

Male and Female Betting Behaviour: New Perspectives

A.C. Bruce

University of Nottingham

J.E.V. Johnson

University of Southampton

This paper uses an analysis of betting decisions made in offcourse betting offices in the UK to explore differences between the nature of male and female betting behaviour. Specifically gender differences in levels of performance, propensity for risk taking and levels of confidence in betting decisions are considered. The results provide some evidence for greater risk propensity amongst male bettors, lower levels of female bettor confidence in their choices and some degree of performance advantage for women bettors. The results are discussed in relation to previous research; some of the apparent discrepancies are explained in terms of differences in motivational focus and gender differences in definitions of risk-taking and 'successful' performance. In this context areas for future research are highlighted.

There exists a considerable literature relating to differences between the nature of male and female decision-making under uncertainty. Popular issues in the decision-making literature have included gender differences in performance, risk taking and degrees of confi-

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Send reprint requests to A.C. Bruce, Ph.D., School of Management & Finance, University of Nottingham, University Park, Nottingham NG7 2RD, United Kingdom.

dence in decisions made under uncertainty. Betting involves decision-making under uncertainty and the aim of this paper is to specifically compare the betting behaviour of men and women engaged in gambling on the outcomes of horseraces in UK off-course betting offices. The following brief review of the literature on gender differences in decision-making forms the basis for the hypotheses addressed which relate specifically to comparative betting behaviour of males and females.

Earlier work in the area generally supported the superior performance of men (e.g. Priest and Hunsaker, 1969). Recent studies, however, (Hudgens and Fatkin, 1985; Estes and Hosseini, 1988) indicate no significant differences between male and female decision makers. The decline of observed gender differences in decision quality (Masters and Meier, 1988) may partly reflect some adjustment in cultural norms resulting from the increased participation and status of women in political, commercial and industrial contexts and their consequent increased exposure to complex decision processes. Equally it may stem from methodological limitations of earlier work. For example Eagly (1978) observes:

studies examining sex differences have varied widely in the sensitivity of research designs, quality of sampling procedures, and reliability and validity of measuring instruments.

There is evidence to suggest that observed differences in decision performance may be attributable less to fundamental differences between the sexes than to other factors. These include the sex of the experimenter, the amount of time and information available to the decision maker, the presence of distracting stimuli (Priest and Hunsaker, 1969) and whether the decision was essentially male or female-orientated (e.g. Herschel, Wynne and Noel, 1991). In addition, research has suggested that problem-solving ability is more closely associated with sex-role rather than gender (Kelly, Wildman and Uney, 1982), an individual's personality being essentially 'masculine' (i.e. forceful, dominant) or 'feminine' (e.g. sensitive, tender).

In relation to the differential tendencies to take risk a general conclusion from the literature is that men have a higher propensity for risk-taking (see, for example, Keinan, Meir and Gome-Nemirovsky (1984), Hudgens and Fatkin (1985) and Levin, Snyder and Chapman

(1988)) than women. However, a few studies have indicated the absence of significant gender differences in risk-taking (e.g. Arenson, 1978) Coet and McDermott (1979) suggest these results may relate to their propensity to test for differences between the behaviours of male and female *children*. The significance of this lies in the cultural stereotyping to which adults have necessarily been exposed, which assigns positive value to risk-taking by males and negative value to risk-taking by females (see Slovic, 1966). As such, the absence of observable differences among young subjects is unsurprising.

Finally in relation to differential levels of confidence in making decisions there is strong evidence that women are less confident than men (e.g. Berry (1980); Nicholson and West (1988); Estes and Hosseini (1988)). A common explanation for observed confidence differences is that women's behaviour is affected by their insecurity within male-dominated decision-making organisations (see, for example, Nicholson and West, 1988). This factor would not, of course, explain lower confidence levels outside the organisational context, though societal stereotypes of the male as decision-maker would remain influential.

Much of the literature referred to above has explored gender differences in decision making in a general context. This study, however, specifically investigates male and female *betting* decisions. Betting decisions share important common features with other decisions made in an uncertain environment including assessment of risk, analysis of qualitative and quantitative information from a variety of sources and prediction of future events. As such the general literature discussed above is valuable in the formulation of hypotheses in relation to gender differences in gambling behaviour. A number of studies have demonstrated that superior returns can be earned by horserace bettors following particular betting strategies (e.g. Asch, Malkiel and Quandt (1984), Bolton and Chapman (1986)). In addition Ceci and Liker (1986) have shown that

expert handicapping was a cognitively sophisticated enterprise, with experts using a mental model that contained multiple interaction effects and non-linearity.

These findings together suggest that off-course betting can involve a considerable element of skill. This skill is reflected in the methods

used to assess each of the runners' previous form, to analyse and sift journalist opinion, to interpret moves in the betting market, to choose an appropriate price at which to back a horse etc. As indicated above the degree of skill exercised will be reflected in the betting strategy chosen and consequently in the degree of success achieved by a bettor.

In view of the literature discussed above, the current study is designed to test the following hypotheses:

- i) there is no difference between the performance of male and female bettors
- ii) male bettors engage in more risk propensivive behaviour than female bettors
- iii) females demonstrate less confidence in their betting decisions than males

In testing these hypotheses the current study enjoys a number of methodological advantages over earlier work into male/female decision-making. Most importantly, these relate to its analysis of *real* decisions made in a natural setting and in the absence of observation effects. These methodological features are discussed further below.

METHOD

Sample Design

A random sample of 50 betting offices throughout the UK, owned by Ladbroke Racing, the UK's largest off-course bookmaking organisation, was selected. Staff in these offices were asked to mark all bets placed by females during a one week period in 1991, without the knowledge of the bettor concerned. Each betting slip (see below) is uniquely identified by a code number and a random sampling procedure was devised to select a roughly similar size sample of male ($N = 2009$) and female ($N = 2015$) bets. The sampling system ensured that bets analysed were spread throughout each betting day of the seven day period; this together with the wide geographical spread of the betting offices surveyed significantly reduces the possibility of any two bets selected having been placed by the same bettor.

Dependant Measure

The basic dependant measures used in this study are obtained from the betting slips, which are submitted by bettors at the time of bet placement in a UK offcourse betting office. Betting slips provide detailed characteristics of each bet placed including the selection made, the stake wagered, the type of bet (single, accumulator, etc.) and the time the bet was placed. These are used to provide dependant measures of performance, risk taking and confidence.

Procedure

In testing hypothesis 1, that 'there is no difference between the performance of male and female bettors,' a variety of measures of performance are used. Success is measured by the percentage of bets and stakes placed which yield either some return or a profit. Here a 'return' constitutes the amount collected following a 'successful' bet irrespective of whether this sum exceeds the stake wagered. Where the amount collected does exceed the original stake this is defined as a profitable bet. Success is also measured by the ratio of returns to stake. Profitable bets using this measure yield a value greater than one.

In testing hypothesis 2, 'male bettors engage in more risk propensive behaviour,' the comparative popularity of different bet types is examined. Bet types are categorised into high or low risk according to the likelihood, other factors remaining constant, of their producing a return or a profit.

Single bets ('singles') generally involve the lowest risk, since a return depends on only one successful selection, whereas 'accumulators' require two or more successful selections and 'forecasts' require that the first and second horse in a particular race be correctly identified. 'Any-to-come' bets are 'accumulators' with built-in safeguards, whereby only part of the prior winnings is wagered on subsequent 'legs' of the bet. 'Multiples' involve a number of selections combined in 'accumulators' of varying complexity and/or where selections feature individually as 'singles'; these bets often provide consolation dividends if only one selection is successful. Both 'multiples' and 'any-to-come' bets might be regarded as medium risk bets with a greater chance of obtaining at least some return, other things being equal, than either 'accumulators' or 'forecasts' but with less chance of producing a profit

than 'singles'. Tote bets may represent any of the above bet types settled at odds determined by the parimutuel pool operating at the racetrack. This bet-type can represent varying degrees of risk.

The bet-types discussed above were also explored in greater detail to examine further the comparative risk propensity of males and females. The two most popular forms of 'forecast' bet involve the selection of the first and second horse to finish in a particular race, either in the correct order ('straight forecast') or in either order ('reverse forecast'). The first bet type, other things being equal, involves more risk, in terms of the chances of losing the stake wagered. A tendency to select 'straight forecasts' (cf. 'reverse forecasts') is, therefore, taken as an indication of more risk propensiveness behaviour. Examination of alternative varieties of 'accumulator' bets is also used to explore gender-based risk preferences. 'Doubles' and 'trebles+' accumulator bets require the selection of the winners of two races or more than two races respectively. Hence preference for 'trebles+' over 'doubles' is taken as an indication of greater risk preference.

A further dimension of risk relates to the distinction between 'win' and 'each-way' wagers. Betting to 'win' requires that the selection comes first in the chosen event in order to generate a return, whilst an 'each-way' bet generates a return if the selection is placed first, second or third. It seems reasonable, therefore, to suggest that a 'win' bet represents a 'riskier' wager in terms of the prospect of producing some return. As such a tendency to 'win' as opposed to 'each way' betting reflects a greater risk propensity.

Hypothesis 3, 'females demonstrate less confidence in their betting decisions than males,' is tested by comparing the staking levels of males and females. These are taken as an indicator of decision confidence in that they imply the degree of commitment that the subject is prepared to make to his/her decision.

RESULTS

Performance

The first set of results indicated in Table 1 examines the comparative performance of male and female bettors, variously measured.

Taken together, these results offer some support for hypothesis 1 in that there is no strong or consistent case for performance differen-

TABLE 1
Comparison of Male and Female Bet Performance

| <i>Performance Criteria</i> | | <i>Male</i> (<i>N</i> = 2009) | | <i>Female</i> (<i>N</i> = 2015) | |
|-----------------------------|--------------------------------|-----------------------------------|--------|-------------------------------------|--------|
| Bets | with a return ^a (%) | 11.7 | ** | 14.6 | |
| | with a profit ^b (%) | 5.5 | | 6.1 | |
| Stakes | with a return ^c (%) | 14.4 | ** | 19.7 | |
| | with a profit ^d (%) | 9.3 | | 9.2 | |
| Return/Stake | [S.D.] | 0.453 | [4.70] | 0.427 | [5.10] |

Note

^a number of bets (irrespective of stake size) producing a positive return (which may be less than the amount staked) divided by the total number of bets placed

^b number of bets (irrespective of stake size) producing a return greater than the amount staked, divided by the total number of bets placed

^c the total amount staked which produced a positive return, divided by the total amount staked

^d the total amount staked which produced a return greater than the amount staked, divided by the total amount staked

** $p < .01$, two-tailed (large sample test for difference between proportions, independent t-test for return/stake statistic)

tials between males and females. The percentage of bets and stakes wagered producing a profit are very similar for males and females and there is no significant gender difference in the ratio of returns to stakes. However, the number of bets and stakes wagered yielding a return suggest that the aggregate performance of women in terms of generating *some* return (though not a profit) is significantly superior.

Despite this apparent female superiority the return/stake ratio is higher for males (0.453) than females (0.427) though not significantly so. These results taken together suggest that men are placing bets which produce returns less often than women but which, on average, produce greater returns when they do win. This is supportive of hypothesis 2 since it suggests that men place riskier bets than females.

Risk Propensity

Tables 2 and 3 examine the comparative risk propensity of males and females by exploring the popularity of different bet types. Table 2 indicates that males bet more on 'singles' but there is little difference between the propensity for males and females to use 'forecasts,' 'accu-

TABLE 2
Comparison of Bet Type Preferences of Males and Females

| <i>Bet Type</i> | <i>Male</i> <i>N = 2009</i> | <i>Female</i> <i>N = 2015</i> |
|-----------------|--------------------------------|----------------------------------|
| 'Single' | Bets (%) ^a | 42.8 |
| | Stakes (%) ^b | 63.8 |
| 'Forecast' | Bets (%) | 8.4 |
| | Stakes (%) | 5.8 |
| 'Accumulator' | Bets (%) | 12.6 |
| | Stakes (%) | 7.6 |
| 'Any-To-Come' | Bets (%) | 5.5 |
| | Stakes (%) | 2.8 |
| 'Multiple' | Bets (%) | 25.8 |
| | Stakes (%) | 18.1 |
| 'Tote' | Bets (%) | 4.9 |
| | Stakes (%) | 1.9 |

Note

^a Represents the number of bets (irrespective of stake size) placed on singles divided by the total number of bets placed on all bet-types.

^b Represents the total amount staked on singles divided by the total stakes placed on all bet-types.

Bets: (i) Testing for equality of multinomial proportions (male v females):

$$X^2 = 67.69, df = 5, p < .01$$

(ii) + + sources of significant difference between male and female proportions where standardised residuals exceed ± 2 .

Stakes: ** Proportions of male and female stakes significantly different ($p < .01$) using a special case of ratio estimation.

mulators' or 'tote' bets. Females, however, appear more likely to use 'any-to-come' bets and 'multiples.' Table 3 offers clear evidence that males are more likely than females to choose 'doubles' rather than more complex 'accumulators,' bet significantly more on 'straight forecasts' rather than on 'reverse forecasts' and are significantly more likely than females to place their bets to 'win' rather than 'each-way.' Taken together, therefore, these results do not appear to offer clear support for Hypothesis 2.

Confidence

The third set of results, displayed in Table 4, indicate that males bet with significantly higher average stakes than women. In addition,

TABLE 3

Comparison of Male and Female Propensity to Select 'Straight' or 'Reverse Forecasts', 'Doubles' or 'Trebles +', and 'Win' or 'Each-Way'

| <i>Bet Type</i> | | <i>Male</i> | | <i>Female</i> |
|----------------------|-------------------------|-------------|----|---------------|
| 'Doubles' | Bets (%) ^a | 64.0 | ** | 53.4 |
| (v 'Trebles +') | Stakes (%) | 73.1 | ** | 46.0 |
| 'Straight Forecasts' | Bets (%) | 58.6 | ** | 21.4 |
| (v 'Rev. Fcsts') | Stakes (%) ^b | 80.3 | ** | 56.5 |
| 'Win' | Bets (%) | 60.2 | ** | 53.8 |
| (v 'Each-Way') | Stakes (%) | 68.2 | ** | 61.8 |

Note

^a Represents the number of bets (irrespective of stake size) placed on 'doubles' divided by the total number of bets placed on 'doubles' and 'trebles +' combined.

^b Represents the total amount staked on 'straight forecasts' divided by the total stakes placed on 'straight forecasts' and 'reverse forecasts' combined.

** $p < .01$, two-tailed (large sample test for difference between proportions)

TABLE 4

Comparison of Male and Female Staking Levels

| | <i>Male</i> | | <i>Female</i> |
|---------------|-------------|----|---------------|
| | £ | | £ |
| Mean | 4.06 | ** | 2.27 |
| S.D. | 9.00 | | 4.91 |
| Kurtosis | 146.6 | | 303.8 |
| 25 percentile | 1.00 | | 0.61 |
| Median | 1.65 | | 1.10 |
| 75 percentile | 3.85 | | 2.20 |
| 90 percentile | 10.00 | | 4.40 |

** $p < .01$, two-tailed (independent t-test)

whereas only 10 percent of female bets involve staking levels of more than £4.40, 21.4 percent of male bets exceed this stake level. These results offer some support for hypothesis 3. Additionally the statistics relating to standard deviation and kurtosis suggest a greater homogeneity in staking behaviour within the female population.

DISCUSSION

In interpreting the comparative results relating to male and female betting, it is important to acknowledge that the procedures used cannot claim to isolate all potentially explanatory variables. For example, the anonymity of the bettors, an important advantage of the method employed, denies an insight into the motivational basis for individuals' betting. Equally, potentially significant social organisational factors, such as the propensity for women to visit betting shops with male partners, cannot be isolated. As such the procedures and reported results should be seen primarily as offering an empirical insight into actual behaviour. The interpretation of the results which follows is intended to identify lines of enquiry which may contribute to an understanding of the observed patterns.

Performance

It is clear from Table 1 that in terms of the profitability of bets placed there is no evidence of gender-based differences in performance. These results are in marked contrast to investigations prior to the early 1980s which generally supported superior decision performance of men over women. However, the conclusions of later studies (e.g. Hudgens and Fatkin, 1985; Estes and Hosseini, 1988) are confirmed by the results reported here. This may support the notion, discussed earlier, regarding the increasing role of women as decision makers in organisational and social contexts.

The findings that women are more likely to place bets which produce some return (not necessarily a profit) and that a greater proportion of their stakes generate a return may arise from females' preference for low risk bets. Earlier research has indicated that women prefer gambles with a high probability of some, even low, return and men prefer gambles with a lower probability of some higher return (e.g. Kass, 1964). The underlying reasons for this may relate to different motivational bases for betting. If, for example, female bettors are more motivated by intellectual challenge (Bruce and Johnson, 1992), some rather than no return may offer partial vindication of a betting decision. Equally, if male bettors focus on potential financial return, their satisfaction from betting may demand a return in excess of stake placed.

Risk

The results relating to the degree to which male and female bettors accept risk require careful interpretation. Whilst the consensus from earlier studies is for a greater propensity on the part of males to accept higher risk, the results in Tables 2 and 3 apparently fail to offer consistent support for this. The results relating to male preference for 'straight forecasts' over apparently 'safer' 'reverse forecasts' and for 'win' bets over apparently 'safer' 'each way' bets is supportive of previous research. However, comparing the percentage of male and female bets and stakes on 'doubles' and 'trebles+' suggests a more risk preferring profile for the female population. This is confirmed by the tendency for males to place more bets and to commit greater stakes on the 'low-risk' bet type 'singles', whereas females commit greater stakes and place more bets on the 'medium-risk' bet types 'multiples' and 'any-to-come'.

The above results are open to a number of interpretations. Previous research has found that women are more easily persuaded or influenced, irrespective of the risk involved (see for instance Baker, 1975; Worchel and Cooper, 1976). The results reported here may be seen as corroborating these observations in that females may be more readily induced than males by the considerable advertising in offcourse betting offices for bet types which provide bookmakers with their highest profit margins (i.e. complex, multi-leg accumulators, 'forecasts' and 'multiples'). Despite their apparent risk-averse nature females may have been persuaded by advertising to use these higher risk bet types. The extent to which females bet significantly less on the 'low risk' bet type 'singles' may simply be the corollary of their having been persuaded to bet proportionately more on the higher risk 'multiples' and 'any-to-come' bets.

A second interpretation of these results may stem from gender based differences in definitions of low and high risk bets. Females' propensity to place more 'each way' (v. 'win') and more 'reverse forecasts' (v. 'straight forecasts') than males may arise because these bet types are perceived as more likely to produce *some* return. This interpretation supports the earlier work of Kass (1964) and Lindgren et al. (1987). Further corroboration may relate to females' preference for 'multiples' and 'any-to-come' bets, with their built-in consolation dividends and safeguards protecting prior winnings. For a given stake these bets are, other things being equal, more likely to produce some

return (though not a profit) than the previously defined 'low-risk' single bets. Low risk may be defined by males as 'most likely to produce a profit' but females may regard bets as 'low-risk' if they offer a 'high probability of receiving some return'.

A third interpretation of these results might be derived from the degree to which males and females differentially understand the true nature of the more complex 'multi-leg accumulator' and 'multiple' bets. A number of illusions may be created by these bets which may be differentially influential in modifying male and female betting behaviour. One 'multiple' bet, for example, is termed a 'Lucky 15'. This requires the bettor to select four horses in separate races and involves fifteen separate single and accumulator bets. Bettors of a particular gender may be more influenced by the term 'Lucky 15' into believing that the bet is likely to produce a return. Problem-framing heuristics of this nature have been discussed by Wagenaar (1988) in the context of Blackjack betting. Clearly gambling illusions of this type, rather than differences in risk propensity, may explain female preference for 'multiples' and 'trebles+' accumulator bets.

The results relating to risk preference could also be explained by females being motivated more by 'intellectual challenge' and males more by 'financial gain'. Bets such as 'multiples' and 'any-to-come' and bets placed 'each-way' provide the likelihood of at least partial vindication of, or reward (i.e. some return) to, the bettor motivated by intellectual challenge.

The only result relating to risk which cannot be explained in the above terms concerns females' tendency to bet relatively more than males on 'trebles+' as opposed to 'doubles'. There is generally less chance of obtaining some return from the former bet type. This result however supports the findings of Hudgens and Fatkin (1985) who demonstrated that whilst females are generally more cautious risk takers than males, in low probability events they take more extreme risks. 'Accumulators' generally can be regarded as high risk bets (i.e. low probability of a return) and, clearly, having chosen this bet type women appear to then choose more extreme risk bet categories.

In summary the results relating to risk preference in general terms offer some, though not consistent, support for previous research which suggests that females are more cautious risk takers. The results suggest, however, that there may exist gender differences in the definition

and perception of what constitutes risk and may suggest that males and females are differentially influenced by various gambling illusions.

Confidence

Stake size might be regarded as a proxy for confidence in the bet selection and, consequently, the current results confirm earlier findings concerning the greater confidence exhibited by males in their choices. The decisions involved in the current study are not made within an organisational context and the results reported here would appear, therefore, to refute the suggestion by Nicholson and West (1988) that gender differences in confidence are caused simply by organisational pressures. The distribution of bet-size for females implies that there is greater homogeneity in levels of confidence amongst female bettors than male bettors.

It should, of course, be noted that gender differences in bet-size may not relate simply to differential levels of confidence. The results may to some degree reflect the greater earning ability and/or access to capital of males. Additionally if expected gain is the guiding principle in bet selection then the higher average stake for males may simply demonstrate greater willingness on their part to risk their resources in the hope of some future gain. The results may, therefore, simply confirm the view that males are more risk propensives; demonstrating males' greater willingness to risk their resources in the hope of some future gain.

Methodological Considerations

It is important to expand briefly on the methodological advantages of the study reported here. As noted earlier, the exploration of *real* betting decisions compares favourably with samples derived from laboratory-based simulations. Anderson and Brown (1984) note: "it appears that gambling behaviour . . . differs to a significant degree in the real and the laboratory situations" (p.407).

The fact that the sample in this study was selected after close of business removes any potentially distortive effects associated with studies featuring observable researcher presence in the betting office.

(e.g. Dickerson, 1979). Equally, distortion associated with the sex of the experimenter is not a concern when subjects are unaware that their decisions are being monitored, though betting office staff, in any case, comprised both males and females.

Further methodological concerns associated with earlier work on gender and decision-making include the impacts of gender-orientation of the decision task, time pressure, external stimuli, information availability and age of subjects. It seems reasonable to suggest that the results reported here are relatively invulnerable to such distortions. For example, though betting, as a predominantly male pursuit, may be viewed as a male-orientated decision task, this was presumably not regarded as an inhibiting factor by the females in this study, who voluntarily engaged in betting. To a large degree, the time available to make the decision, the access to information and exposure to external stimuli are under the control of the individual bettor in this study. This does not deny the possibility that in certain cases, bets might be placed by individuals accompanying friends of the opposite sex or spouses into the betting office. Under such circumstances, a bettor's access to time and information could be influenced by the preferences of a partner. The fact that betting is illegal for those under eighteen years of age renders irrelevant the criticism relating to the use of children as subjects in some earlier male/female comparative studies.

Taken as a whole, therefore, it seems reasonable to suggest that as a basis for analysis this database offers a significant improvement over those employed in many of the earlier studies.

CONCLUSION

The relationships between gender and betting decision quality, risk propensity and levels of confidence, explored in the current study, are not straightforward. There appears to be some evidence of greater risk-taking by males in their betting decisions, lower levels of females' confidence in their choices and some degree of performance advantage for women. These conclusions, however, hinge on definitions of risk-taking and successful performance which, as suggested above, may vary for males and females. Caution must also be exercised in extrapolating these results to the population at large since, as discussed above, the degree to which betting is a 'male-orientated' task might affect the

current results. However, the current study does at least clearly demonstrate that significant gender differences in betting behaviour exist.

Further research might fruitfully explore the odds of horses selected in the various bet types since this would provide further insights into the nature of gender differences in risk preference. Questionnaire and interview surveys might be addressed at exploring gender differences in motivation to bet and specifically address male and female definitions of risk taking and successful performance. In addition, the extent to which individuals of the opposite sex bet on behalf of, or influence the betting strategies of their partners also requires investigation. Finally the degree to which gambling illusions created by complex bets differentially influence bettors of a particular gender requires explanation. This suggested research should go some way to extending the findings of the current study which indicate the existence of interesting gender differences in betting risk propensity, decision quality and confidence.

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