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Testing the Female Underperformance Hypothesis*

by

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Abstract: Most previous studies have found evidence at the aggregate level that female entrepreneurs underperform relative to their male counterparts. This study conducts a comprehensive test of this finding. The test is conducted on a large Swedish sample of 4200 entrepreneurs (405 females) with 1 to 20 employees in all sectors of the economy. Our study confirms the results of several previous studies that female entrepreneurs tend to underperform relative to men when the data is examined at the most aggregate level. At the same time our data reveals sharp structural differences between male and female entrepreneurs. In an extensive multivariate regression with a large number of controls it turns out that female underperformance disappears for three out of four performance variables. The only exception is sales. No gender difference is found for profitability. A more detailed analysis reveals that the evidence of female underperformance is much weaker in larger firms and nonexistent in firms with only one employee. If it is true that female entrepreneurs on average have weaker preferences for sales growth, while we consistently find that they do not underperform in terms of profitability, our study provides no support for female underperformance given differences in preferences.

JEL Classification: D21, D92, J16, L11, M13.

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1. Introduction

In recent years the flow of research results regarding various aspects of entrepreneurship has grown into a veritable torrent. Questions frequently asked include the following: Who becomes an entrepreneur? Is entrepreneuership important for growth? What institutional factors encourage entreprenurship? What makes an entrepreneur successful? Regarding the latter question a small literature has emerged in recent years with the purpose of evaluating whether there are gender differences in the performance of entrepreneurs.

Brusch (1992) summarizes early research examining a great many aspects of female entrepreneurship. The bulk of the aggregate evidence from national data for the U.S. points towards female underperformance by conventional production, employment, profitability and other performance indicators. Rosa, Carter and Hamilton (1996) find a similar aggregate pattern using British data. Such macro observations may justify the formulation of a female underperformance hypothesis, which can be stated as follows: All else equal, female entrepreneurs tend to be less successful than their male counterparts in terms of conventional *economic* performance measures.[1] The purpose of the present study is to test this hypothesis empirically.

The study is organized as follows. In section 2 we briefly survey previous research on the topic with the twin purpose of reporting earlier results and suggesting improvements upon existing studies. Section 3 contains a description of our own data set and an exploratory bivariate tabulation of male-female differences in entrepreneurial performance. In Section 4 we present the main results from a disaggregation of the data set with respect to industry, size of firm and receiving sector, as well as a multivariate regression analysis. In section 5 we summarize our results and contrast them to previous findings.

In line with previous studies we also detect female underperformance at the most aggregated level. However, the subsequent analysis clearly reveals that this result only holds for one of the four performance variables that we examine. In that case it is largely due to the fact that female entrepreneurs tend to be active in small firms, the service sector and in firms that disproportionately produce for private consumption purposes. The gender effect tends to be of little importance in larger size classes and in trade and manufacturing.

[1]Admittedly, good economic performance is not the only objective for running a business. *Cf.* Lipper (1988, p. 173): ”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 accordingly.”

2. A Survey of Previous Research

Several studies – see Fischer (1992) and Rosa *et al.* (1996) for surveys – suggest that women entrepreneurs underperform relative to men as measured by conventional economic performance measures such as profitability and growth in sales, value added and employment. It appears that this result with few exception ensues when looking at aggregate comparisons of male and female entrepreneurs. On the other hand, there may be systematic gender differences in the choice of industry or other structural factors that explain the observed differences in performance. Thus, a test of the female underperformance hypothesis presupposes adequate statistical controls for other determinants in addition to gender. In recent years, a small literature with this purpose has emerged. As we will see below the findings become substantially less clear-cut compared to the raw (aggregate) comparisons.

First, it must be noted that there are a large number of studies that examine female-owned businesses *per se* – see Brusch (1992) for an extensive survey. The samples are often small. Examples of such studies include Cuba, Decenzo and Anish (1987), Chaganti (1986), Scott (1986) and Hisrich and Brush (1987). Although these studies provide useful insights into the attitudes and motivations of women entrepreneurs and problems they face, the lack of male control groups precludes performance comparisons across gender. However, a number of studies have made such comparisons.

Watkins and Watkins (1984) compared 49 female-owned and 43 male-owned businesses in the U.K. They found that female entreprenuers were much less likely to have had relevant prior training and experience, which led them to start up businesses in areas and at times that were less favorable compared to the typical male start up. Holmquist and Sundin (1988) is a comprehensive study of 1600 female-owned businesses in Sweden. They also compare 1440 female business owners to 317 male business owners. Their conclusion is that gender differences mainly manifest themselves in the selection of industry. Cromie (1987) reports no significant gender differences in motivation among 70 business owners in the start-up phase in Northern Ireland. Masters and Meier (1988) find no gender differences in risk-taking propensity in a study 50 U.S. entrepreneurs.

More specifically, to our knowledge there are four studies that directly focus on gender differences in traditional performance measures. Johnson and Storey (1993) study 298 U.K. businesses, 67 of which where female owned. They conclude that "women who do manage to set up and remain in business do not appear to differ markedly from those of male entrepreneurs“ (p. 85). Kalleberg and Leicht (1991) study roughly 300 firms in three industrial sectors in Indiana. Likewise, they conclude that women were just as successful as men. In contrast, Fischer (1992) found inferior performance among women entrepreneurs on a sample of Canadian firms in six different service industries. Rosa, Carter and Hamilton (1996) study 600 U.K. enterprises (half male/half female) in textiles and clothing, business services and hotel catering. They also find considerable differences by gender, and that female-owned businesses underperform in terms of number of employees, VAT registration, sales and capital assets. Furthermore, female entrepreneurs were less likely to own multiple businesses, less eager to plan for expansion, and where expansion was planned, their strategies for growth were often significantly different from those of their male counterparts.

Hence, from this brief summary we conclude that the empirical support for the female underperformance hypothesis is mixed, although it may be noted that the most thorough of the studies, Rosa *et al.* (1996), does not reject the hypothesis. However, the cited studies suffer from a number of methodological shortcomings. First, with few exceptions previous studies are based on very small samples. Second, in cases where the samples are larger they are nonrandom. Holmquist and Sundin (1988) compare female performance with a much smaller male control group and Rosa *et al.* (1996) have a random quota sample which does not reflect the true underlying population. Hence, regressions and significance tests cannot be interpreted in the conventional way. Third, the studies are often restricted to either manufacturing where women are underrepresented, or to a service sector where men are underrepresented. These shortcomings are avoided in the present study.

3. Our Own Test

From Statistics Sweden’s complete data set of Swedish firms and companies *Centrala Företagsregistret* (CFAR), we created a population consisting of all firms in Sweden with 1–20 employees. This population of about 137,000 firms are independent businesses with all kinds of private non-farm activities, subsidiaries of companies excluded. From this population a random sample was drawn – stratified by industry, size and region – consisting of 5,325 firms.

In the fall of 1995, telephone interviews were carried out, which resulted in a final usable sample of 4,200 firms. The response rate was exceptionally high for this kind of studies –79 per cent – probably thanks to the fashion by which the surveys were made.[2] The majority of previous studies have low response rates (in most cases well below 50 per cent), as entrepreneurs are disinclined to respond to lengthy mail surveys. Some aggregate information about the sample is provided in *Table 1*. Businesses from Manufacturing & Construction are overrepresented in the sample relative to the population as a whole.

Table 1 Population and sample.

Sector	No. of firms in the population	%	No. of firms in the sample	%
Manufacturing & Construction	35,130	26	1,592	38
Trade & Transportation	59,148	43	1,442	34
Services	43,217	31	1,166	28
All sectors	137,395	100	4,200	100

The questions were directed to the owner/manager of the business. The respondent was asked to indicate who played the chief managerial role in the firm at the time of the inquiry. It turned out that in 9 per cent of the firms (405 firms) a woman was the executive manager, and in 77 per cent of the firms (3,289 firms) this role was upheld by a man. In 14 per cent of the firms (503 firms) managerial control was exercised jointly by a man and a woman. The firms with joint managerial control were excluded from the subsequent analysis.

We will report results for the following four economic performance variables:

1. *Sales* = whether sales had increased during the last twelve months in real terms.
2. *Profitability* = whether profitability had improved during the last twelve months.
3. *Employment* = whether the number of employees had increased during the last twelve months.
4. *Orders* = whether the number of orders/commissions had increased during the last twelve months.

If the respondent indicates an improvement in a performance variable, the variable will assume the value 1, if the variable is unchanged or worsened it will assume the value 0. Thus, in the regression below we will have a binary dependent variable and we do not use size-related performance measures.

[2]The interviews were done by SIFO, the leading Swedish market research company.

Let us now turn to a preliminary exploration of the data set in the male/female dimension. *Table 2* reports the distribution of the number of employees among male and female-headed firms in the sample. The data displayed as well as a formal χ^2-test (p = 0.00) reveals that male-headed firms are significantly larger than female-headed firms.

Table 2 Number of full-time employees in female and male-headed firms.

No. of employees	Women No.	%	Men No.	%	All No.
1	96	25	355	11	451
2–4	159	40	1056	33	1215
5–9	96	25	1134	35	1230
10–19	34	9	581	18	615
20–49	4	1	104	3	615
50–	1	0	16	0.5	17
Total	390	100	3246	100	3636

Note: The keen reader will note that the sample contains some firms with more than 20 employees despite the fact that the sample was restricted to firms having 1–20 employees. This is due to the fact that some firms have become larger than 20 employees between the time when they were selected from the register and the time of the interview.

The respondents were also asked to which industry their main business activities belonged. This information was checked against the classification made in CFAR of each firm. If the classification diverged the respondent's answer was used. As shown in *Table 3* female-headed firms are more frequent in Services and in Trade & Transportation, while male firms are more predominant in Manufacturing & Construction. At the more disaggregated level women have a disproportionately large shares in Retail trade and Other services.

Table 3 Number of full-time employees in female and male-headed firms.

Sector	Industry	Women No.	Women %	Men No.	Men %	All No.
Manufacturing &	Manufacturing	48	12.1	674	21.1	722*
Construction	Construction	13	3.3	594	18.6	607*
Trade &	Wholesale trade	12	3.0	275	8.6	287
Transportation	Retail trade (nondurables)	36	9.0	106	3.3	142
	Retail trade (durables)	103	25.8	488	15.3	591*
	Transportation	12	3.0	215	6.7	227
Services	Consulting	74	18.5	627	19.6	701
	Other services	102	25.5	220	6.9	322*
	Total	400	100	3,199	100	3,599

Note: A χ^2-test indicates a significant overall difference in the industrial distribution of female and male-headed firms ($p = 0.00$). A * indicates a significant difference at the 1% level or better for that particular industry.

A further classification of firms can be made according to the nature of the ultimate market or customer. In order to examine whether there are systematic differences between male and female firms in this respect the respondent was told to classify how much of the production/services that went to three different receiving sectors: (i) private consumption, (ii) the public sector, and (iii) other firms. These questions were posed to a random sample of all respondents. From *Table 4* it is evident that almost half of the female-headed firms have their customers in the private consumption field. More than every second male-headed firm have less than 20 per cent in the same sector. There is a significant gender difference in this respect. Regarding sales to the public sector, gender differences are smaller, although female firms are disproportionately reliant on the public sector as a customer ($p = 0.003$ in a χ^2-test).[3] Finally, *Table 5* reveals a clear tendency among male firms to sell to other firms; almost half of the male firms sell more than 50 per cent of their produce to other firms as intermediate inputs, while the corresponding figure for female firms is roughly 25 per cent. Entrepreneurs that sold more than 10 per cent of their produce to other firms were also asked about the size of their three largest customers. It turned out that male-headed firms, on average, tended to sell to larger customers than female-headed firms (details available upon request).

[3]Detailed results are available upon request.

Table 4 Share of sales to private consumption in female and male-headed firms.

Share of sales to private consumption (%)	Women		Men		All
	No.	%	No.	%	No.
0–20	60	30	884	55	944
21–50	20	10	224	14	244
51–80	23	11.5	196	12.2	219
80–100	97	48.5	302	18.8	399
Total	200	100	1,606	100	1,806

Note: A χ^2-test indicates a significant overall difference in the industrial distribution of female and male-headed firms ($p = 0.00$).

Table 5 Share of sales to other firms in female and male-headed firms.

Share of sales to other firms (%)	Women		Men		All
	No.	%	No.	%	No.
0–20	112	61.2	511	32.7	623
21–50	24	13.1	317	20.3	341
51–80	14	7.7	245	15.6	259
80–100	33	18.1	491	31.4	524
Total	183	100	1,564	100	1,747

Note: A χ^2-test indicates a significant overall difference in the industrial distribution of female and male-headed firms ($p = 0.00$).

A number of questions were posed to assess how well entrepreneurs thought that there businesses were performing. As *Table 6* shows perceived profitability does not differ between the sexes. In contrast, the perceived rate of growth was higher among male entrepreneurs. The respondents were asked how they perceived the current growth rate of their firm. The results are reported in *Table 7*. Almost 12 per cent of the male entrepreneurs perceived that the growth rate was ”very rapid” compared to 5.9 per cent for females. At the same time, it should be noted that the no growth share is practically identical for men and women.

Table 6 Perceived profitability in female and male-headed firms.

	Women		Men		All
	No.	%	No.	%	No.
Very good	31	7.7	312	9.5	343
Satisfactory	218	53.8	1,799	54.7	2,017
Less good	133	32.8	1,048	31.9	1,181
Running at a loss	21	5.2	121	3.7	142
Cannot answer	2	0.5	9	0.3	11
Total	405	100	3,289	100	3,694

Note: A χ^2-test does not indicate a significant overall difference in the perceived profitability of female and male-headed firms ($p = 0.383$).

Table 7 Perceived rate of growth in female and male-headed firms.

At the moment we perceive:	Women No.	%	Men No.	%	All No.
Very rapid growth	24	5.9	386	11.7	410
Steady and smooth growth	221	54.6	1,681	51.1	1,902
No growth	113	27.9	905	27.5	1,018
Negative growth	32	7.9	260	7.9	292
We are closing down	5	1.2	23	0.7	28
Do not know	10	2.5	34	1.0	44
Total	405	100	3,289	100	3,694

Note: A χ^2-test indicates a significant overall difference in the perceived of female and male-headed firms ($p = 0.002$).

Regarding growth we also asked entrepreneurs about the perceived prospects for growth and not just the current growth rate. As *Table 8* shows a significantly larger fraction of the male entrepreneurs perceive good prospects for expansion. But the table also shows that among those who perceive that they can expand, there is no difference between men and women in the intention to carry out the perceived opportunity for expansion.

Table 8 Perceived prospects for growth and growth intentions in female and male-headed firms.

Are there good prospects for expansion?	Women No.	%	Men No.	%	All No.
Cannot expand	217	53.6	1,454	44.2	1,671
Can expand	166	41.0	1,682	51.1	1,848
Not sure, do not know	22	5.4	153	4.7	175
Total					
If yes, will you carry out such an expansion?					
Will expand	107	68	1,046	62	1,153
Will not expand	34	21	398	24	432
Not sure, do not know	25	15	238	14	263
Total	166	100	1,682	100	1,848

Note: A χ^2-test indicates a significant overall difference in the perceived prospects for expansion of female and male-headed firms ($p = 0.001$). However, there is no significant difference in the intentions among female and male firms that perceive good prospects for expansion ($p = 0.648$).

Finally, we report the raw (unadjusted) results from our survey on economic performance in *Table 9*. The figures show the percentage of firms that have improved performance according to the measure in question during the previous year. In terms of the proportion that has increased sales, profitability and employment in the previous year, there is significant female underperformance relative to men. The difference is particularly pronounced for the sales measure.

Table 9 Economic performance in female and male-headed firms.

Per cent of firms with an increase during previous year in:	Women No.	Women %	Men No.	Men %	χ^2-test *p*-value
Sales	133	32.8	1,765	53.7	0.000
Profitability	128	31.6	1,284	39.0	0.000
Employment	81	20.0	971	29.5	0.000
Orders	111	43.7	1,235	51.0	0.173

In summary, we have identified systematic structural differences between male and female-headed firms in several respects. Female-headed firms tend to be smaller, to be underrepresented in manufacturing and overrepresented in services, to produce more for private consumption and for the public sector than do male firms, and among firms selling/producing intermediate inputs, male firms tend to have larger customers. In our sample we also find a significant difference in performance except for orders. Female underperformance is particularly pronounced for growth-related measures, while in terms of profitability the difference is much smaller. This also translates into lower expectation among female entrepreneurs for future growth, although among those who see a potential for expansion, women are at least as likely as men to believe that the potential can be realized.

The large structural differences that we have identified between male and female entrepreneurs point towards a need for further inquiry. To the extent that these structural factors are important determinants of economic performance they need to enter into a thorough evaluation of the female underperformance hypothesis. For instance, gender differences found at the aggregate level may be spurious if more women than men are active in sectors associated with low sales and low growth.[4]

[4]An interesting parallel can here be drawn to the gender wage gap. A careful examination by Meyerson, Petersen and Snartland (1999) find that the share of the Swedish gender wage gap that can be explained by wage discrimination is negligible. When men and women occupy the same position they receive equal pay, and hence, there is little evidence of within-job discrimination. On the other hand, there is a systematic tendency for women to hold the less well paid positions, which results in a substantial aggregate wage gap.

4. Multivariate Results

Are there still gender difference in the performance variables when structural factors such as firm size, industry and the receiving sector are taken into account? To answer this question a multivariate regression analysis is called for. Since the dependent variable is binary we use a logistic regression model.

The four performance measures already examined above are used as dependent variables. The independent variables entering the regressions are the following:

Gender = Sex of the head of the firm (man = 1; woman = 0)

Size = Number of employees (1 = 1 employee; 2 = 2–4 employees; 3 = 5–9 employees; 4 = 10–19 employees; 5 = 20+ employees).

Manufacturing = Is it a manufacturing or construction firm? (yes = 1; no = 0).

Services = Is it a service sector firm (consulting or other services)? (yes = 1; no = 0).

Enterprise firms = More than 80 per cent of produce sold to other firms (yes = 1; no = 0).

Household firms = More than 80 per cent of produce sold to households (yes = 1; no = 0).

Exporter = Direct export or export via reseller or subcontractor to another exporter (yes = 1, no = 0).

Importer = Importing directly (yes = 1; no = 0).

Growth prospects = Are the prospects for expansion good? (yes = 1; no = 0).

Growth propensity = If yes, will you accomplish such an expansion? (yes = 1; else =0).

Credit application = The firm has applied for a bank credit (yes = 1; no = 0).

Full capacity = The firm works at full capacity (yes = 1; no = 0).

In *Table 10* we report regression results without controlling for the receiving sector, i.e., whether other firms or households are the dominant customers. According to the regression results gender is not a significant determinant of performance except for sales. In terms of sales growth male entrepreneurs tend to perform better than female entrepreneurs even when a large number of other potential factors are controlled for. The results in *Table 11*, which include the potential effects of different receiving sectors, are similar; female underperformance is found for the sales variable only. In all estimated equations the model significantly predicts the value of the dependent variable, which is manifested by the significance of Model χ^2.

Table 10 Regression results including all firms.

	Sales		Profitability		Employment		Orders	
	Coeff.	Wald	Coeff.	Wald	Coeff.	Wald	Coeff.	Wald
Gender	0.72*	22.20	0.11	0.56	0.12	0.52	0.14	0.94
Size	0.06*	2.11	0.02	0.14	0.04	0.65	0.08*	3.53
Manufacturing	–0.24	2.22	0.05	0.18	–0.15	0.78	0.04	0.06
Services	–0.31	3.73	0.04	0.05	–0.46*	6.93	–0.04	0.06
Exporter	0.73*	54.21	0.55*	32.59	0.60*	35.49	0.48*	24.04
Importer	0.20	2.86	0.09	0.73	0.26#	5.29	0.32*	7.64
Growth prospects	0.83	52.94	0.74*	43.49	0.67*	30.31	0.92*	68.10
Growth propensity	0.39	9.39	0.40*	11.83	0.38*	9.81	0.37*	8.91
Credit application	0.18	2.31	–0.16	1.87	0.52*	19.65	0.20	2.80
Full capacity	0.52*	35.07	0.32*	13.38	0.34*	13.81	0.55*	39.35
Constant	–1.56*	41.73	–1.48*	37.77	–1.88*	51.83	–1.49*	39.24
No. of selected cases	4,206		4,206		4,206		4,206	
No. rejected	1,684		1,684		1,684		1,684	
Cases included	2,522		2,522		2,522		2,522	
Model χ^2	383		239		287		354	
p-value	0.00		0.00		0.00		0.00	
% correct predictions	66		65		70		66	

Note: # and * denote significance at the 5 and 1% levels, respectively.

Table 11 Regression results when the receiving sector is included among the regressors.

	Sales		Profitability		Employment		Orders	
	Coeff.	Wald	Coeff.	Wald	Coeff.	Wald	Coeff.	Wald
Gender	0.60*	6.95	0.26	1.32	–0.10	0.18	0.05	0.04
Size	0.04	0.44	–0.03	0.15	0.01	0.01	0.07	1.14
Manufacturing	–0.33	1.79	0.05	0.04	–0.09	0.15	0.25	1.02
Services	–0.34	1.76	–0.00	0.00	–0.40	2.34	0.07	0.07
Enterprise firms	0.24	2.58	0.14	0.98	0.11	0.49	0.09	0.40
Household firms	–0.13	0.48	0.42*	8.00	–0.21	1.12	0.08	0.22
Exporter	0.65*	18.25	0.52*	8.36	0.44#	8.36	0.40*	7.30
Importer	0.11	0.39	0.09	0.30	0.17	1.02	0.05	0.10
Growth prospects	0.83*	23.70	0.74*	19.96	0.60*	11.43	0.89*	28.28
Growth propensity	0.36	3.74	0.34#	3.97	0.42#	5.68	0.36	3.98#
Credit application	0.27	2.17	–0.15	0.81	0.43#	6.13	0.27	2.42
Full capacity	0.48*	13.57	0.19	2.31	0.32#	5.62	0.56*	18.78
Constant	–1.35*	12.80	–1.29*	12.27	–1.45*	13.70	–1.41*	14.63
No. of selected cases	4,206		4,206		4,206		4,206	
No. rejected	3,067		3,067		3,067		3,067	
Cases included	1,139		1,139		1,139		1,139	
Model χ^2	174		100		112		146	
Significance	0.00		0.00		0.00		0.00	
% correct predictions	67		64		69		66	

Note: # and * denote significance at the 5 and 1% levels, respectively.

Thus, we may conclude that our multivariate tests show female underperformance in the sales variables but not in any of the other three variables, profitability, employment and orders. When we split the data set further (details available upon request or see Du Rietz, 1998) we can see that the female underperformance results found for sales are mainly driven by male–female differences in the 2–4 size class and in services. On the other hand, there are no differences in the smallest size class (1 employee). The differences are also small in firms with 5–19 employees.

5. Concluding Remarks

Previous empirical tests of performance differences between male and female entrepreneurs suffer from various shortcomings. This study improves upon previous studies in several respects.

First, the sample is large and random. It consists of 4,200 small businesses from all kinds of industries and from all regional parts of Sweden. The large sample size has allowed us to make more disaggregated comparisons. Second, the response rate is higher (almost 80 per cent) than in other comparable studies, which increases the reliability of the results. When entrepreneurs refuse to reply this may indicate that the business is not successful. This means that surveys with a low response rate may have a selection bias in their sample (e.g., Kalleberg and Leicht, 1991 and Fischer, 1992). Third, the sex of the entrepreneur was identified by a direct question and all mixed ownership firms were dropped. In most prior studies the sex of the respondent has been the criteria for identifying the sex of the entrepreneur. Fourth, the economic performance variables are expressed as a binary variable capturing whether sales, profitability, employment or orders increased in the previous year. Other studies have used proxies for performance variables which are size related, such as number of employees, capital assets *et cetera* (e.g., Rosa *et al.*, 1996). These performance variables have a hidden size dimension, which may bias the estimate of the gender effect. Finally, the potential effect of the economic structure of the market where the ultimate customer operates is accounted for. This introduces a new – previously unexploited – dimension to the gender comparison.

Our study confirms the results of several previous studies that female entrepreneurs tend to underperform relative to men when the data is examined at the most aggregate level. At the same time our data reveals sharp structural differences between male and female entrepreneurs, where female entrepreneurs, among other things, tend to run smaller firms, be underrepresented in manufacturing and construction, be less export-oriented, and to be disproportionately reliant on households as customers. In an extensive multivariate regression with a large number of control variables it turns out that female underperformance disappears for three out of four performance variables. The only exception is the sales variable. It is particularly noteworthy that no gender difference is found for profitability. Even at the most aggregated level there is no significant difference in perceived profitability across gender. A more detailed analysis reveals that the finding of female underperformance in sales growth is to a substantial extent driven by the 2–4 size class; the evidence of female underperformance is much weaker in larger firms and nonexistent in firms with only one employee.

Strictly speaking, the female underperformance hypothesis is only true if the economic performance of female entrepreneurs is inferior to the performance of their male counterparts with *identical* preferences. This aspect has been touched upon in previous studies. Sexton (1989) note that more women than men may deliberately choose not to grow their businesses, instead pursuing other goals. Rosa *et al*. (1996) find some support for this view when they find that men were significantly more likely to want to grow their businesses as far as they could. Goffee and Scase (1985) suggest that female entrepreneurs differ from male entrepreneurs in that they tend view their business as but one component of a wider system of relationships including family, community and friends. In this vein, Carter and Cannon (1992) suggest that there is a tendency among female entrepreneurs to run their business in such a way that the interest of the immediate family does not get into conflict with the business. Thus, women are found to regard proprietorship as a mechanism for achieving independence and control over their working lives. Small businesses allegedly offer women greater flexibility facilitating the reconciliation of work requirements and family commitments, while customary employment contracts in large firms are mainly designed for male employees (Scott, 1986; Chaganti, 1986; Holmquist and Sundin, 1988).

If it is true that female entrepreneurs on average have weaker preferences for sales growth, while we consistently find that they do not underperform in terms of profitability, it is clearly the case that our study provides no support for female underperformance according to a strict interpretation of the hypothesis.

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