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Different Strokes: Winning Strategies in Women's (and Men's) Big Bash Cricket.*

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Abstract

We analyse winning strategies in the Australian Women's Big Bash Cricket League (WBBL). Our objective is two- fold. First such analysis has potential implications for fan interest, team selection and recruitment. While several studies have analysed winning strategies in men's cricket we are unaware of any such studies for women's cricket. Second, comparing winning strategies in the WBBL and the men's Big Bash League (MBBL) enables us to test the hypothesis that women perform less well than men under pressure. The two competitions are (almost) identical in all aspects other than gender. We find no evidence that play in the women's game is objectively less exciting than then men's game. In fact, we find some evidence that more attacking play is more likely to win in the woman's competition than in the men's.

Keywords: Sports; Productivity.

JEL Codes: Z23; D24.

1 Introduction

We analyse winning strategies in the Australian Women's Big Bash Cricket League (WBBL). As Cannonier, Panda, and Sarangi (2015) point out, such analysis may

*We are grateful to participants at the 2023 Gijom Sports Economics and ESEA conferences for comments. All the remaining errors are ours.

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have implications for fan interest and be important for team selection and recruitment. In particular, it may have implications in relation to the recruitment of overseas international marquee players. Second, Women's professional sport has generally been underrated, with lower fan bases and lower player salaries. Experimental studies suggest women may perform less well under pressure than men (Leeds, 2019). If true, it is conceivable that women may adopt more defensive or conservative playing strategies that in turn make the game less entertaining for spectators. Comparing winning strategies with those in the men's Big Bash League (MBBL) enables us to test this hypothesis. The underlying assumption being that fans prefer attacking over defensive playing strategies.

In order to examine this hypothesis, we need an environment where the men and women play under circumstances as alike as possible in all ways other than gender. The Big Bash leagues provide an ideal example. Since 2015, the eight professional franchises have fielded both men's and women's teams. The games are played under the same set of rules, providing the ideal environment within which we can examine whether winning strategies differ across leagues and whether, in particular, women players have an incentive to adopt less entertaining modes of play.

Our paper adds to the literature in two ways. First, while there have been many studies of winning strategies in men's cricket, we are unaware of any such studies in respect of the women's game. Second, several studies have used evidence from individual sports to test the hypothesis that women perform less well under pressure than men but Böheim, Freudenthaler, and Lackner (2016) is the only study that we are aware of involving a team sport.

Initially we find some slight evidence that women's play is less aggressive than men's. However the magnitude of the effect, while statistically significant, is slight. Furthermore, it disappears once we control for confounding factors in a formal econometric model. We find that the combination of strategies that is likely to win a match in the WBBL is almost the same as those that are likely to win a match in the Men's Big Bash League (MBBL). In fact, if anything, women seem to have a slightly stronger incentive then men to adopt a more attacking style of play. Thus, any differences in the levels attendance or salaries are likely due to non-play factors.[1]

The rest of the paper proceeds as follows. Section 2 provides a brief overview of the WBBL. Section 3 reviews the literature on winning strategies in sport. Section 4 provides a first look at the data that suggests that women's play favours less attacking strategies. Section 5 shows that this result disappears and even reverses

[1]Musto, Cooky, and Messner (2017) claim that poor TV coverage negatively affects interest in women's sport. Broadcasters, however, devoted the same level of resources in terms of cameras etc. to WBBL as applied to MBBL games (Barrett, 2015, December 21).

when we use a formal econometric model to control for confounding factors. Section 6 concludes.

2 WBBL – A Brief History

Cricket is characterised by a high degree of product differentiation. Traditional "first-class" matches are played over several days, with international (Test) matches lasting up to five days. English cricket introduced one-day matches in the early 1960s and this format quickly spread to other cricket-playing nations. In 2003, the England and Wales Cricket Board (ECB) introduced a new, even shorter, match format known as Twenty20 or T20. T20 matches involve each team having a maximum of twenty overs to bat (compared to 50 overs in one day matches) and typically last approximately three hours.[2] T20 was aimed at attracting a new audience including women and families (Agur, 2013). The format proved quite successful drawing large attendances and again quickly spread to other cricket-playing nations.

Apart from New Zealand, however, women's T20 cricket leagues took longer to emerge. Cricket Australia introduced the Women's National T20 Cup in 2009/10, although initially this involved mainly exhibition matches. In 2015, Cricket Australia launched the WBBL with the objective of increasing female participation and providing a career structure for players (Mondal & Rampersad, 2020).[3]

The WBBL, like the male equivalent, involves eight team franchises, although initially there were doubts as to whether there was a sufficient number of quality women players. At first teams involved a mix of amateur and professional players and "...the gulf in class...between professionals and amateurs was often vast" (MacPherson, 2016, 11 February). Franchises followed through on their "one club, two teams" message. The women's teams stayed in hotels of equal prestige and had access to the same array of support staff as the men *(ibid.)*. Initially the WBBL was played in December-January – the same as the MBBL. A higher proportion of WBBL matches were played at secondary venues while women's salaries initially were much lower.

In 2019 the WBBL was re-scheduled from December-January to October-November.[4] Cricket Australia claimed that the move was designed to establish the WBBL on a stand-alone basis.[5] A downside of this re-scheduling was that batting conditions are generally less favourable compared to December-January as pitches

[2]An over is six balls, which means that in T20 each team has a maximum of 120 balls, from which it has to accumulate as many runs as possible.

[3]There is also a 50 overs a side women's league known as the Women's National Cricket League.

[4]The MBBL continues to run in December-January.

[5]During its initial four seasons approximately 20% of WBBL matches were played prior to MBBL matches.

tend to be softer and slower. On the plus side, however, the re-scheduling placed the WBBL between the end of the Australian Rules Football season and the start of the men's cricket season, providing an opportunity for increased TV coverage.

> "The WBBL quickly went from a competition that had a few professionals and a lot of enthusiastic amateurs getting paid pocket money to a serious professional sporting competition." (Lawson, 2019, January 26)

Table 1 illustrates how WBBL player salaries have increased dramatically, delivering on the objective of providing a career structure for women cricketers.

Table 1: Salaries of Australian Women Cricketers (A$)

Season	Domestic player		National player	
	Minimum	Average	Minimum	Average
2015/16	10,000	13,000	19,000	34,000
2016/17	18,000	22,000	40,000	52,500
2017/18	35,951	55,000	72,076	94,600
2022/23	49,172	65,660	88,485	111,775
2023/24	71,945	111,192	110,606	139,719

Excludes match appearance fees, marketing payments, and prize money. Domestic players are players with a contract with both a WBBL and a Women's National (50 Over) Cricket League team. National players are players on Cricket Australia National contracts. National player salaries do not include players' WBBL contracts. Source: `https://en.wikipedia.org/wiki/Women\%27s_Big_Bash_League`

3 Literature Review

Our working hypothesis is that winning strategies might differ across the two gendered leagues. In particular, women may be incentivised to adopt playing strategies that are more conservative and therefore less entertaining. We maintain the assumption that, in general, fans find more attacking/aggressive play more desirable.

Our investigation builds upon a substantial literature that analyses differences in performance between winning and losing teams across many sports. Hunter and O'Donoghue (2001), for example, analyse the 1999 Rugby World Cup. Boscá, Liern,

Martínez, and Sala (2009) present evidence on attacking and defensive efficiency in Italian and Spanish football. Ortega et al. (2015) consider differences between winning and losing teams in the Six Nations Rugby Championship. Kharratzadeh (2017) provides evidence for English Premier League Soccer, while Delbianco, Fioravanti, and Tohmé (2021) analyse winning strategies in English Premiership Rugby.

There have been many studies analysing the contribution of batting, bowling and fielding inputs to winning (men's) cricket matches. Many of the earlier papers focused on longer match formats and indicated that different strategies were more effective in different match formats and in different countries. The latter result may reflect differences in pitch conditions between countries. As far as the authors are aware, there have been no studies of winning strategies in women's cricket.

Schofield (1988) found that bowling had greater impact on match success than batting in one and three day matches in England. Bairam, Howells, and Turner (1990b) reported that a combination of attacking batting combined with defensive bowling maximised chances of winning in Australia whereas batting was marginally more important than bowling in New Zealand. Brooks, Faff, and Sokulsky (2002), using an ordered response model, found that match outcomes were largely explained by simple measures of batting and bowling inputs. Lohawala and Rahman (2018) concluded that defensive batting and attacking bowling were important for winning five-day Test matches but a balance of defensive and attacking batting and bowling were required for success in one day internationals (ODIs).

Several studies have analysed player valuations in the Indian Premier League (IPL) player auctions.[6] Parker et al. (2008) reported that the percentage of runs scored in fours or sixes did not appear to influence player valuations in the initial IPL player auction.[7] Subsequently, Depken and Rajasekhar (2010) observed little change over time in the value attached to runs, wickets and matches played by players in the auction. Swartz (2011) found that an ability to score fours and sixes was more highly valued in T20 than in one day matches.

Depken and Rajasekhar (2010) concluded that T20 requires different strategies and tactics to five-day Test matches and that it also favours a more attacking style than (50 over) one-day matches. Similarly, Swartz (2011) argues that T20 is "markedly different" from other cricket formats. Davis, Perera, and Swartz (2015) suggest that teams batting second in T20 matches wait too long to increase their level of batting aggressiveness. Cannonier et al. (2015) report that attacking batting and bowling represent the best strategies for winning both fifty over and

[6]The men's IPL T20 league was launched in 2008 but a women's league was only introduced in 2023.

[7]A four is scored if the batter hits the ball to the boundary. A six is scored if the ball crosses the boundary without first touching the ground. Fours and sixes are the cricketing equivalent of home runs in baseball.

T20 international matches. In contrast, they find that a combination of attacking batting and defensive bowling was more successful in the IPL. They suggest it "might be that IPL teams lack the skill set and resources to pursue attacking bowling". Given that the IPL is one of richest sports leagues in the World, this explanation seems unlikely. The fact that pitches in India traditionally do not favour quicker bowlers may represent a more likely explanation.

Several experimental studies suggest women perform less well under pressure than men (Leeds, 2019). Multiple studies have used sports to provide real world evidence on this. Almost all this literature relates to individual sports. Studies of tennis and golf have yielded mixed results (Gilsdorf & Sukhatme, 2008, 2013; Hill, Hanton, Fleming, & Matthews, 2009; Krumer, Rosenboim, & Shapir, 2016; Paserman, 2023). Results differ between different track and field athletics events (Böheim & Lackner, 2015; Frick, 2011; Frick & Scheel, 2013). The only team sport example of which the authors are aware, is Böheim et al. (2016) who found that women basketball players were more risk averse than their male counterparts in NBA. Leeds (2019) suggests alternative explanations arguing that their results may reflect strong defensive play by the opposition or reflect the decisions of (male) coaches rather than players.

Whether women perform less well under pressure may also have direct consequences for women's sports.

> "If women respond to pressure-filled situations with conservative or sloppy play, the competitions will be less appealing to fans and sponsors."

Leeds (2019)[p.516].

4 Winning Strategies: A First Look

Our objective is to identify the combination of strategies that increase the chances of winning and to see if these differ across the gendered leagues. To this end, we obtained data on 448 WBBL matches and 384 BBL matches spanning eight seasons from 2015/6 to 2022/3. The BBL had fewer matches before 2018/9. After dropping the 35 matches that were stopped due to rain and the limited number of tied matches we are left with a sample of 737 matches.[8] For each match we observe the outcome, and the playing inputs for each of the two teams. Table 2 lists the key variables and their definitions.

There are many potential ways to measure playing strategies in cricket. Following Brooks et al. (2002); Cannonier et al. (2015); Lohawala and Rahman (2018), we

[8]Match details are from `www.espncricinfo.com`; odds data from `www.oddsportal.com`

Table 2: Key Variables

Variable	Description	Attacking/Defensive
WON	1 if team won	
BOUND	% of total runs due to 4s and 6s	Attacking batting
NBR	% of total runs from non-boundaries excluding extras	Defensive batting
OPWO	Wickets per over (bowling) as % overs bowled	Attacking bowling
OBOUND	% of total opposition runs due to 4s and 6s	Defensive bowling
FIELD	Catches, stumpings & run outs as % total wickets taken	
STR	Runs per 100 balls (Strike Rate)	Attacking batting
OSTR	Opp. Runs per 100 balls (Strike Rate)	Defensive bowling
HOME	Home Team	
TOSS	Won Toss	
BAT1	If team batted first	
WINPROB	Win Probability	
OWINPROB	Opposition Win Probability	
OCT	WBBL Matches played in October/November	
EARLY	Match started before noon	

adopt the now standard model: attacking bowling; defensive bowling; attacking batting; and defensive batting. We consider boundary runs as attacking batting. Hitting for the boundary represents an attempt to accumulate runs more quickly with the greater risk that a batter may get out. Similarly the proportion of runs coming from non-boundaries is a measure of defensive play i.e. the slow accumulation of runs while putting the batter at less risk of getting out. Thus the percentage of runs scored as boundaries reflects batting aggression, while the proportion of runs from non-boundaries indicates defensive play.

We follow Cannonier et al. (2015), and measure the aggression of bowling by the number of wickets taken per over (i.e. per 6 balls). A high value for this variable indicates, other things being equal, that a team aggressively tries to bowl the opposition's batters out as quickly as possible. This comes at the risk of conceding more runs. A more defensive bowling strategy would involve trying to minimise the opportunities for the opposition's batters to score boundaries. Thus we follow Cannonier et al. (2015) and measure a team's defensive bowling by the proportion of boundaries scored by the opposition.

We also measure the fielding strategy of a team by the percentage of opposition's batters put out by fielding (as opposed to those bowled out, or out "leg before wicket" which are due to the bowler directly). We make no distinction between defensive and attacking fielding.

In T20, the total number of balls faced by each team is limited to 120. This potentially changes the incentives for both teams to choose more attacking strategies. For example, in terms of batting there would appear to be an incentive to accumulate runs more quickly by going for boundaries. In more traditional formats for cricket, with less constraint on total number of balls, a defensive strategy of accumulating low risk runs, avoiding risky boundary shots while tiring out the opposition bowlers, may be optimal. Cannonier et al. (2015) showed that more attacking batting was indeed associated with winning in T20 cricket more so than in longer format Test cricket.

Summary statistics for the strategy variables are reported in table 3. Gender differences in the sample means are evident: the men's competition tends to feature slightly more attacking play than women's. Although the difference is small, it is statistically significant.[9] We look at fielding as measured by the wickets due to fielding (i.e. run outs, stumping and catches). Again there is a statistically significant difference between the league but the magnitude of this difference is relatively small. On both these measures it can be seen that women's league seems to favour less attacking play.

Traditionally the literature on cricket has measured batting performance by the

[9]The proportion of boundary and non-boundary runs do not sum to 1 as we exclude extras, i.e. runs due to wides and no balls, for example.

strike rate and the measure is widely used in the sport itself. We follow Cannonier et al. (2015) and Schofield (1988) in using the strike rate as a robustness measure, although we define the strike rate as the runs scored per hundred balls whereas previous studies have used a more traditional measure of runs per over (six balls).[10] Other things being equal, a higher strike rate shows more attacking play and more risk taking. Once again there is a statistically significant difference between the two leagues with the men playing more aggressively/risky.

Table 3: Summary Statistics by League

	(1) All	(2) MBBL	(3) WBBL	(4) Diff.
BOUND	0.48	0.50	0.46	0.05***
	(0.11)	(0.09)	(0.11)	
NBR	0.47	0.45	0.48	-0.03***
	(0.10)	(0.09)	(0.11)	
OWPO	1.64	1.78	1.51	0.27***
	(1.07)	(1.35)	(0.69)	
FIELD	0.74	0.76	0.72	0.04***
	(0.22)	(0.20)	(0.24)	
SR	1.24	1.35	1.15	0.20***
	(0.24)	(0.22)	(0.21)	
Observations	1474	710	764	1474

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Group means and standard deviations (in parentheses).

Data from www.espncricinfo.com & www.oddsportal.com

Overall the difference in means give some credence to the notion that women's cricket is more conservative in play. To the extent that spectators like attacking play in general and boundary scores in particular, this suggests that the men's game might be more entertaining.

Our objective is to identify the combination of strategies that increase the chances of winning and to see if these differ across the gendered leagues. We break down the strategies followed by winning and losing teams for both leagues. Table 5 shows the breakdown for the men's league and table 4 shows the breakdown for the women's league. It is clear that both leagues favour attacking play (boundaries, opposition wickets taken) as it tends to be a winning strategy. The difference

[10]By definition The team with the highest strike rate must necessarily win a T20 match if all the balls are bowled. The strike rate was lower for the winning team in only 2 matches in our data set.

between winner and loser is statistically significant in both leagues. Interestingly the magnitude difference in the women's case is similar to that of the men's case. Although as we have already seen the absolute level of attacking play appears to be higher in the men's game.

Table 4: Winners vs Losers: WBBL

	Winners		Losers		Diff.
	Mean	Stn. Dev.	Mean	Stn. Dev.	
BOUND	0.50	0.10	0.41	0.11	0.09***
NBR	0.44	0.09	0.53	0.10	-0.08***
OWPO	1.91	0.55	1.10	0.55	0.82***
FIELD	0.72	0.19	0.72	0.27	-0.00
SR	1.24	0.19	1.05	0.19	0.18***
Observations	382		382		764

T-test of difference in sample means
* p<0.10, ** p<0.05, *** p<0.01.

Table 5: Winners vs Losers: MBBL

	Winners		Losers		Diff.
	Mean	Stn. Dev.	Mean	Stn. Dev.	
BOUND	0.53	0.08	0.47	0.09	0.06***
NBR	0.42	0.08	0.48	0.09	-0.06***
OWPO	2.22	1.73	1.33	0.52	0.89***
FIELD	0.75	0.16	0.77	0.23	-0.01
SR	1.45	0.19	1.24	0.20	0.20***
Observations	355		355		710

T-test of difference in sample means
* p<0.10, ** p<0.05, *** p<0.01.

Of course, all these variables are noisy ex-post measures of the latent intent variable in which we are really interested. For example the proportion of runs scored by boundaries is a function of the decision to bat aggressively. But is also a function of, for example, the weather, the nature of the pitch, quality of both teams and differences in scheduling of matches. To control for these confounding factors, we need a formal econometric model.

5 An Econometric Model of Winning Strategies

The contribution of various strategies of play to teams ability to win has been widely examined in the sports economics literature. We adopt a production function approach where we model the output (winning the match) as a function of inputs (various playing strategies). We follow closely Cannonier et al. (2015) and Lohawala and Rahman (2018) and specify that a team's probability of winning is some function of batting, bowling and fielding strategies of both it and the opposition team as in equation (1). We further differentiate between attacking and defending strategies in both batting and bowling. Fielding is not defined as attacking or defensive.

$$Win = f\Big(Batting, Bowling, Fielding\Big) \tag{1}$$

In addition the match outcome will depend on other match and team level characteristics such as pre-match team quality, whether the team bats first or second, home team bias (if any), and weather.[11] We proxy team quality by win probabilities calculated from betting odds.[12] Unfortunately we have no direct measure of the quality of the playing surface so we control for differences in physical quality of the pitch by using venue fixed effects. Summary statistics for these ancillary variables are shown in table 6. Note that there is the only noticeable difference in the sample means is for the two scheduling variables which only affected the WBBL.

The literature is split on the functional form of equation (1). Bairam, Howells, and Turner (1990a); Bairam et al. (1990b); Schofield (1988) use OLS. Brooks et al. (2002); Lohawala and Rahman (2018) apply a model along the lines of equation (1) to data from international test cricket using a probit estimate. Cannonier et al. (2015) use the conditional logit to difference out team and match fixed effects.

We apply an OLS model to equation (1) on the grounds that coefficients are easier to interpret. As each match produces two observations (one for the winning and one for the loosing team) there errors are obviously not independent, so we correct the standard errors by clusters at the match level. As a robustness check we also present probit estimates.[13]

Our objective is to identify the combination of strategies that increase the chances of winning and to see if these differ across the gendered leagues. Table 7 shows the estimates for various strategies for the women's league. Table 8 shows the corresponding result for the men's league. All regressions include venue fixed

[11]Which team bats first is decided by a coin toss, with the winning team captain having the choice to bat or bowl first. Traditionally it was thought that batting first conferred an advantage.

[12]The mean of the home ground variable is not 0.5 because some games are played at neutral venues. The average win probability is not 0.5 because of the bookmakers margin.

[13]We also have conditional logit estimates that are available on request. They are qualitatively similar to the probit estimates.

Table 6: Summary Statistics by League

	(1) All	(2) MBBL	(3) WBBL	(4) Diff.
BOUND	0.48	0.50	0.46	0.05***
	(0.11)	(0.09)	(0.11)	
NBR	0.47	0.45	0.48	-0.03***
	(0.10)	(0.09)	(0.11)	
OWPO	1.64	1.78	1.51	0.27***
	(1.07)	(1.35)	(0.69)	
FIELD	0.74	0.76	0.72	0.04***
	(0.22)	(0.20)	(0.24)	
SR	1.24	1.35	1.15	0.20***
	(0.24)	(0.22)	(0.21)	
WINPROB	0.51	0.53	0.48	0.05***
	(0.19)	(0.17)	(0.20)	
HOME	0.41	0.45	0.38	0.06**
	(0.51)	(0.53)	(0.49)	
TOSS	0.50	0.50	0.50	0.00
	(0.50)	(0.50)	(0.50)	
BAT1	0.50	0.50	0.50	0.00
	(0.50)	(0.50)	(0.50)	
WINTOSS*BAT1	0.21	0.19	0.23	-0.03
	(0.41)	(0.40)	(0.42)	
OCT	0.24	0.00	0.47	-0.47***
	(0.43)	(0.00)	(0.50)	
EARLY	0.13	0.01	0.25	-0.24***
	(0.34)	(0.09)	(0.43)	
Observations	1474	710	764	1474

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Group means and standard deviations (in parentheses).

Data from www.espncricinfo.com & www.oddsportal.com

effects to control for pitch conditions and season fixed effects to control for any trends in play or outcomes.

The BOUND coefficient which measures the proportion of runs due to boundaries is highly significant and has the expected positive sign for both leagues in all three cases. This indicates that attacking batting increases teams chances of winning in both WBBL and MBBL. The risk with attacking batting is that the batter will be more likely to lose their wicket. In contrast, in all cases NBR, which measures defensive batting has a negative and significant impact on win probability. The magnitude of the effect is equivalent to the magnitude of the boundaries effect but is of the opposite sign. Defensive batting play, may score runs but tends not to win matches.

Attacking bowling (OWPO) is also statistically significant in both leagues in all of the relevant regressions. Dismissing the opposition batters quickly by attacking bowling increases the probability of winning in both leagues. Interestingly the magnitude of the coefficient is much higher for the women's leagues suggesting that the returns to attacking bowling are higher in the women's game.

The problem with aggressive bowling is that it runs the risk of more boundaries being conceded. So defensive bowling, not conceding boundaries, might also matter. We can see that in each case the coefficient for opposition boundaries is negative and significant, indicating that defensive bowling reduces a teams chances of winning in both leagues.

Although not the prime focus of the paper, it is worth noting the coefficients on the control variables. The fielding variable is insignificant in all but one regression. This is surprising but mirrors the result in Cannonier et al. (2015). They reason that it is due to the fact that their variable (constructed as ours) captures only the wickets that fall directly due to fielding. It does not capture the effect of good fielding on creating better chances for the bowler to dismiss a batter directly. Perhaps surprisingly the win probability of neither team matters in both leagues. There is also no evidence of home bias in any regression. This is in contrast with de Silva and Swartz (1997) but consistent with Cannonier et al. (2015). Winning the toss and/or choosing to bat first have no effect in contrast to traditional perceived wisdom but in accordance with recent literature (see for example, Sacheti, Gregory-Smith, & Paton, 2016). Also the scheduling variables (morning start, Oct./Nov. match) that affect the WBBL only, have no effect on winning probability. We would not expect them to have an effect on win probability as they are match level characteristics and one team must win the match. They are included because they may be correlated with the choice of optimal strategy.[14]

[14]For example, batting conditions are generally less favourable in Oct./Nov. and early morning. So it is of interest to see if such scheduling may have affected the style of play. If conditions are not conducive to attacking batting then maybe it would be optimal for WBBL teams to play

One interesting comparison between the two leagues is that the R^2 for the men's league is always lower the the R^2 in the corresponding regression in the women's league. This suggests that the strategy variables in this study explain much less of the variation of results across the men's league. Why this should be the case is not immediately clear. It might reflect a great variance in team quality (lack of competitive balance). Nevertheless, it is clear that the strategies that win in the men's game, win also in the women's game – only more so. We can also follow Cannonier et al. (2015) and use the R^2 to check which combinations of strategies explains most of the variation in winning. We exclude the regressions containing the strike rate (columns 5-9) as theses will have a higher R^2 almost by definition. For the men's game, the combination of attacking batting and defensive bowling (column 2) seems best. These results differ from Cannonier et al. (2015) who found attacking batting and bowling optimal in T20 internationals but attacking batting and defensive bowling optimal in the Indian Premier League (IPL).

For women, column 1 is best i.e. the combination of attacking bowling and batting. The difference is once again slight. Nevertheless, this clearly cannot be take as evidence that conservative play is the most effective strategies in the women's game.

As a robustness check we follow Lohawala and Rahman (2018) and present probit estimates of the same specification in Tables 9 and 10. The coefficients of the probit and OLS models are not directly comparable. But we can see the same pattern in the probit results. attacking batting and bowling pays off in both leagues. If anything the point estimates suggest that aggression matters more in the women's league. But the magnitude of the difference is not significant. In addition, selecting strategy combinations on the basis of (pseudo) R^2 suggests that attacking batting and bowling is the most effective in both leagues. This is slightly different from the OLS model. But once again, it does not support the proposition that women play more conservatively than men.

more defensively.

Table 7: OLS WBBL

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
BOUND	1.598***	2.036***			2.245***				
NBR			-1.678***	-2.151***		-2.338***			
OWPO	0.397***		0.398***				0.393***		
OBOUND		-2.032***		-2.040***				-2.250***	
FIELD	-0.00878	-0.0481	-0.0164	-0.0582	0.00917	-0.00176	-0.0495	-0.104*	-0.0499
SR							0.979***	1.301***	1.575***
OSR					-1.291***	-1.277***			-1.569***
WINPROB	0.0521	0.166*	0.0586	0.174*	0.0804	0.0930	0.0430	0.134	0.00291
OWINPROB	-0.0842	-0.166*	-0.0928	-0.176*	-0.128	-0.143*	-0.0393	-0.0844	-0.000866
HOME	0.0257	0.0256	0.0197	0.0179	0.0256	0.0176	0.0184	0.0135	0.00834
TOSS	-0.0237	-0.0297	-0.0334	-0.0421	0.000220	-0.0136	-0.0248	-0.0315	0.00499
BAT1	0.0277	0.0106	0.0208	0.00196	-0.00149	-0.0118	-0.00737	-0.0302	-0.0468
WINTOSS*BAT1	0.0266	-0.00344	0.0492	0.0253**	-0.0329	-0.00138	0.0481	0.0275	-0.00174
OCT	0.0497	-0.000747	0.0602	0.0126	-0.0934	-0.0779	0.119	0.0919	-0.00150
EARLY	0.0162	0.00254	0.00755	-0.00848	0.0196	0.00750	0.00345	-0.0158	0.000876
Constant	-0.765***	0.534***	0.792***	2.529***	0.957***	3.121***	-1.107***	0.121	0.548***
Observations	764	764	764	764	764	764	764	764	764
Adjusted R^2	0.43	0.32	0.42	0.32	0.40	0.39	0.46	0.40	0.54

All Regressions include venue and season fixed effects.

Standard errors (suppressed) are clustered by fixture.

* p<0.10, ** p<0.05, *** p<0.01.

Data from www.espncricinfo.com & www.oddsportal.com

Table 8: OLS MBBL

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
BOUND	2.031***	2.067***			2.327***				
NBR			-2.048***	-2.096***		-2.339***			
OWPO	0.120**		0.120**				0.114**		
OBOUND		-2.051***		-2.068***				-2.313***	
FIELD	-0.137	-0.0869	-0.122	-0.0714	-0.0464	-0.0299	-0.142*	-0.0883	-0.0410
SR							1.108***	1.222***	1.421***
OSR					-1.218***	-1.210***			-1.418***
WINPROB	0.114	0.0593	0.106	0.0508	0.113	0.104	0.0124	-0.0537	-0.00973
OWINPROB	-0.0328	-0.0502	-0.0623	-0.0805	0.0591	0.0246	-0.0869	-0.108	0.0107
HOME	0.0171	0.00609	0.0179	0.00684	-0.00499	-0.00382	0.0168	0.00350	-0.0102
TOSS	-0.0173	0.0223	-0.000258	0.0398	0.0367	0.0559	-0.00969	0.0326	0.0510
BAT1	-0.0548	0.0394	-0.0387	0.0564	-0.00890	0.00962	-0.109**	-0.0155	-0.0800**
WINTOSS*BAT1	0.0792**	-0.000694	0.0612*	-0.0194*	-0.00540	-0.0257	0.0871**	0.00429	-0.000328
Constant	-0.695***	0.517***	1.251***	2.511***	0.922***	3.140***	-1.070***	0.137	0.546***
Observations	710	710	710	710	710	710	710	710	710
Adjusted R^2	0.20	0.22	0.19	0.21	0.36	0.35	0.30	0.36	0.56

All Regressions include venue and season fixed effects.

Standard errors (suppressed) are clustered by fixture.

* p<0.10, ** p<0.05, *** p<0.01.

Data from www.espncricinfo.com & www.oddsportal.com

Table 9: Probit WBBL

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Team Won									
BOUND	8.371***	8.113***			11.31***				
NBR			-8.613***	-8.465***		-11.23***			
OWPO	1.866***		1.842***				2.089***		
OBOUND		-8.080***		-8.066***				-11.38***	
FIELD	0.151	-0.222	0.161	-0.203	0.157	0.163	0.118	-0.565**	-0.740
SR							5.980***	6.844***	33.58***
OSR					-6.768***	-6.475***			-33.63***
WINPROB	0.284	0.757**	0.258	0.706**	0.388	0.288	0.320	0.929**	0.808
OWINPROB	-0.516	-0.757**	-0.508	-0.751**	-0.884**	-0.823**	-0.287	-0.449	-0.432
HOME	0.105	0.105	0.0802	0.0932	0.147	0.127	0.0873	0.0673	-0.196
TOSS	-0.173	-0.117	-0.211	-0.164	-0.0914	-0.141	-0.251	-0.138	-0.376
BAT1	0.0537	-0.0378	0.0175	-0.0760	-0.149	-0.200	-0.149	-0.160	0.205
WINTOSS*BAT1	0.114	-0.00732	0.236	0.126***	-0.0280	0.119	0.308	0.0309	0.0175
OCT	0.291	-0.0155	0.472	0.119*	-0.768***	-0.573**	0.934	0.780***	-0.161
EARLY	0.189*	0.0165	0.173*	-0.0250	0.135	0.0807	0.106	-0.106	-0.0144
Constant	-6.478***	0.184	1.524***	7.988***	2.603***	12.89***	-9.696***	-2.159***	0.732
Observations	764	764	764	764	764	764	764	764	764
Log lik.	-281.4	-343.4	-284.3	-345.7	-284.7	-292.7	-251.1	-283.4	-62.97
Psuedo R2	0.469	0.351	0.463	0.347	0.462	0.447	0.526	0.465	0.881

All Regressions include venue and season fixed effects.

Standard errors (suppressed) are clustered by fixture.

* p<0.10, ** p<0.05, *** p<0.01.

Data from www.espncricinfo.com & www.oddsportal.com

Table 10: Probit MBBL

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Team Won									
BOUND	7.576***	6.898***			10.39***				
NBR			-7.636***	-6.978***		-10.35***			
OWPO	1.537***		1.526***				1.897***		
OBOUND		-6.830***		-6.817***				-10.33***	
FIELD	-0.254	-0.242	-0.172	-0.181	-0.0856	0.0197	-0.262	-0.254	-0.0647
SR							5.272***	5.382***	32.91***
OSR					-5.362***	-5.256***			-32.92***
WINPROB	0.537**	0.184	0.504**	0.160	0.484**	0.432*	0.292	-0.265	-0.269
OWINPROB	-0.365	-0.163	-0.461**	-0.259	0.288	0.155	-0.764***	-0.468**	-1.087**
HOME	-0.0159	0.00150	-0.00841	0.00725	0.00718	0.0196	0.0383	0.0405	-0.207
TOSS	-0.0751	0.0848	-0.0273	0.137	0.147	0.235	-0.112	0.0995	-0.217
BAT1	-0.235	0.123	-0.185	0.173	-0.0150	0.0677	-0.511***	-0.0769	-0.0541
WINTOSS*BAT1	0.395**	-0.000606	0.338**	-0.0541	-0.0506	-0.153	0.594***	0.0513	0.0159
Constant	-6.344***	0.0222	0.935**	6.624***	1.673***	11.39***	-9.978***	-1.614***	1.009
Observations	710	710	710	710	710	710	710	710	710
Log lik.	-314.2	-385.3	-318.9	-389.5	-304.1	-311.9	-252.2	-303.7	-53.16
Psuedo R2	0.362	0.217	0.352	0.209	0.382	0.366	0.488	0.383	0.892

All Regressions include venue and season fixed effects.

Standard errors (suppressed) are clustered by fixture.

* p<0.10, ** p<0.05, *** p<0.01.

Data from www.espncricinfo.com & www.oddsportal.com

6 Conclusion

Our objective was to analyse winning strategies in the WBBL and to test whether WBBL teams played more conservatively than their male peers. We chose these two leagues as they are identical in almost all aspects but for the gender of the players. Simple differences across leagues suggest some slight evidence in favour of this hypothesis. However a more formal econometric model controlling for various confounding factors did not produce this result. We showed that attacking batting and bowling tends to dominates defensive play in both the WBBl and MBBL. If anything, there is some evidence that a combination of attacking bowling and batting is even more effective in the women's competition than in the men's. In particular, there is no evidence of conservative play in women's cricket. To the extent that the entertainment value of sport is enhanced by more attacking and less conservative play, the remaining differences in perceived entertainment value of women's and men's cricket must be based on non-play factors.

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