s
Game length:

	Game 1	Game 2
Length(mm:ss)	18:21	36:46

Data collected

Table 1. Number of rallies in the match and rallies per minute.

Rallies	Rallies/min
95	2.58

Table 2. Number of points in the match, points per minute, and rallies with points won/lost.

Points	Points/min	% of rallies with points change

39	1.06	41.05

Table 3. Shot counts, shots per minute.

Shots	Shots/min
958	26.05

Table 4. Shots per rally statistical data.

Average	STD	Min	Max	Median	Mode
10.08	9.36	1	53	7	3

Figure 1. Histogram of rally counts distribution.

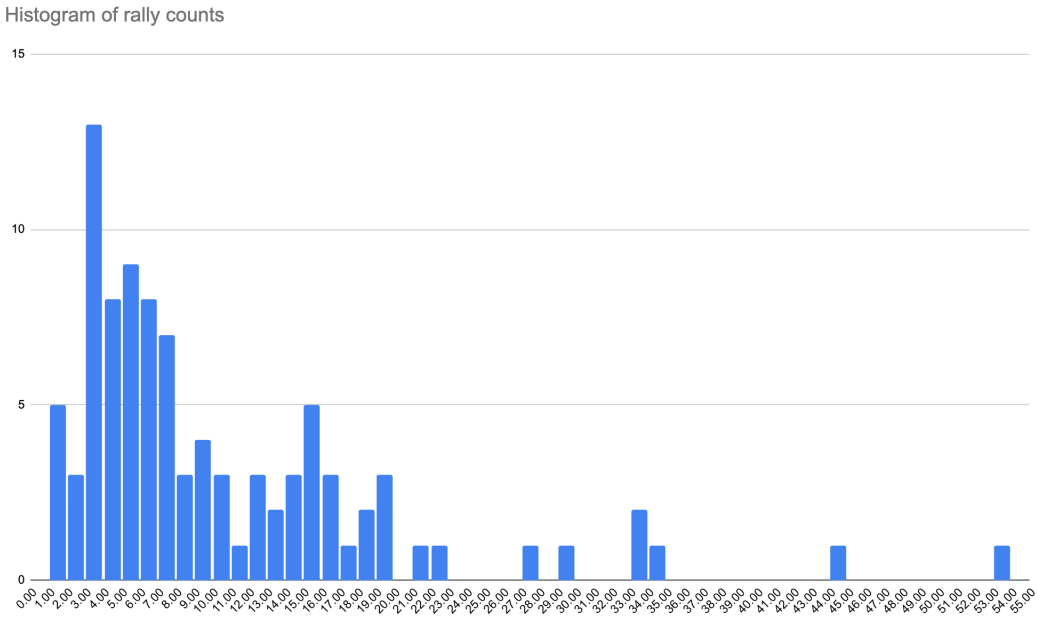


Figure 2. Rally counts(blue), Johns/Johns score, Mcguffin/Bar score and rally score changes.

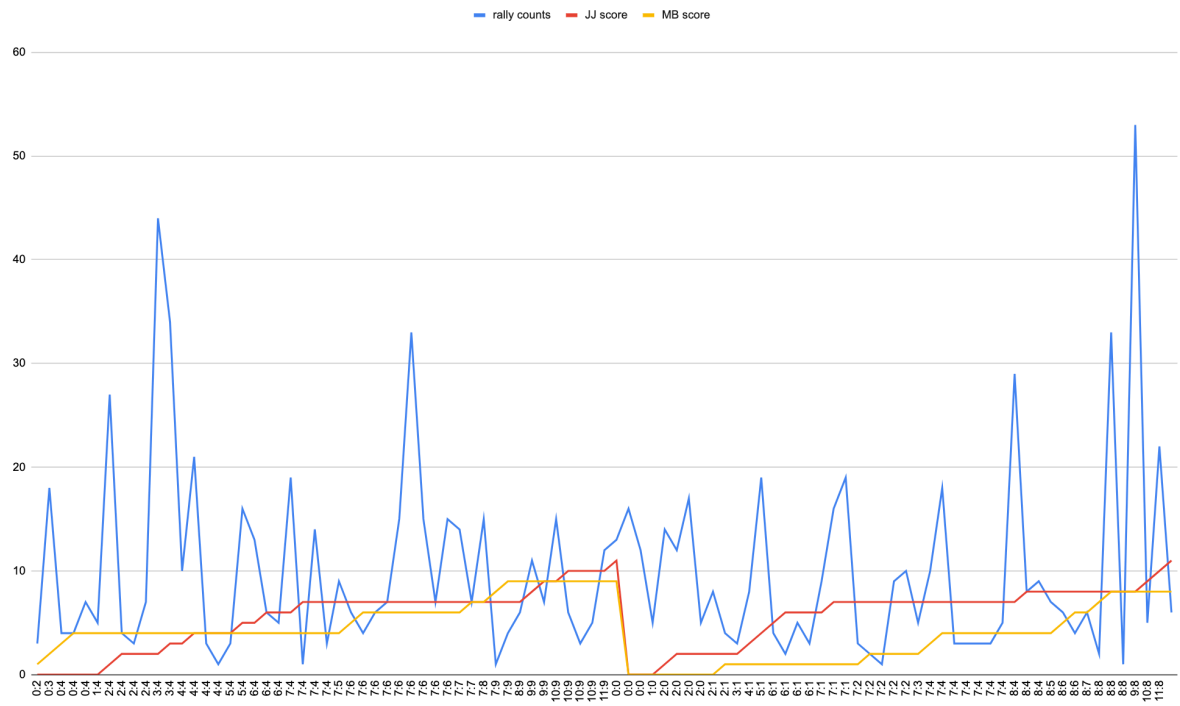


Table 5. Shot counts of each player in each game and the match.

	game 1 shots	game 2 shots	total shot count
DB	128	98	226
TM	126	124	250
CJ	122	121	243
BJ	135	103	238

Table 6. Shots mistake counts(missed, out, or into the net).

mistakes	shots	% of all mistakes
missed	21	22.11
out	37	38.95
net	35	36.84

Table 7. Shots mistake counts for each player.

Player	mistakes	% of all mistakes
DB	31	32.63
TM	21	22.11

CJ	20	21.05
BJ	23	24.21

Table 8. Shots mistake count and percentage for each side.

Side	mistakes	% of all mistakes
DB+TM	52	54.74
BJ+CJ	43	45.26

Table 9. Player mistake types and rates. (E.g. missed rate = missed count/player shots count)

Player	missed	out	net	missed rate	out rate	net rate
DB	8	13	8	3.54%	5.75%	3.54%
TM	6	6	9	2.40%	2.40%	3.60%
CJ	5	5	7	2.06%	2.06%	2.88%
BJ	2	8	11	0.84%	3.36%	4.62%

Figure 3. Mistake distribution for each player.

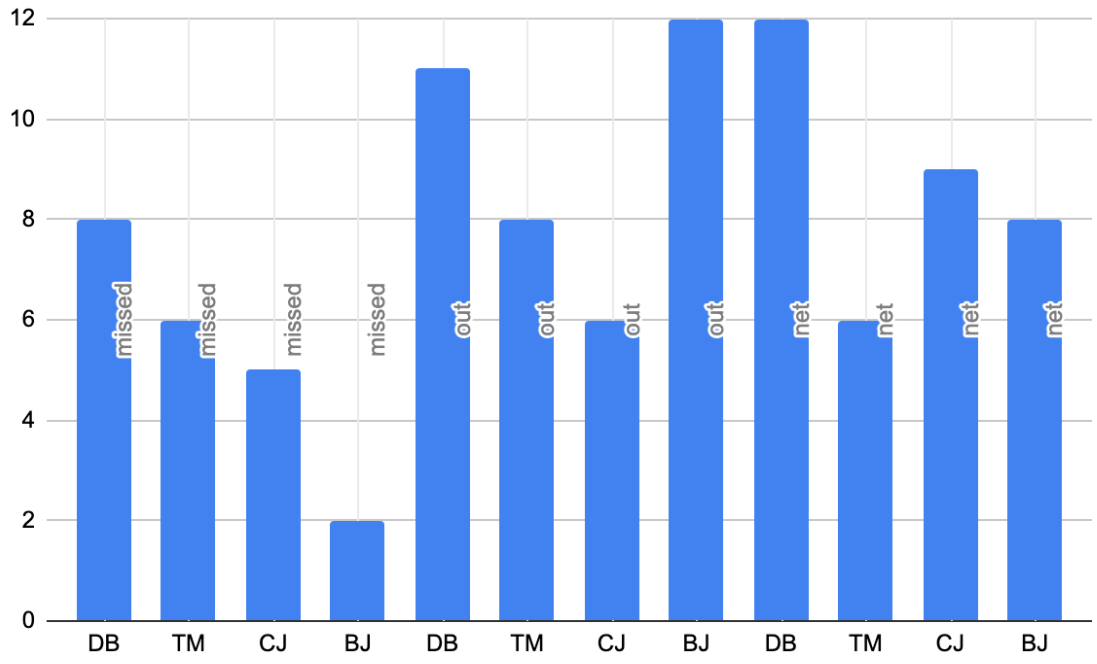


Table 10. Rally loss causes counts and percentage.

Rally lost type	counts	percentage
serve related	7	7.37%
volley/speed up related	40	42.11%

dink related	8	8.42%
drive related	25	26.32%
drop related	6	6.32%
other	9	9.47%

Table 11. Preconditions caused rally loss (counts and percentage).

preconditions	counts	percentage
serve related	14	14.74%
dink related	20	21.05%
speed up/volley	19	20.00%
drop	5	5.26%
caught at mid court	5	5.26%
other	32	33.68%

Table 12. Rallies included dink battle counts and percentage.

Rally counts with dink battle	% of rallies with dink battle
20	31.5%

Table 13. Dink battles result in firefight counts and percentage.

Dink battles result in firefight	% of dink battles result in firefight
21	70%

Table 14. Rallies included firefight counts and percentage.

Rally counts with firefight	% of rallies with firefight	% of firefights from dink battle
23	24.21%	91.30%

Table 15a. Player wins firefight counts and percentage.

Player	Firefight win count	% of win count
DB	5	23.81%
TM	3	14.29%
CJ	3	14.29%
BJ	10	47.62%

Table 15b. Team wins firefight counts and percentage.

Side	Firefight win count	%

DB+TM	8	38.09%
BJ+CJ	13	61.91%

Table 16. Firefight shot counts and percentage.

Player	firefight shots	% of all shots
DB	27	33.33%
TM	12	14.81%
CJ	15	18.52%
BJ	27	33.33%

Table 16b. Team firefight shot counts and percentage.

Side	Firefight win count	%
DB+TM	39	48.15%
BJ+CJ	42	51.85%

Table 17. Firefight starter counts and percentage.

Player	Firefight starter	% of all firefight
DB	6	25.00%
TM	5	20.83%
CJ	5	20.83%
BJ	8	33.33%

Table 17b. Team firefight starter counts and percentage.

Side	Firefight starter counts	%
DB+TM	11	45.83%
BJ+CJ	13	54.17%

Table 18. Rally win cause count and % of win cause (speed up and counter are in firefight).

Rally win cause	win cause count	% of win cause
drive	13	25.49%
speed up	17	33.33%
counter	10	19.61%
overhead	7	13.73%

dink	3	5.88%
drive counter	1	1.96%

Figure 4. Player win causes count.

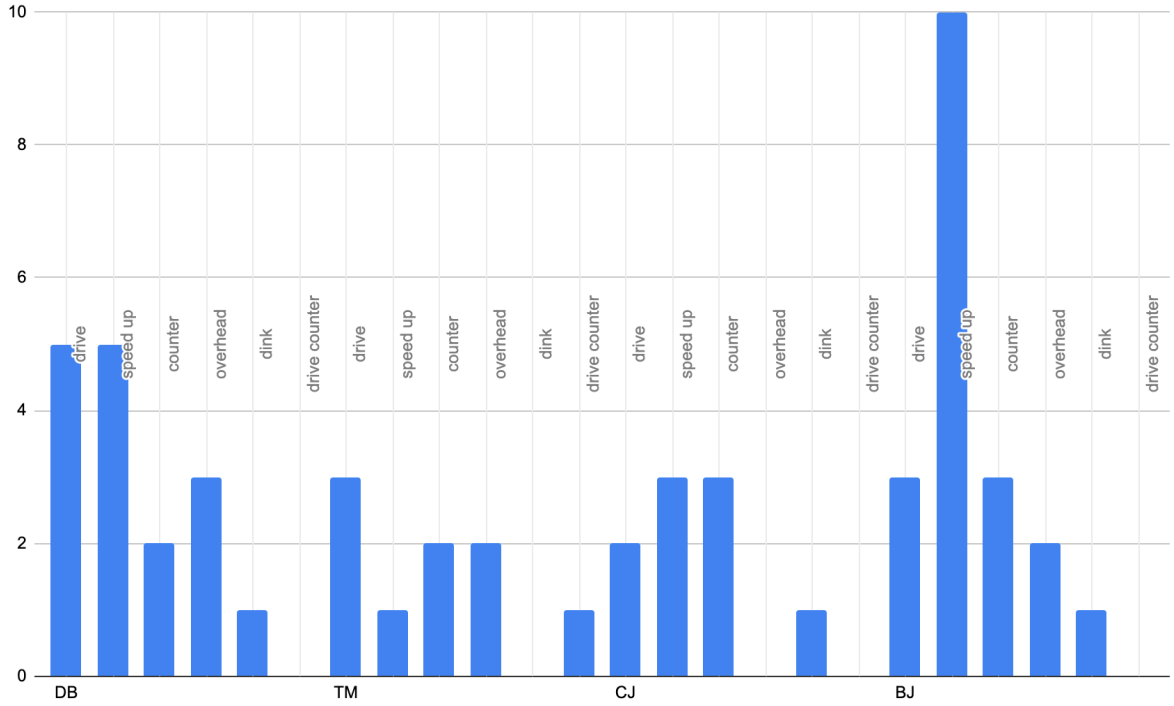
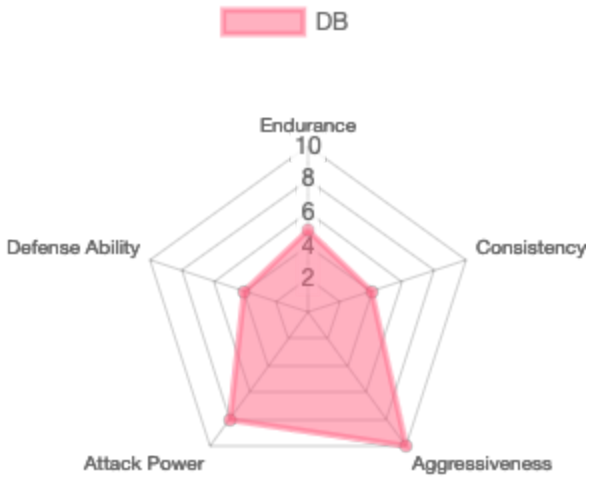


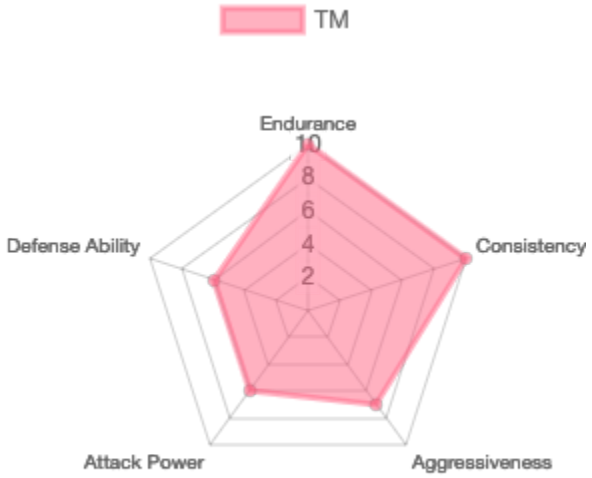
Table 19. Winning position and counts. 100% of the baseline wins are from drives.

position	counts	% of all wins
kitchen line	45	80.36%
base line	10	17.86%
mid court	1	1.79%

Pickle AI Badge
DB: The Cannon



TM: The Backboard



CJ: The Wall

BJ: The Swiss Army Knife

Quick Results

General impression

In comparison to other games Johns' brothers have played, this game presented a lesser challenge, resulting in a 2:0 victory within 30 minutes.

Intensity

This match data analysis indicates that pickleball can be classified as a moderate-intensity physical activity. This particular match exhibited an average of 2.5 rallies and 26 shots per minute.

Most rallies are short

Half of all pickleball rallies consist of fewer than 7 shots. However, in rare instances, particularly during extended dink battles near the net, the number of shots in a rally can reach as high as 54.

Match is mixed with sudden long or short rallies

Pickleball rallies are unpredictable in length, ranging from a single shot to over 50. The duration of a rally can shift suddenly and without a discernible pattern. Players must be ready to adapt to these rapid changes at any moment during a game.

80% of the rallies are won at the kitchen line

The only one won at the mid court is a pop up and overhead smash.

Baseline drive can win about 20% of the rallies

Players would try to hit the ball no matter in what situation.

Errors are more common than clean misses. Players are more likely to make a mistake that results in the ball landing out of bounds or in the net, rather than completely missing the ball. High level players would try to hit the ball no matter in what situation.

Players on the left side of the court show more mistakes

Maintaining position on the left side of the pickleball court presents a greater degree of difficulty and requires more effort compared to the right side.

Players on the left side are more aggressive in firefight

Players on the left side started 55% of all firefights.

Players on the left side hits ⅔ of the firefights

Winning side has 10% fewer mistakes

The team that won the match made significantly fewer errors throughout the game compared to their opponents.

Winning side started and won most of the firefights

Johns' brothers started 55% of all firefights and won 61%.

Speed up and counter is the key to winning

Speed up and counters consist of 52% of all rally wins.

Firefight volley is the key to win/lose this match

John's brothers won 60% of the firefights. BJ started the most firefight(⅓) and won the most(½).

Drive is also important

Drive shots caused ¼ of all rally wins.

Dink, speed up, and serve is important to set up an advanced condition

Dink, serve, and speed up related issues consist of 55% of all conditions that lead to rally win/lose.

BJ has missed the least and other mistakes are about the same

BJ has a missed rate of 0.84%, which is much less than everyone else.

BJ has the most net rate

BJ won half of the firefights

BJ is the most aggressive to start firefight

He started ⅓ of all firefights.

DB has the most out rate

Dink battle happened in ⅓ of the rallies

70% Dink battle result in firefight

Firefight happened in ¼ of the rallies