Gender as a Determinant of Small Business Performance: Insights from a British Study

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ABSTRACT. The performance of small businesses, that is the ability of small firms to contribute to job and wealth creation through business start-up, survival and growth, has been an important area of policy and academic debate in the 1980s. Surprisingly little has been written about gender and small business performance. Our literature search revealed only a small number of studies of any substance on this subject, though over forty made some mention of it, Most studies shied away from direct examination of quantitative performance measures (such as jobs created, sales turnover, annual growth), tending to concentrate on qualitative measures of success or failure. The paper examines small business performance and gender using data obtained from a survey of 600 (300 women, 300 men) Scottish and English small business owner-managers, part of a three year study on the impact of gender on small business management. Analyses suggest that the relationship between gender and small business performance is complex, but that gender still appears to be a significant determinant even after other key factors are controlled for.

I. Introduction

Many studies (e.g. Hisrich and Brush, 1983; Cuba, Decenzo and Anish, 1983; Longstreth, Stafford and Mauldin, 1987; Brush, 1992) suggest that women perform less well on quantitative financial measures such as jobs created, sales turnover, profitability. This, it is argued, is usually because women do not enter business for financial gain, but to pursue intrinsic goals (e.g. independence, flexibility to interface family and work commitments). Women thus assess their success in relation to their achievement in attaining these goals rather than on the more usual economic or financial measures. The debate is summarised by Brush in this way:

> Typically business performance is measured in economic or financial terms (Brush and VanderWerf, 1991). However, there is empirical evidence that suggests that women owned business earn less money (Hisrich and Brush, 1987; Brush, 1990) and often do not grow as rapidly as male owned businesses (Kalleberg and Leicht, 1991). Sexton (1989) notes that growth is a choice; it is likely that many women business owners choose not to grow their businesses, instead pursuing other goals. As one woman business owner recently noted, 'growing is more than growing in size; it is growing in knowledge and ability to do what you do better – its growing in a lot of ways' (Nelton, 1990). Hence the assessment of business performance for women owned businesses should include not only financial measures, but should incorporate other measures such as employee satisfaction, social contributions, goal achievement, and effectiveness (Brush, 1992, pp. 21–22).

Most evidence for female underperformance as measured by economic or financial indicators has come from U.S. national statistics (Brush, 1992, p. 14). These aggregate measures do not control for variables such as sector which may account for much of the differences observed. For example male and female proprietors may perform similarly within each sector, but may differ substantially on aggregate if more women than men are located in sectors associated with low sales and growth. Aggregate gender differences would thus

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be explainable by structural distribution rather than individual choice. It is interesting, therefore, that three studies with more sophisticated methodologies which take variables such as sector into account, appear to present a less simple picture of female underperformance (Johnson and Storey, 1989, 1993; Kalleberg and Leicht, 1991; Fischer, 1992).

Johnson and Storey's sample was 298 U.K. businesses surveyed in 1985, of which 67 were female owned. In 1988 184 of these businesses were followed up. Results were mixed. They reported in the 1985 survey that female owned businesses were more likely to have a turnover of less than £50,000, but that mean turnover was similar in both sexes at around £75,000. Male businesses were more profitable than those managed by women, but differences tended to be slight amongst sole owners. Despite female owned businesses being smaller in terms of number of employees, the mean differences were slight (4.4 versus 5.9 workers). In the follow up study, Johnson and Storey reported that in the period 1985 to 1988, female owned businesses tended to be more stable in terms of profitability and performance, and created more jobs than they had predicted in the 1985 survey. Storey and Johnson even indicate that in some respects female businesses tended to be more stable in terms of profitability and performance, and created more jobs than they had predicted in the 1985 survey. Overall differences were slight, leading the authors to conclude:

> Our study has indicated that the characteristics and performance indicators of those women who do manage to set up and remain in business do not appear to differ markedly from those of male entrepreneurs and their businesses (Johnson and Storey, 1993, p. 85).

Kalleberg and Leicht (1991) sampled some 400 firms from three industrial sectors in Indiana (U.S.A.), and followed them up in 1986 and 1987. The authors again found slight and inconclusive differences on their key performance measures. They concluded:

> Our findings sharply challenge the conventional wisdom regarding women's inferiority in entrepreneurship: the women's businesses we studied were no more likely to fail – and were just as successful as the men's. Moreover we found that the determinants of survival and success operated in much the same way for men and women, suggesting that the processes underlying small business performance are similar irrespective of an entrepreneur's gender (Kaleberg and Leicht, 1991, p. 157).

Eileen Fischer 1992's study based on a postal questionnaire of firms drawn from the Dun and Bradsheet data base, was limited to six industrial sectors. She found that businesses owned by women tended to perform less well in terms of measures such as sales, employment, and growth. She concludes, however, that the explanatory power "was not strong of variables that commonly considered to account for differences in the performance of men's versus women's firms" (Fischer, 1992, p. 2). The implication of Fischer's study was that the determinants of gender differences in business performance were more complex than had been recognised in earlier studies.

All three studies indicate mixed results when examining the relationship between gender and performance. On the whole they report better performance by women than is suggested by aggregate national statistics, and that determinants of performance are relatively similar by gender. These findings imply that revisions are necessary to the view that women do badly on the profit and economic front because they aspire to other goals. The importance of intrinsic goals should not necessarily be dismissed, but the picture becomes much more complex to interpret. Carter and Cannon (1992) showed that while women do indeed concentrate on qualitative aspects of success, female entrepreneurs are also heterogeneous in terms of motivations, goals and success strategies. Extrinsic financial motivations are not always secondary either. They often continue to play an important, though not exclusive, part in business success:

> Having achieved initial ambitions, entrepreneurs focus on quantitative performance indicators and long-term quality objectives, such as satisfaction and quality of life, for future success (Carter and Cannon, 1992, p. 111).

Nor has it been proven that men are any less intrinsic in their business goals than women. There is no evidence that men are any more profit orientated than women, or any less likely to value intrinsic goals. Indeed it is commonly believed many businesses remain small because of the owner manager having achieved a "comfort level" in which the pursuit of non-monetary goals are

preferred to making money. Lipper, (1988, p. 173) writes that:

> An entrepreneur can be successful, truly successful, without ever achieving significant levels of monetary profit if his definition of success envisions other than monetary measures, and HE programs HIS business life accordingly.

Our emphasis of the words 'he' and 'his' make it plain that in this quotation, the entrepreneur envisaged is typically male. The quotation with slight amendments to pronouns could equally have fitted the classic argument for women (Brush, 1992, p. 21).

In this paper we examine gender and performance using preliminary results from a recent U.K. study on the impact of gender on small business management. Six hundred owner managers were interviewed, using a lengthy structured questionnaire which took about an hour to complete. Some 650 variables were produced from the questionnaire for analysis. The emphasis of the paper is on understanding the nature and characteristics of small business performance by gender. The paper, however, does not attempt a general analysis of small business performance determinants, as the study was not designed for this.

The sample was a random quota sample,[1] 300 of each sex, and stratified by sector (200 from textile and clothing; 200 from business services; 200 from hotel and catering). The number of sectors were limited to three to enable us to control for sectoral effects in evaluating gender relationships. Beyond the interview, there was no opportunity to verify answers independently (for example, sales turnover figures from the firm's accounts, or number of employees from the payroll). Even if there had been time to examine accounts, this would have introduced new problems of comparability (for example accounts tend to be more accurately recorded in larger firms).

Being based on owner manager recall, answers are approximations of performance, (hence the use of the word "insights" in the title of this paper). They had to be in a form that could be answered by owners from all the firms, irrespective of size or legal organisation. We thus adopted in the questionnaire a diverse range of relatively simple performance indicators. These include questions on numbers employed,[2] sales turnover, capital assets, registrations for Value Added Tax (VAT), expected sales performance/growth, perceptions of profitability, range of markets, investment in equipment, details of previous businesses owned, number of current businesses owned, and the extent to which business meets financial and domestic needs. Attitude questions were left open ended to avoid the danger of leading respondents (see Hamilton, Rosa and Carter, 1992 for a fuller discussion of this point).

II. Results

Part 1 examines whether a *prima facie* case exists for believing that that gender is an important determinant of business performance. Part 2 assesses the complications presented by three key factors, sector, age of firm and ownership in interpreting sex differences as "gender" differences. Part 3 reports on multivariate analyses where the effect of gender is examined alongside the effects of other potential determinants of small business performance.

Part 1: Are there marked differences in performance by sex?

The analysis first concentrated on whether statistically significant differences could be detected between male and female respondents for various performance measures. These measures were classified into four groups:

a) Primary performance measures: (number of employees; growth in employees, sales turnover; value of capital assets)
b) Proxy measures of performance: (geographical range of markets; whether registered for VAT)
c) Subjective measures of performance (including the ability of the business to meet business and domestic needs)
d) Entrepreneurial performance: the desire for growth; the ownership of multiple businesses.

A. *Primary performance measures*

Number of employees

Performance as indicated by people employed was measured in a number of ways. Firstly there were two ways of measuring numbers currently

employed, (a) total employees (including part-time, casual, seasonal), and (b) total numbers of core staff (those permanently employed). Growth in employment was also calculated for businesses older than two years by subtracting total employees at the end of the first year in business from the total number of current employees.

Table I shows that for all employees and core employees, the businesses of women tend to employ fewer people. The most clear results involved core staff by sex of respondent. Thus 71 per cent of female respondents employed five employees or less, compared to 45 per cent of male respondents. Conversely only 3 per cent of female respondents employed more than 20 core employees, but 15 per cent of male respondents did so. Single owners are especially different in this respect. Some 14 per cent of male sole traders employ ten or more core staff, compared to 0.8 per cent of female sole traders.

Growth in employment

Respondents were asked how many employees (including part time and casual) they had at the end of their first 12 months of business. These were subtracted from the current number of total employees to give a figure for employment growth. Differences by sex of respondent were highly significant (Table II), but these are accounted for by only two categories as the separate effects[3] demonstrate. Women are much more likely than men to have grown by 1–5 employees, while men are much more likely to have grown by more than 20 employees. The percentage having contracted since the first twelve months of trading is nearly identical in each sex at 17 per cent.

Sales turnover (last financial year)

Instead of probing for detailed sales figure which might provoke hostility or refusal, we asked for figures within broad bands. Only around 5 per cent refused to give figures on this basis. Table III shows that male owned businesses had significantly higher sales figures. In particular businesses that turned over more than £500,000 were twice as common for men (18% versus 9%).

Total physical assets

Differences in total physical assets (Table IV) are less marked than those observed for sales turnover (Table III) though still highly significant. Differences tend to be most marked at the low value bands. No less than 34 per cent of women claimed their business was worth £10,000 or less in terms of assets, compared to only 15 per cent of men.

In terms of primary performance measures, therefore, there appears to be major differences in the performance of businesses between the sexes, with the male owners outperforming female owners.

TABLE I
Number of employees by sex of respondent

	All employees				Core employees			
	Women		Men		Women		Men	
Employees	n	%	n	%	n	%	n	%
None	50	16.8	29	9.6**	105	35.2	59	19.5***
One	21	7.0	19	6.3	35	11.7	26	8.6
2 or 3	64	21.5	45	14.9*	72	24.2	53	17.5
4 to 5	40	13.4	31	10.3	28	9.4	40	13.2
6 to 9	49	16.4	66	21.9	25	8.4	44	14.6*
10 to 19	51	17.1	53	17.5	23	7.7	34	11.3
20 or more	23	7.7	59	19.5***	10	3.4	46	15.2***
Total	298	100.0	302	100.0	298	100.0	302	100.0
		χ^2 $p = 0.00$				χ^2 $p = 0.00$		

* Separate effects significant.

TABLE II
Growth in employees since the first 12 months of trading by sex of respondent

	Women		Men	
	n	%	n	%
Negative	52	17.6	51	17.3
None	94	31.9	90	30.5
One to five	102	34.6	77	26.1**
Six to ten	23	7.8	34	11.5
Eleven to twenty	18	6.1	17	5.8
More than twenty	6	2.0	26	8.8***
Total	295	100.0	295	100.0
		χ^2 p = 0.00		

* Separate effects significant.

TABLE III
Sales turnover last financial year by sex of respondent

	Women		Men	
	n	%	n	%
Less than 10 K	36	14.2	11	4.0**
10 up to 25 K	42	16.6	20	7.3**
25 up to 50 K	36	14.2	24	8.7
51 up to 75 K	15	6.3	30	10.5*
75 up to 100 K	24	9.5	21	7.6
100 up to 500 K	72	28.5	116	42.2**
500 up to 1 mill K	19	7.5	28	10.2
1 up to 5 mi	8	3.2	21	7.6*
5 million +	0	0.0	5	1.8*
	275	100.0	253	100.0
		χ^2 49.8 (8df) p = 0.00		

* Separate effects significant.

B. *Proxy measures of performance*

Geographical spread of markets

The smaller the firm, the more likely it is that its customers are narrowly dispersed in "local, or at best, regional markets" (Storey, 1983, p. 16). The geographical spread of markets thus provides a proxy measure of performance. We asked all respondents what proportion of their total sales came from the same city or town, local region, elsewhere in the U.K., the EU and the rest of the world. In general male respondents tended to be less localised in their markets within the U.K. Women are significantly more likely to have a majority of sales in the same city or town; and are significantly less likely to be trading at all outside their local region.[4] Surprisingly, however, differences were slight, and consistently non significant in the percentage exploiting overseas markets.[5]

TABLE IV
Perceived value of capital assets by sex of respondent

	Women		Men	
	n	%	n	%
Less than 10 K	97	35.9	43	15.5***
10 up to 25 K	37	13.7	46	16.6
25 up to 50 K	32	11.9	24	8.7
51 up to 75 K	13	4.8	25	9.0
75 up to 100 K	18	6.7	27	9.7
100 up to 500 K	55	20.7	73	26.0
500 up to 1 mill K	10	3.7	24	8.7*
1 up to 5 mi	7	2.6	14	5.1
5 million +	0	0.0	2	0.7
	270	100.0	277	100.0
		χ^2 40.55 (8df) p = 0.00		

* Separate effects significant.

Registration for value added tax (VAT)

Businesses in the U.K. that earned more than £33,000 in the 1991–1992 tax year had to register for Value Added Tax. The VAT threshold is thus a useful indicator of minimal performance. It is a level of sales turnover where a business ceases to be "microscopic", and which implies a greater commitment to more formal management. The results show that around three quarters of all businesses are VAT registered. The businesses of male respondents are significantly more likely to be registered than those of female respondents (87% versus 70%). The VAT registrations thus reinforce other indicators of performance in pointing to greater performance for the businesses of male respondents.

In summary the analysis of proxy measures appears to confirm that differences in performance are marked between the sexes, and that women appear to perform less well.

C. *Subjective measures of performance*

Perceived performance

Respondents were asked to assess how well they thought their business had performed in the previous two financial years. Answers were consistent between the sexes, with no significant differences either overall or by sector (Table V). Interestingly the number verging on bankruptcy/liquidation were small in both years, and similar by sex. If anything performance was slightly worse for male respondents at this level.

In a separate question respondents were asked whether their business was "in trouble" – slightly less extreme than being on the verge of bankruptcy. About a fifth admitted they were, varying from over a quarter in the hotel and catering sector, to about a tenth in business services. Differences by sex were minor and were non significant (for example 18% of women overall admitted being in trouble compared to 19% of men). Both sexes tended to blame the recession and high interest rates rather than their own shortcomings. Of 25 female respondents who claimed their business was in trouble, none said this was due to "being able to give the business full attention due to problems at home". The solitary positive response to this question was male.

In terms of expected performance, women tended to be more likely to think that their performance last financial year was "better than expected" (28% versus 23%), while a significantly greater percentage of men (29 versus 19%) believed their business had performed "worse than expected". This would appear to confirm other findings that women tend to be less optimistic in their expectations of business than men.

Meeting business and domestic income needs

Most respondents agreed that the business provided sufficient income to meet business needs (86% women 88% men). No significant differences were registered. This contrasts markedly with income satisfaction for domestic needs, with significantly fewer women than men expressing satisfaction (66% versus 80%). It can be inferred from this that women may carry far more of the domestic financial responsibilities than men. This explanation, however, is not borne out by secondary analysis which shows that women's domestic needs are less likely to be met simply because female businesses tend to be smaller, and provide less income. Respondents of male businesses with low turnovers were found to be just as likely to be dissatisfied with the ability of their business to meet their domestic needs as their low income female counterparts.

Respondents who recorded a shortfall in income were then asked who or what provides additional income to meet the shortfall. Domestic partners provided by far the largest source of additional income in both sexes, but women were significantly more likely to give this source (71% versus 51%). Men were much more likely to give

TABLE V
Perceived performance of business by sex of respondent

	Financial years							
	1990/1990				1991/1992			
	Women		Men		Women		Men	
Performance	n	%	n	%	n	%	n	%
Large profit	16	6.2	22	7.8	16	5.7	15	5.2
Modest profit	138	53.7	157	55.1	137	48.6	147	50.7
Small loss	71	27.6	65	22.8	90	31.9	83	28.6
Large loss	26	10.1	32	11.2	31	11.0	30	10.3
Verge bankruptcy	6	2.3	9	3.2	8	2.8	15	5.2
Total	257	100.0	285	100.0	282	100.0	290	100.0
		χ^2 p = 0.71				χ^2 p = 0.66		

"another company" or "savings" as means of meeting shortfalls.

In summary, differences appear to be slight in terms of perceived measures of performance. For the one measure that does differ markedly, how far the business meets domestic needs, the difference is mostly accounted for by primary differences in firm size and income.

D. *Entrepreneurial performance*

Entrepreneurial performance can be measured in terms of multiple business ownership and the desire for growth.

Multiple business ownership

This section of the questionnaire provided some consistent sex differences. Just under a fifth of male respondents (19.6%) currently owned more than one business, compared to 8.6 per cent of female respondents, a highly significant difference. These results seem to confirm that in terms of entrepreneurial performance, male business owners do better as a group than female owners. Nevertheless differences are quantitative rather than qualitative. There may be more male multiple business owners proportionally, for example, but there are still a significant number of female multiple business owners too. If we speculate that women in business have started from a much lower tradition of achievement, then these figures are remarkable, and may be an indicator that they are catching up fast.

This difference may also be related to differences in the desire for growth and in the type of growth strategy adopted.

Desire for growth

Overall responses to the question of growth were divided between a third with no plans to do so and over a third who planned to expand as far as they could. Men were significantly more likely than women to want to expand as far as they could (43% versus 34%). In unprompted answers to open ended questions, respondents gave a diversity of reasons why they did not wish (a) to expand as far as they could or (b) not expand at all. None differed markedly by gender. In terms of (a), the most common reasons were associated with control of the business (19% females, 22% males). In the case of (b), the most common reasons for not wishing to expand were evenly divided between "content" (16% women; 20 men); "big enough" (11% women, 10% men); "recession" (11% women, 15% men); and "retiring soon" (11% women, 11% men).

When respondents who wanted to grow as much as possible were prompted on how they would achieve expansion, only four strategies were significant by gender (Table VI). Male respondents were much more likely to seek expansion through "lateral" expansion through

TABLE VI

If wishing to expand the business "as far as I can" what expansion would involve by sex of respondent

Expansion would involve	Women		Men		CHI *p*
	n	%	n	%	
Merging with other businesses	9	5.0	23	11.9	0.02
Buying up businesses	13	7.2	33	17.0	0.00
Setting up more business units	26	14.4	47	24.2	0.02
Increasing production	102	56.7	89	45.9	0.04
Franchising	4	2.2	10	5.2	NS
Exporting	18	10.0	29	14.9	NS
Increasing exports	16	8.9	14	7.2	NS
Extending premises	62	34.4	57	29.4	NS
Increasing staff levels	93	51.7	92	47.4	NS
Investing in computerised systems	29	16.1	38	19.6	NS
Bringing in a full time manager	13	7.2	15	7.7	NS
Buying in consultants	3	1.7	10	3.3	NS
New product development	40	22.2	57	29.4	NS

mergers, buying other businesses and setting up more business units. Female respondents in contrast were more likely to seek expansion through increasing production. This is compatible with the much higher rate of concurrent business ownership amongst men.

In summary, entrepreneurial performance, the desire to grow, and the type of growth strategy preferred, appears to differ markedly by sex.

Part 2: Complicating factors

Kalleberg and Leicht (1991, p. 157) stress caution against "drawing premature" conclusions in the light of the scarcity of previous research There are in particular a number of factors that could produce widely differing results depending on how they are treated methodologically. These are sector, business age and co-ownership.

1) *Sector*

If male owned businesses are more common in sectors which contain higher proportions of larger firms, or which have been associated in the 1980s with an unusually high proportion of high growth firms, then we would expect male owned businesses, on aggregate, to perform better than female owned ones in terms of size or growth rate. This difference could be seen as a function of sectoral distribution if male and female owned businesses WITHIN sectors perform similarly.

This hypothesis is rejected by separate sectoral analyses. These are summarised in Table VII. The major "quantitative" performance indicators (employees, sales, assets, VAT registration) all show consistently higher values for male businesses than female, and in two indicators, sales and core employees, differences are significant in all three sectors. The less consistent sectoral differences in total employees as opposed to core employees may indicate that labour market differences in the distribution of casual and part time employment are independent of any structural gender forces.

Of the other measures only two, range of markets within the U.K. and "business income sufficient for meeting domestic needs" show consistent sectoral variation. It is noticeable that indicators based on attitudes mostly show no significant differences (TYPE 5 in Table VII) or are inconsistent in variation from one sector to another (TYPE 4). Clearly the impact of sector on these variables is complex.

It is also possible that controlling for sector does not go far enough. Industrial sectors tend to be classified in terms of product types rather than on markets. It could still be that within each sector there are systematic differences by sex, with female owned businesses tending to cluster in the low size bands (as would be the case, for example in the textiles and clothing sector, if most female businesses were craft knitters and most male businesses were knitwear factories). Finding unequal performance within sectors could still reflect differential distributions in products and markets rather than in "performance" practice.

2) *Business age*

In the U.K. in the 1980s, the number of female owned businesses increased at a much higher rate than male owned businesses (Creigh *et al.*, 1986; Daly, 1991). Assuming failure rates are equal by gender, this results in a large imbalance of older male owned businesses. Older businesses tend to be larger in terms of sales turnover, number of employees and capital assets. Consequently performance indicators would usually favour male owned businesses. In theory this factor could be extremely important. In Johnson and Storey's paper (1993, p. 75), however, the relative age of male and female owned businesses was, surprisingly, found to be very similar. This was not the case in our study. Female owned businesses were significantly younger. *T*-tests reveal a significantly higher mean business age for males (15.4 years versus 10.2 years), and significant deviations from the total sample median, with the male median age of eight years higher than the female one of five. To test whether age of firm was responsible for better male performance in quantitative variables, the sample was split into 6 age bands (less than 2, 2–5; 6–10; 11–20 and 21 or more). Within each age band, quantitative indicators were compared by gender. The results are too lengthy to report here in detail, but on the whole the general trends reported earlier for the total sample, when undifferentiated by age of firm, are reproduced within each age band. Variables which show strong trends by gender (eg number of full time employees) also do so within each age band. An example is given

TABLE VII
Summary of sectoral variation of performance indicators by sex of respondent

Measure	Sectors				Type
	TC *p*	BS *p*	HC *p*	All *p*	
Total employees	0.00	0.32	0.05	0.00	2
Core employees	0.00	0.03	0.00	0.00	1
Employment growth	0.01	0.21	0.50	0.00	4
Sales turnover	0.00	0.02	0.00	0.00	1
Value of assets	0.02	0.10	0.02	0.00	2
VAT registered	0.00	0.12	0.00	0.00	2
Range of markets					
– same city/town	0.01	0.83	0.97	0.07	4
– same region	0.69	0.16	0.39	0.15	5
– elsewhere in U.K.	0.01	0.01	0.97	0.00	2
– EEC	0.94	0.94	0.80	0.97	5
– rest of world	0.47	0.98	0.68	0.94	5
Expected state of business	0.09	0.25	0.39	0.02	3
Perceived profitability 90/1	0.80	0.69	0.96	0.71	5
Perceived profitability 91/2	0.63	0.62	0.77	0.66	5
Business in trouble?	0.36	0.36	0.50	0.85	5
Sufficient income for					
– business needs	0.95	0.46	0.40	0.40	5
– domestic needs	0.00	0.04	0.16	0.00	2
Growth desire					
– as far as I can	0.49	0.15	0.00	0.02	4
– limited	0.82	0.07	0.45	0.18	5
– none	0.02	0.83	0.01	0.22	4

TC = Textile/clothing; BS = Business services; HC = Hotel/catering; All = all sectors; *p* = chi square probabilities.
Type: 1 = significant in all sectors, women consistently perform less well; 2 = women consistently perform less well but difference not always significant; 3 = men consistently perform less well, but not always significant; 4 = trend not consistent in all sectors; 5 = not significant in any sector or total sample.

in Table VIII, which considers the proportion of firms with no employees. Age of firm, therefore, only accounts for a minor part of gender variation.

TABLE VIII
Percentage of firms with zero employees by sex of respondent for each age of firm category

Age of firm (years)	Full time employees		Chi
	Women %	Men %	
0, 1	38.7	8.3	0.010
2–5	19.6	19.5	NS
6–10	23.9	9.4	0.051
11–20	15.0	8.8	NS
21 or more	21.2	6.7	0.038

3) *Ownership*

We have discussed elsewhere (e.g. Rosa and Hamilton, 1992: Rosa and Hamilton, 1993) that co-ownership is a complex issue, making it difficult to split businesses into neat divisions of "female owned" or "male owned" businesses. This is illustrated in Table IX, which shows that the number of businesses that are co-owned are in the minority, and that a large minority of businesses (41%) were of mixed sex ownership. Both male and female single sex partnerships were relatively uncommon. The most interesting finding was our failure to find a single example of an all female owned business containing three or more owners. The high incidence of co-ownership does not verify the observation that "comparable to male-owned businesses, women most often choose sole

TABLE IX
Distribution of ownership categories by gender

Owners	%
One owner	
Female	19.6
Male	19.9
Two owners	
Both female	4.7
Both male	9.2
Mixed sex	29.4
Three or more owners	
All female	0.0
All male	5.0
Mixed sex	12.2
Total	100.0

proprietorship as the preferred form of business structure (Hisrich and Brush, 1983; Cuba, Decenzo and Anish, 1983; Mescon, Stevens and Vozikis, 1983, 1984)" (Brush, 1992, p. 13). This difference may be accounted for by our use of restricted sectors. The results, however, show that female business owners are not always proportionally the majority of sole traders in all sectors (male sole traders tend to be proportionally more common in business services). This would indicate that it is not so much that women prefer sole trading, but that in sectors where women are commonly self employed, sole trading is the dominant form of business ownership.

Some key performance measures were compared by gender within and between ownership categories. In terms of the more objective measures of performance (sales, employees, VAT registration), highly significant differences were recorded within the single ownership and partnership groups. No significant differences were recorded in the multiple ownership group, which could only compare mixed sex businesses with all male businesses in the absence of any female multiple owned business. More subjective indicators of performance such as the desire to grow showed no significant differences, reflecting the trends in the undifferentiated sample earlier. Where significance is demonstrated, the general pattern is for male owned businesses to tend to display much better performance than all female businesses. In the case of partnerships, the mixed sex owned businesses perform better than female partnerships, but less well than male partnerships. While these trends illustrated in Table XIII are for two of the performance variables, other measures such as VAT registration, assets and total employees demonstrate similar patterns.

One group, all male partnerships, stands out from these detailed results. In this group 71 per cent turned over £100,000 or more, compared to only 33 per cent of all female partnerships and 56 per cent of mixed (Table X) and only 1.9 per cent have no full time employees, compared to 32 per cent of all female partners and 17 per cent of mixed (Table XI). It is noticeable too that mixed sex partnerships perform much better than all female partnerships or single traders of either sex. All male partnerships are more similar to the performance of multiple owned businesses than of other types of partnerships. Being a women appears to be no handicap to performance in multiple owned businesses.

Part 3: Multivariate analyses

Part 2 illustrated in some detail that gender differences in performance persist even when we allow for macro structural factors associated with sectoral and age of firm distributions. They persist too even when patterns of co-ownership are examined. Single women still perform less well than single men; women in partnership with each other perform much less well than all male partnerships. In terms of multiple owners, the best performing ownership category, the rarity of all women multiple owners is notable. In this section, we consider whether gender still persists as an important determinant of performance if a wider range of factors were considered. To test this regression analyses (OLS) were performed with a range of factors considered to be influential determinants of business performance (see Appendix 1).

Equations for estimates on five dependent variables measuring performance are described in Appendix 1. Table XII shows the results for employment growth (equations 1 to 3). In all three equations the independent variables were able to significantly predict the dependent, with r^2 varying from 0.2 for growth in employees to 0.33 for number of full time employees. The four most

TABLE X
Total sales by ownership and gender

Owner	All women %	All men %	Mixed %	Total %
Single				
Up to £25,000	50.5	19.6	–	34.8
£25 up to £100,000	31.1	36.4	–	33.8
£100,000 or more	18.4	43.9	–	31.4
Total	100.0	100.0	–	100.0
Partners				
Up to £25,000	25.0	6.2	13.8	13.4
£25 up to 100,000	41.7	22.9	31.6	30.8
£100,000 or more	33.3	70.8	54.6	55.8
Total	100.0	100.0	100.0	100.0
Multiple				
Up to £25,000	0	3.6	7.9	6.6
£25 up to £100,000	0	10.7	11.1	11.0
£100,000 or more	0	85.7	81.0	82.4
Total	0	100.0	100.0	100.0

TABLE XI
Number of full-time employees by ownership and gender

Owner	All women %	All men %	Mixed %	Total %
Single				
None	31.8	20.6	–	25.7
1–5	63.5	52.9	–	57.8
6–19	3.5	21.6	–	13.4
20 or more	1.2	4.9	–	3.2
Total	100.0	100.0	–	100.0
Partners				
None	32.0	1.9	17.3	15.5
1–5	48.0	38.5	51.9	48.5
6–19	16.0	36.5	23.7	25.8
20 or more	4.0	23.1	7.1	10.3
Total	100.0	100.0	100.0	100.0
Multiple				
None	0	3.3	1.4	2.0
1–5	0	26.7	34.8	32.3
6–19	0	43.3	39.1	40.4
20 or more	0	26.7	2.6	25.3
Total	0	100.0	100.0	100.0

important predictors were sector (trading in the textile and clothing sector); number of owners, initial capital provided by the respondent at startup, and whether finance had been refused. Age of firm was also important in equations 2 and 3, but not in equation 1 where "growth in employees" was dependent. Age of respondent also exhibited a significant *t* value in equations 2 and 3. In terms of gender, variables related to gender such as number of children, and age of

TABLE XII
Estimation with growth in employees, number of full time employees and total employees dependent

	Growth in employees		Full-time employees		All employees	
	β	*t*	β	*t*	β	*t*
AGEFIRM	0.97	(1.48)	1.54	(2.31)*	2.16	(2.86)**
TEXT.SEC	7.72	(3.87)***	10.79	(5.30)***	12.25	(5.29)***
HOTEL.SEC	2.93	(1.23)	−0.29	(−0.12)	5.13	(1.94)*
N.OWNERS	2.38	(3.46)***	4.29	(6.13)***	4.84	(6.06)***
NOTH.BUS	−2.28	(−1.67)	−1.81	(−1.29)	−2.52	(−1.59)
INITCAP	0.0[1]	(2.34)*	0.0[2]	(5.13)***	0.0[3]	(3.91)***
FIN.REFUSD	5.67	(2.56)**	4.57	(2.03)*	6.84	(2.66)**
ROT.CLUB	−0.49	(−0.17)	−0.42	(−0.14)	0.65	(0.20)
SUBCONT	−4.65	(−2.47)*	−3.85	(−2.01)*	−4.91	(−2.25)*
PREVBUS	1.39	(1.08)	0.32	(0.24)	0.62	(0.41)
CSE/O.Q	2.36	(1.46)	3.12	(1.89)*	2.65	(1.41)
ALEVEL.Q	0.33	(0.20)	−0.23	(−0.14)	0.67	(0.35)
CLERIC.Q	2.58	(1.07)	4.10	(1.67)	4.85	(1.73)
TRADE.Q	−0.85	(−0.43)	−1.21	(−0.60)	−0.91	(−0.40)
VOCAT.Q	−2.31	(−0.92)	−5.08	(−1.98)*	−5.29	(−1.82)
PROF.Q	−0.34	(−0.18)	1.21	(0.61)	1.19	(0.52)
DEGREE.Q	1.93	(1.10)	0.74	(0.41)	0.71	(0.39)
GROWTH	1.55	(1.68)	0.77	(0.82)	1.44	(1.34)
DOM.PTN	2.94	(1.34)	3.09	(1.37)	4.07	(1.59)
YOUNGEST	−0.99	(−1.36)	−0.85	(−1.15)	−1.46	(−1.72)
NOCHILDN	−0.79	(−1.15)	−0.99	(−1.41)	−1.39	(−1.74)
AGERESP	0.99	(1.89)	1.07	(2.03)*	1.23	(2.03)*
SEXRESP	−2.11	(−1.28)	−4.36	(−2.56)**	−3.00	(−1.55)
Constant	−4.24	(−0.70)	−7.85	(−1.27)	−7.41	(−1.10)
R^2	0.20		0.33		0.30	
Adj R^2	0.14		0.29		0.26	
F	3.57		7.39		6.40	
Sig.	0.00		0.000		0.000	
r^2 change (SEXRESP added)	0.004		0.012**		0.005	

[1] 9.371E-0.5; [2] 2.084E-04; [3] 1.809E-04.
* $P = < 0.05 > .01$; ** $P = < 0.01 > .001$; *** $P = < 0.001$.

youngest child were not significant. Sex of respondent, however, was a significant factor in equation 2, with the change of r^2 on adding it significant at $p \leq 0.01$.

The results of the estimations for sales turnover and capital assets dependent (Table XIII) also display similar general trends to those just reported. Again the contribution of sex of respondent is mixed, being significant in equation 4, but not in equation 5. Age of youngest child, however, appears to be a significant factor in equation 5.

The main conclusion from this analysis is that gender remains a significant determinant of performance as measured by sales turnover and number of full time employees, even when the contributions of an expanded list of potential determinants are allowed for. It is, however, not a primary determinant in comparison with other factors.

IV. Conclusions

This study has demonstrated some considerable differences by sex in quantitative economic and financial performance measures. *Prima facie*, female businesses under-perform in number of employees, VAT registration, sales turnover, capital assets and range of markets. These results

TABLE XIII
Estimations with sales turnover and value of capital assets dependent

	Sales turnover		Capital assets	
	β	*t*	β	*t*
AGEFIRM	0.36	(4.68)***	0.54	(5.89)***
TEXT.SEC	0.19	(0.78)	0.43	(1.57)
HOTEL.SEC	–0.29	(–1.08)	1.42	(4.45)***
N.OWNERS	0.56	(6.84)***	0.45	(4.71)***
NOOTH.BUS	–0.03	(–0.17)	–0.03	(–0.17)
INITCAP	0.0[1]	(2.98)**	0.0[2]	(3.61)***
FINREFUSD	0.59	(2.26)*	0.25	(0.81)
ROT.CLUB	0.33	(0.98)	0.53	(1.32)
SUBCONT	–0.24	(–1.06)	–0.09	(–0.34)
PREVBUS	0.01	(0.07)	0.14	(0.79)
CSE/O.Q	0.16	(0.85)	–0.00	(–0.01)
ALEVEL.Q	–0.07	(–0.36)	0.12	(0.51)
CLERIC.Q	0.24	(0.84)	–0.35	(–1.05)
TRADE.Q	0.17	(0.72)	–0.08	(–0.30)
VOCAT.Q	–0.32	(–1.06)	–0.33	(–0.93)
PROF.Q	0.31	(1.36)	0.19	(0.72)
DEGREE.Q	0.11	(0.54)	0.12	(0.50)
GROWTH	0.16	(1.43)	0.17	(1.29)
DOM.PTN	0.21	(0.81)	0.09	(0.30)
YOUNGEST	–0.12	(–1.41)	–0.21	(–2.08)*
NO.CHILDN	–0.08	(–1.01)	0.05	(0.50)
AGERESP	0.09	(1.39)	–0.01	(–0.16)
SEXRESP	–0.44	(–2.22)*	–0.25	(–1.06)
Constant	2.89	(4.01)***	1.13	(1.34)
R^2	0.32		0.33	
Adj R^2	0.28		0.29	
F	7.04		7.29	
Sig.	0.00		0.000	
r^2 change (SEXRESP added)	0.01*		0.002	

[1] 1.415E-05; [2] 2.010E-05.
* $P = < 0.05 > 0.01$; ** $P = < 0.01 > 0.001$; *** $P = < 0.001$.

diverge from those of the other major U.K. study of gender and performance which reported less marked sex differences in many performance indicators (Johnson and Storey, 1989, 1993).

This study also found clear differences by sex in other indicators of entrepreneurial performance. Female business owners are less likely to own multiple businesses, less eager to plan expansion and where expansion is planned their strategies for growth will be rather different from their male counterparts. In part this may be related to attitude, men are more likely to consider strategies of lateral expansion to achieve business growth. Nevertheless, expanding into new businesses can usually only be achieved from a strong base of existing assets. As this study shows, the value of assets in female businesses is significantly lower than in male firms. Access to and control over resources may also play a part in inhibiting women from seeking lateral expansion. Many women share business and domestic resources with men and social custom may allow men more freedom to 'ring-fence' business resources for their own ends. It is also possible that, because of heavier domestic commitments, women have less time to manage more than one business. However, these results can be interpreted in a more positive fashion. The number and proportion of women who own or co-own more than one business, though significantly fewer than men, is still notable. If female owners have started from a much lower tradition of achievement in business then this trend is encouraging and may provide support for Birley's (1989) view that the gender gap in the U.K. is narrowing.

Results were mixed when examining whether women aspire to more intrinsic goals than men. In support of this hypothesis is the fact that men were significantly more likely to want to grow their business as far as they can. Against it are the non significant results associated with measures of perceived performance and reasons for not wanting to grow. The one major difference in "goals" appeared to be related to the fact that women were much more likely to perceive that the business was inadequate for meeting domestic needs. Further analysis, however, pointed to this being more accounted for by income factors (women are more likely to have small incomes), rather than any qualitative concerns of domestic life.

Although some marked sex differences in performance indicators were found, the complexity in the overall pattern of results demands careful interpretation. While the quantitative measures of performance show profound gender differences, only two show consistent significant differences in all three sectors. Lack of consistent differences across all sectors weakens the case that observed sex differences can be interpreted only in terms of sociological gender theory (Rosa, Hamilton, Carter and Burns, 1993). This means that the

variation of most economic quantitative measures of performance by sex is a product of a blend of factors, not just of structural gender forces that may act to disadvantage women. This is especially borne out by the multivariate analyses, where sex of respondent, while a significant determinant for two of the key performance indicators, nevertheless ranked well below other factors in its ability to predict performance.

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Notes

[1] A quota sample means that the sample is not randomly drawn in a strict sense. Results and statistical tests of significance cannot be interpreted in the conventional way, as population estimates (Moser and Kalton, 1971, p. 127ff). In this study, however, we are not trying to estimate population parameters. We feel that any such attempt is (arguably) meaningless in the context of small business proprietorship, due to considerable sectoral variation. Tests of significance are used instead as surrogate guides for assessing strengths of relationship. Nevertheless our confidence in the approximate representativeness of the sample obtained was considerably enhanced on observing consistent similarities when statistical results were compared between those based on the first 340 respondents and those based on the remaining 260.

[2] It is complex to construct a standardised measure of "number of employees", that adequately combines full time employees, part time employees, casual employees, seasonal employees, and whether the firm owners should be included. The status of the owner as an employee is particularly problematic given different forms of legal organisation; self employment; and non active partners, directors and shareholders. Thus, for example, Cooper, Woo and Dunkelberg 1989's attractive suggestion that owners should be included, and that part-time employees should count as 0.5, is still oversimplified. They do not mention, for example, how casual and seasonal employees should be treated, or how the complexities of ownership should be allowed for. Our view is that it is premature to standardise across studies, and across countries. Internal consistency within each study is difficult enough to achieve, particularly at the data collection phase. In our study owners were excluded as employees. Part time employees were defined as employees permanently employed who worked 20 hours or less a week. Casual employees are those employed to do a temporary job of work. The analysis concentrates on two measures of employees: (a) total employees (all employees irrespective of type), and full time employees (permanent employees working 21 or more hours per week). Growth in employment is based on total employees, and is the difference between total number of current employees and those employed at the end of the first year of trading.

[3] A separate effect for a row is when the chi square for that row is calculated against all other categories pooled. Levels of significance are indicated by:

$*P = < .05 > 00.01$
$**P = < 0.01 > 0.001$
$***P = < 0.001$

[4] 53% of women had 60 to 100% of sales within the same city or town compared to 41% of men (χ^2 $p = 0.002$). Only 42% of women had sales beyond the local region, compared to 55% of men (χ^2 $p = 0.003$).

[5] 17% of each sex traded in EEC markets, and 12% each sex traded in the rest of the world.

References

Birley, S., 1989, 'Female Entrepreneurs, Are They Really Different?' *Journal of Small Business Management* **27**(1), 32–36.

Brush, C. G., 1992, 'Research of Women Business Owners: Past Trends, a New Perspective, Future Directions', *Entrepreneurship Theory and Practice* **16**(4), 5–30.

Brush, C. D., 1990, 'Women and Enterprise Creation: Barriers and Opportunities', in S. Gould and J. Parzen (eds.), *Enterprising Women: Local Initiatives for Job Creation*, Paris: OECD, pp. 37–58.

Brush, C. G. and P. VanderWerf, 1992, 'A Comparison of Methods and Sources for Obtaining Estimates of New Venture Performance', *Journal of Business Venturing* **7**(2), 157–170.

Carter, S. and T. Cannon, 1992, *Women as Entrepreneurs*, London: Academic Press.

Creigh, S., C. Roberts, A. Gorman and P. Sawyer, 1988, 'Self-Employment in Britain: Results from the Labour Force Surveys', *Employment Gazette*, June, 183–194.

Cuba, R., D. Decenzo and A. Anish, 1983, 'Management Practices of Successful Female Business Owners', *American Journal of Small Business* **8**(2), 40–45.

Daly, M. 1991, 'The 1980s – A Decade of Growth in Enterprise: Self-Employment Data from the Labour Force Survey', *Employment Gazette*, March, 109–134.

Cooper, A., C. Y. Woo and W. C. Dunkelberg, 1989, 'Entrepreneurship and the Initial Size of Firms', *Journal of Business Venturing* **4**(5), 317–332.

Hamilton, D., P. Rosa and S. Carter, 1992, 'The Impact of Gender on the Management of Small Business: Some Fundamental Problems', in R. Welford (ed.), *Small Business and Small Business Development – A Practical Approach*, Bradford: European Research Press, pp. 33–40.

Hisrich, R. D. and C. G. Brush, 1983, 'The Woman Entrepreneur: Implications of Family, Educational and Occupational Experience', *Frontiers in Entrepreneurship Research*, Wellesley: Babson College, pp. 255–270.

Hisrich, R. D. and C. G. Brush, 1987, 'Women Entrepreneurs: A Longitudinal Study', *Frontiers of Entrepreneurship Research*, Wellesley: Babson College, pp. 187–189.

Johnson, S. and D. Storey, 1989–1993, 'Male and Female Entrepreneurs and their Business: A Comparative Study', Conference on Women Entrepreneurs: University of Bradford. Revised version in Allen S. and C. Truman (eds.), *Women Entrepreneurs*, Routledge, London, pp. 70–85.

Kalleberg, A. and K. T. Leicht, 1991, 'Gender and Organisational Performance: Determinants of Small Business Survival and Success', *Academy of Management Journal* **34**(1), 136–161.

Lipper, A., 1988, 'Defining the Win and Thereby Lessening the Losses for Successful Entrepreneurs', *Journal of Creative Behaviour* **22**(3), 172–177.

Longstreth, M., K. Stafford and T. Mauldin, 1988, 'Self-Employed Women and their Families: Time Use and Socio-Economic Characteristics', *Journal of Small Business Management* **25**(3), 30–37.

Mescon, T. S., G. E. Stevens and G. S. Vozikis, 1983–84, 'Women as Entrepreneurs', *Wisconsin Business Forum* **2**(2), 7–17.

Moser, C. A. and G. Kalton, 1971, *Survey Methods in Social Investigation*, London: Heinneman, 2nd Edition.

Nelton, S., 1990, 'The Challenge to Women', *Nation's Business*, July, 16–21.

Rosa, P. and D. Hamilton, 1994, 'Gender and Ownership in U.K. Small Firms', *Entrepreneurship Theory and Practice* **18**(3), 11–23.

Rosa, P., D. Hamilton, S. Carter and H. Burns, 1994, 'Impact of Gender on Small Business Management: Preliminary Findings of a British Study', *International Small Business Journal* **12**(3), 25–32.

Sexton, D. L., 1989, 'Research on Women's Business Owners', in O. Hagen, C. Rivchun and D. L. Sexton (eds.), *Women Owned Businesses*, New York: Praeger, pp. 183–193.

Storey, D., 1983, 'Small Firms Policies: A Critique', *Journal of General Management* **8**(4), 5–19.

Appendix: Details of equations examined

Variables in the equations

1)	Age of firm:	
	AGEFIRM	
2)	Sector:	
	TEXT.SEC	Textile sector (dummy 0,1)
	HOTEL.SEC	Hotel and catering sector (dummy 0,1)
3)	Ownership:	
	N.OWNERS	Number of owners
	NOOTH.BUS	Number of other businesses owned
4)	Finance:	
	INITCAP	Initial capital invested by respondent in the business
	FINREFUSD	Whether respondent had ever been refused finance (dummy 0,1)
5)	Networks:	
	ROT.CLUB	Whether a member of the Rotary Club or similar organizations (dummy 0,1)
6)	Subcontracting:	
	SUBCONT	Whether using subcontractors
7)	Education/Experience:	
	PREVBUS	Number of previous businesses owned
	CSE/O.Q	CSE or O level or equivalent at school (dummy 0,1)
	ALEVEL.Q	"A" level/higher or equivalent (dummy 0,1)
	CLERIC.Q	Clerical, secretarial qualification (dummy 0,1)
	TRADE.Q	Trade qualification or equivalent (dummy 0,1)
	VOCAT.Q	Vocational qualification or equivalent (dummy 0,1)
	PROF.Q	Professional qualification (dummy 0,1)
	DEGREE.Q	Higher education degree or equivalent (dummy 0,1)
8)	Personal Factors:	
	GROWTH	Desire for growth (0 = none, 1 = limited, 2 = unlimited)
	DOM.PTN	Having a domestic partner (dummy 0,1)
	YOUNGEST	Age of youngest child
	NO.CHILDN	Number of children
	AGERESP	Age of respondent
	SEXRESP	Sex of respondent.

Equations were examined for five dependent variables

Equation 1: Growth in employees since first year of trading

$$EMPGRO_i = \propto_0 + \beta_1 AGEFIRM_{ij} + \beta_2 TEXT.SEC_i + \beta_3 HOTEL.SEC_{ij} + \beta_4 N.OWNERS_i + \beta_5 NOTH.BUS_i + \beta_6 INITCAP_i + \beta_7 FIN.REFUSD_i + \beta_8 ROT.CLUB_i + \beta_9 SUB.CONT_i + \beta_{10} PREVBUS_i + \beta_{11} CSE/O.Q_i + \beta_{12} ALEVEL.Q_i + \beta_{13} CLERIC.Q_i + \beta 14\ VOCAT.Q_i + \beta_{15} PROF.Q_i + \beta_{16} DEGREE.Q_i + \beta_{17} GROWTH_i + \beta_{18} DOM.PTN_i + \beta_{19} YOUNGEST_i + \beta_{20} NOCHILDN_i + \beta_{21} AGERESP_i + \beta_{22} SEXRESP_i + \varepsilon_i$$

$i = 1, 2 \ldots n$

The equation was repeated for the following dependent variables

Equation 2: Number of permanent full time employees

$FT.EMP_i$ = (as equation 1)

Equation 3: Total number of employees

$ALL.EMP_i$ = (as equation 1)

Equation 4: Total sales turnover last financial year

$SALES.T_i$ = (as equation 1)

Equation 5: Value of capital assets

$CAP.ASSETS_i$ = (as equation 1).