



## HERMENEUTICAL ANALYSIS OF MATCH REPORT OF 2017 BADMINTON WORLD CHAMPIONSHIP

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### ABSTRACT

Hermeneutic analyses are based on interpreting those research strategies which stress objectivity and independence of interpretations in the formation of knowledge. The present study aimed to analyse the badminton world championship 2017, held at Glasgow, Scotland. The total of seventy-five (N=75) matches, fifteen matches in each formats of play (Men's & Women's Singles & Doubles and Mixed Doubles) from quarter final level to final were analysed. The data were collected from official website of Badminton World Federation. As many as fourteen variables were considered for analysis. The procedure adopted for calculation of a few variables were player vs opponent (i.e. point difference = total points won by the player vs total points won by the opponent; ranking difference = ranking of the player vs ranking of the opponent and head to head record = head to head win by the player vs head to head win by the opponent etc). Descriptive statistic, one way ANOVA and independent t-test was applied as measures of analysis.

**Keywords:** Badminton, World Championship and Match Analysis.

### INTRODUCTION

Analyses of performance can help a coach to identify the strong and weak aspects of the player's game play and can help to develop strategy in order to improve his performance. But it is not an easy task to correctly analyse a badminton match. So many subjective judgments are involved and these judgments may be differed according to individual. Most of subjective judgments are associated with skill and performance related parameters. But there are some parameters which are associated with game characteristics and are objective in nature. These parameters are easily available before or after completion of every match. Duration of play, ranking of players, and scores of the players are some of such kind of data which are easily available. Based on such type of data it was found that the average match duration in a high level badminton match ranges from 40-50 minutes (Gawin, Beyer, & Seidler, 2015). A research conducted to analyse the characteristics of competitive badminton had found that in a match over 28 minutes long with intervals of 6.4 seconds and rest time of 12.9 seconds may lead a player to have maximum heart rate of 190.5 beats/minute with an average of 173.5 beats/minute (Manrique & Badillo, 2003).



Research has been carried out on point difference established by winners and losers and it was found that the winners had a superior point difference compared to the losers in all phases of a game (Barreira, Chiminazzo, & Teixeira, 2017). So the contrast between the research results and reality can be easily visible. Therefore in this current research the researcher intends to analyse a Badminton Competition i.e. BWF world championship 2017 for better understanding of game characteristics of all formats of Badminton sport.

### Methodology

Badminton World federation (or BWF) makes it available all possible game or tournament related data in their website after every match or tournament. And for world championship they designed a dedicated website ([www.bwfworldchampionship.com](http://www.bwfworldchampionship.com)) where all match related data are displayed. In the year 2017, BWF world championships was held at Emirates Arena of Glasgow; Scotland from 21st to 27th August. The competition was played in all the five formats of play (Men's & Women's' Singles & Doubles and Mixed Doubles). In each format, matches were played from round of 64. Except in Men's Singles; 16 players from each formats got bye in 1st round of the tournament. This resulted in total of 566 matches in the whole tournament (Tournament results Total BWF world championships). For the purpose of the current study the researcher had selected all matches from round of 16 to final level of

this tournament. Total of 75 matches were analysed (15 matches from each format of play) in the current study. The following variables were selected for the study:

- Total Duration (TD)
- Total points played (TPP)
- Total points won (TPW)
- Point difference (PD)
- Game 1 total points played (G1TPP)
- Game 1 total points won (G1TPW)
- Game 2 total points played (G2TPP)
- Game 2 total points won (G2TPW)
- Game 3 total points played (G3TPP)
- Game 3 total points won (G3TPW)
- Ranking (R)
- Ranking difference (RD)
- Head to head win (HHW)
- Head to head record (HHR)

The data are available in the website as shown in the figure 1. The following procedures were followed to calculate some of the variables Point difference (PD) and Ranking difference (RD)

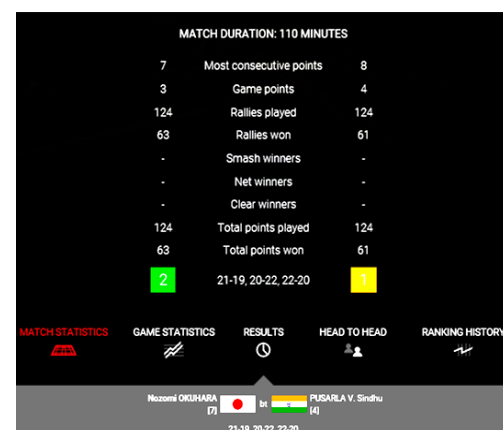


Fig. No. 1: Example of data collected from website



## Results

The Figure 2 represents the results of descriptive statistics of different formats of play. From the result of Figure 2 it can be seen that there is visible mean difference among different formats of play in the variables 'Total duration (TD)' and 'Total points played (TTP)'. But in case of the other variables it can be seen to be equal. Therefore the researcher further tried to find if there any statistically significant difference among the different formats of play in case of those two variables. The longest average time duration from one rally to another can be found in women's doubles (WD) and singles (WS) formats (0.69 & 0.68 minutes respectively; TD/TPP), whereas in men's singles (MS) format it is 0.66 minutes (TD/TPP). The average time duration from one rally to another is found to be shortest in mix doubles (XD) and men's doubles (MD) formats (0.57 minutes; TD/TPP).

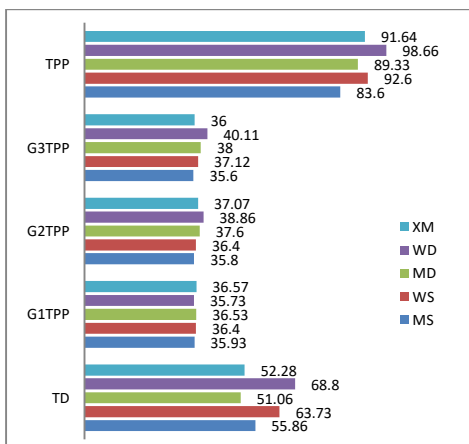


Fig. No. 2: Descriptive statistics of selected variables in different formats of play

The Table 1 describes the results of the statistical test One way ANOVA to test the difference among the different formats of play. The Table 1 displays only the significantly different pairs. From the Table 1 it can be seen that there is significant difference of mean among different formats of play. The difference in total duration of play among men's singles (MS) and women's singles (WS) (I-J=-12.93 minutes) is significant ( $p=0.004$ ;  $p<0.05$ ). The difference between women's singles (WS) and men's doubles (MD) (I-J=-12.66 minutes) is also found to be significant ( $p=0.004$ ;  $p<0.05$ ). The difference between women's singles (WS) and mix doubles (XD) (I-J=-11.44 minutes) is also a significant difference ( $p=0.011$ ;  $p<0.05$ ). The difference between men's doubles (MD) and women's doubles (WD) (I-J=-17.73 minutes) is also found as significant ( $p=0.000$ ;  $p<0.05$ ). The difference among women's doubles (WD) and mix doubles (XD) (I-J=16.51 minutes) is also found to be significant  $p=0.000$ ;  $p<0.05$ . For the variable total points played, the difference is not found to be significant ( $p>0.05$ ) among any pair of formats of play.

TABLE 1  
ONE WAY ANOVA TEST RESULT OF SIGNIFICANT MEAN DIFFERENCE

Dep. Variable	(I) Format of play	(J) Format of play	Mean Diff. (I-J)	Sig.
TD	MS	WD	-12.93	0.04
	WS	MD	12.67	0.049
	MD	WD	-17.73	0.006
	WD	XD	16.51	0.012



The Figure 3 demonstrates the distribution of points among winners and losers of all the formats of play. It can be clearly seen that in all the formats and in all the variables the distribution is higher toward the winner side.

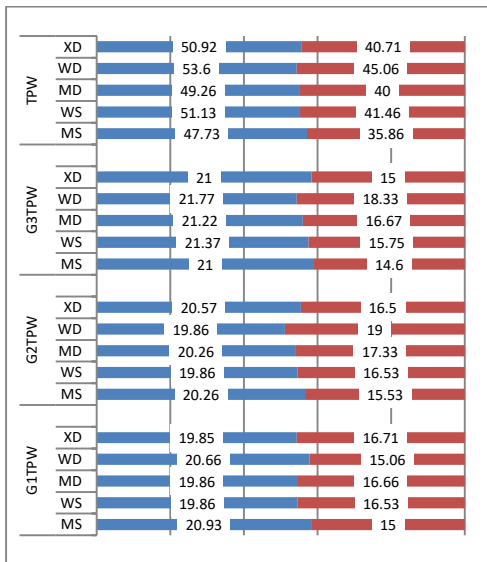


Fig. No. 3: Winner and loser's point distribution

The Figure 4 demonstrates the difference between winners and losers in some selected variables. From the Figure 4 it can be seen that where there is higher 'Head to head record (HHR)' and 'Ranking difference (RD)'; there is higher 'Point difference (PD)' between winners and losers. Therefore the researcher also tried to find the relationship of 'Head to head record (HHR)' and 'Ranking difference (RD)' with 'Point difference (PD)' and it was found that there was no significant relationship of 'Head to head record (HHR)' and 'Ranking difference (RD)' with 'Point difference (PD)'.

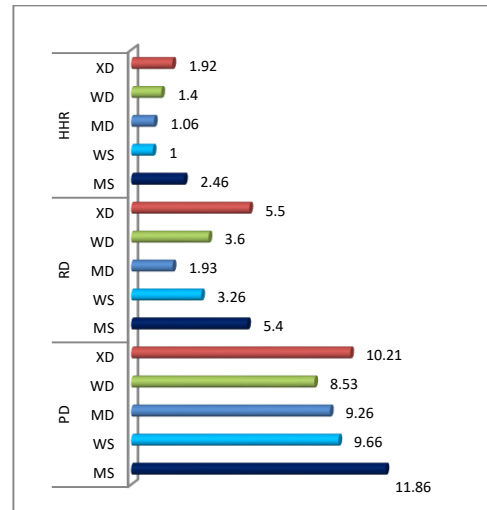


Fig. No. 4: Difference between winner and loser in selected variables

Figure 5 describes the comparison of 'Head to head win (HHW)' and 'Ranking (R)' among winners and losers. A clear difference can be seen from the Figure 5 but to know whether the difference is significant or not; Independent-Sample t test was used. The Table 2 and Table 3 describe the results of the Independent-Sample t test among winners and losers in different formats of play.

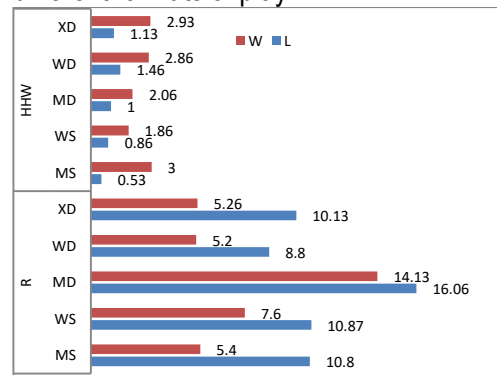


Fig. No. 5: Head to head win and ranking comparison of winners and losers



From the Table 2 it can be seen that except women's singles (WS) and women's doubles (WD) formats of play, in all the other formats the difference of 'Head to head record (HHR)' between winner and loser is statistically significant. It can also be seen that in all formats of play the winner group was recorded higher head to head score compare to the loser group.

TABLE 2  
T-TABLE OF THE VARIABLE HEAD TO HEAD RECORD WITH F VALUE FOR LEVENE'S TEST

	G	Means	Std. Dev.	Mean Diff	t value	p value
MS	W	3.00	2.39	2.46	3.906	0.001
	L	0.53	0.51			
WS	W	1.86	2.29	1.00	1.385	0.177
	L	0.86	1.59			
MD	W	2.06	1.33	1.06	2.210	0.035
	L	1.00	1.30			
WD	W	2.86	2.09	1.40	1.88	0.069
	L	1.46	1.95			
XD	W	2.93	1.66	1.80	3.148	0.004
	L	1.13	1.45			

The Tables 3 demonstrate the results of mean comparison of 'Ranking (R)' between the winner and loser group. The result of the independent-sample t test describes that except in women's singles (WS) and men's doubles (MD) format, in all other formats the loser group was possessing significantly lower ranking compare to the winner group.

TABLE 3  
T-TABLE OF THE VARIABLE RANKING WITH F VALUE FOR LEVENE'S TEST

	Gp	Means	Std. Dev.	Mean Diff	t value	p value
MS	W	5.40	3.18	5.40	2.706	0.011
	L	10.80	7.04			
WS	W	7.60	3.60	3.26	1.150	0.260
	L	10.86	10.39			
MD	W	14.13	15.21	1.93	0.357	0.724
	L	16.06	14.44			
WD	W	5.20	3.68	3.60	2.313	0.028
	L	8.80	4.76			
XD	W	5.26	4.13	4.86	2.075	0.047
	L	10.13	8.08			

## Discussion

Gawin et al. conducted a study to analyse the single and double disciplines in world-class badminton (Gawin, Beyer, & Seidler, 2015). The study suggested that women's doubles consists of the longest rallies. In the present study also longest match duration is found in Women's doubles format of play ( $68.80 \pm 18.91$  minutes). In men's singles format of play average total duration of a match is found to be  $55.86 \pm 14.97$  minutes. In women's singles it is  $63.73 \pm 22.27$  minutes and in mix doubles it is  $52.28 \pm 12.91$  minutes. The shortest duration of match is found in men's doubles format of play ( $51.06 \pm 15.49$  minutes). Even though there are visible differences in different formats of play, to establish a statistically significant difference the researcher used One-way ANOVA test. The result of the test reveals that total duration of women's doubles format play is significantly longer than men's single (mean difference= $12.933$  minutes;  $p=0.04$ ;  $p<0.05$ ), men's doubles (mean difference= $17.73$  minutes;  $p=0.006$ ;  $p<0.05$ ) and mix doubles (mean



difference=16.51 minutes;  $p=0.012$ ;  $p<0.05$ ) formats of play. It is also found that total duration of women's single format of play is significantly longer (mean difference=12.67 minutes;  $p=0.049$ ;  $p<0.05$ ) than men's doubles format of play. The researcher fails to find any statistically significant difference between men's singles and women's singles format of play. Though the researcher tries to find the differences in points played in three different games of badminton matches; he couldn't find any visible difference between different formats of play. It is also found that maximum total points are played in women's doubles format of play ( $98.66\pm 22.49$  points). But while trying to establish statistically significant difference between different formats of play (Using One way ANOVA) the researcher could not find any significant difference.

Abdullahi and Coetzee analysed the African Badminton Championship and they found that average match duration was 1470.4 seconds. They also found that number of rallies per match was 68.4. But in the present study the researcher revealed that in men's singles category, 83.6 points were played whereas in women's singles it was found to be 92.6 points. The researcher also found that in women's doubles matches, more points (98.66 points) were played compared to men's doubles (89.33 points) format of play. In mix double's format of play the researcher found that average 91.64 points were played.

The researcher also found that average head to head record or head to head winning difference between winner and loser was between 1 and 2.46 matches in all formats of play. Whereas the highest head to head winning difference was recorded in men's singles format (2.46 matches) and in women's singles (1 match) format it was found to be lowest. The researcher also found maximum ranking difference in men's singles and mix doubles formats (5.5 rank) whereas in men's doubles format it was lowest (1.93 rank). The point difference between winner and loser was maximum in men's singles format (11.86 points) and in women's double format it was lowest (8.53 points). While trying to establish the relationship between head to head record and ranking difference with point difference of winners and losers, the researcher failed to find any significant relationship. The difference in head to head record or winning difference was found to be significant ( $p<0.05$ ) in men's singles, men's doubles and mix doubles formats of play but in women's singles and women's doubles formats of play the researcher failed to establish any significant difference. The ranking of winner and loser also found to be significantly different ( $p<0.05$ ) in men's singles, women's doubles and mix doubles format but in women's singles and men's doubles format the researcher failed to do so.

The results of the current study provide so many valuable information regarding the game characteristics of the sport Badminton. The researcher expects this



information to be beneficial for coaches as well as for players for better understanding of the sport. The research suggests the coaches to develop training programme as per the result of the study to get best possible result from his pupils. Further it is added that there should be separate training programme for different players from different formats of play in badminton. For example the women's doubles and singles training session should include higher volume of endurance related drills with low or medium intensity which will help the players to develop sustainability in long rallies of real match situations whereas for men's singles it is suggested to emphasise medium volume high intensity endurance training. During a multishuttle drill session the coaches are advised to involve higher frequency of shuttle feeding to mix doubles and men's doubles format players since in these formats of play it is found that the players play higher number of rallies in shorter duration. Though the researcher could not establish any relationship between head to head record and ranking difference with point difference of the match; it was found that for these two variables the difference among winners and losers was significant. Therefore, the researcher also suggests some psychological preparation to the lower ranked or lower head to head winner player before competing in such match.

Though the research was carried out under some limitations regarding availability of raw data, the researcher tried his best to draw out the best possible results out of the

available match reports of the tournament. However it is admitted that the area of research could have been bigger if the researcher would have got the chance to explore the raw data of the whole tournament.

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