The Present and the Future:

Gender Differences in the Nature and Scale of Entrepreneurial Activity and Potential Activity in the UK

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Abstract

Gender issues have been at the forefront of academic and political discussion in the context of entrepreneurship and entrepreneurial activity. In this paper we provide detailed evidence from a UK adult population survey on various measures of entrepreneurial activity or potential activity. In doing so we not only put hard figures on the nature of women's involvement, but show precisely what types of women are physically active as entrepreneurs, or are likely to become engaged in future entrepreneurial activity. For comparative purposes we present identical information for men. The key findings are that Caribbean women and African men are the most entrepreneurial along with women born in Northern Ireland but who migrated to other regions of the UK. For both men and women cultural / attitudinal orientation is important, as are entrepreneurial role models. Significantly, fear of failure is not a deterrent for women. It is for men. Finally, our evidence suggests that the gender gap will close slightly over the next few years if entrepreneurial intentions are converted into actions.

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1 Introduction

Gender issues have been at the forefront of academic and political discussion in the context of entrepreneurship and entrepreneurial activity (Blanchflower et al., 2001; Parker, 2003) since it became apparent that women's share of the entrepreneurial sector is far less than their representation in the labour market as a whole. Yet as Cowling (2002), in an EU wide study of 15,800 workers, points out, much of this observed gender difference is unrelated to gender *per se*, but is more related to differences in the sectoral, and occupational, distributions of male and female workers.

Alongside this debate is the issue of gender and its impact on the performance of small business (Kalleberg and Leicht, 1991). Here there is also controversy. For example, studies by Brusch (1992) and Rosa et al. (1996) have pointed to female under-performance. The more recent empirical work of Du Rietz and Henrekson (2000) provides evidence of better female performance. Cowling *op cit*, shows that although fewer women enter business in the UK, they are equally as likely to create jobs holding other critical factors such as occupation, sector, education etc constant. However, this result did not hold across the EU-15.

In this paper we provide detailed evidence from a UK adult population survey on various measures of entrepreneurial activity or potential activity. By doing so we not only put hard figures on the nature of women's involvement, but show precisely what types of women are physically active as entrepreneurs, or are likely to become engaged in future entrepreneurial activity. For comparative purposes we present identical information for men. The rest of the paper is set out as follows; in the next section we review the relevant literature. Here we cover a number of key issues, notably discrimination, employment opportunity, labour market participation and then set this in the context of empirical studies of business start-up and growth. Section III discusses the source of our data and summarises the sample statistics. In section IV we present our econometric results regarding the determination of male and female involvement or otherwise in our four key measures of actual and potential entrepreneurial activity. We conclude in section V.

2 Literature Review

In the UK, as in many developed countries, women have a majority share of total employment. Yet, as alluded to earlier, it is still the case that in virtually all countries for which data is available, women remain in a minority in the entrepreneurial sector of the labour force (Parker, 2003; Fairlie and Meyer, 1996; Cowling, 2000). There is, however, evidence that women are increasing their share over time (Evans and Leighton, 1989; Devine, 1994).

Labour market discrimination has been put forward as an explanation for the increase in entrepreneurial activity amongst women[1]. Indeed much of the early literature suggested that self-employment is an obvious, and favoured, choice for women facing discrimination in the waged sector (Sowell, 1981; Moore, 1983). Yet Coate and Tennyson

[1] This has also been used in the context of ethnic minority groups and self-employment (see Parker, 2003).

(1992) argue that the same types of discrimination can spill over into markets relevant to self-employment and entrepreneurial activity. Here, they specifically refer to the credit market as being the key market for potential entrepreneurs. It follows that if suppliers of credit also discriminate against women, then they will face higher borrowing costs and thus be deterred from entry into the entrepreneurial sector (Hisrich and O'Brien, 1981; Colerette and Aubrey, 1990). Or if they do enter, then they will be at a relative disadvantage compared to male owned businesses with lower costs of capital (Cowling and Taylor, 2001). Alternatively, women with capital constraints who do set up new businesses will be more likely to enter highly competitive sectors with relatively low start-up costs, low barriers to entry and higher exit rates.

The role of networks in increasing the flow of information about labour market opportunities, and indeed entrepreneurial opportunity, has also been raised in the literature (Datcher, 1983). In this context, uncertainty about next best alternatives is reduced either by direct work experience in relevant sectors, or by networks of informal contacts. For potential entrepreneurs access to new market developments, sources of supply, and customers all play a role in the decision to start a new venture, assuming one has identified a potentially viable business opportunity. For groups of workers with more fragmented labour market histories (eg the unemployed or women of child rearing age) these kinds of contacts may be more difficult to develop and maintain.

The emerging body of work, which considers the role of the husband in the household, opens up some fruitful avenues of enquiry. For example, the US based empirical work of Caputo and Dolinsky (1998) and Bruce (1999) shows that, for women, having a self-employed spouse significantly increases the probability of the wife becoming self-employed. This is confirmed by empirical evidence in Cowling and Taylor (2001), and Cowling et al. (2003), both for the UK. It may well be the case that 'husbands may enable women to overcome capital constraints; provide role models, business skills and valuable advice; and free up the woman's time to enable her to run her business' (Parker, 2003, p.180).

The roles of marital status, and household composition, were also raised by Dolton and Makepeace (1987) in the context of family role specialisation and the allocation of time between home and market production. From this, the authors argued that it is the greater time allocation of women to childcare supervision that encourages them to seek out employment that complements this role. This is supported by recent empirical evidence for the EU-15, reported in Cowling (2002), which showed that for males the presence of young children reduced self-employment probabilities, but for women it increased them. This evidence also draws support from Boden (1996) and Carr (1996). A further insight from Carr *op cit*, was that around twenty percent of US female self-employed worked from home compared to only six percent of male self-employed (see also Edwards and Field-Henry, 2002). These findings, taken together, support the flexibility of self-employment over waged employment hypothesis.

We now move on to consider the empirical literature that has explicitly tested for identifiable gender effects on start-up business survival and growth. For relevance, we only draw upon the most recent, cross-country evidence, which has used robust, multivariate analysis. These findings are presented in Table 1 below.

Table 1: Empirical Evidence on Gender Effects on Business Survival and Growth

Study	Male Effect on Survival	Male Effect on Growth
Taylor (1996) UK	0	n.a
Pfeiffer and Reize (1998) Germany	0	n.a
Cowling and Hayward (2000) UK	0	n.a
Bosma et al. (2002) Netherlands	+	+
Lin et al. (2000) Canada	+	n.a
Meager et al. (2003) UK	0	0
Cowling (2003) UK	0	-ve
Cowling (2002) EU-15	n.a	+
Cowling (2002) UK	n.a	0
Bruderl et al. (1998) Germany	n.a	+

As we observe from Table 1, only two studies, in the Netherlands and Canada found that male owned business start-ups were significantly more likely to survive than comparable female owned businesses. The evidence for the UK strongly refutes this and is particularly important as the two studies (Cowling and Hayward, 2000; Cowling, 2003) cover a large sample of unemployed people starting up new businesses over a ten year period, and the Meager et al. (2003) study covers a sample of people under the age of thirty when they started their businesses. If we follow the discrimination argument proposed earlier, then we might expect that young, and unemployed women would find it particularly difficult to start a new business and sustain it.

There is more evidence to suggest that women are less likely to grow their businesses, although once again it is not conclusive. However, it does draw support from the US findings of Lee and Rendall (2001) that women, although likely to have similar numbers of total spells in self-employment as men, tended to have generally shorter spells *per se*. By implication it gives women less time to grow their business and/or less inclination if they know their spell will not be long lived. This is consistent with differences in motivations for becoming self-employed between men and women (Aronson, 1991; Taylor, 1996), rather than a quality-based argument.

3 Data

The data to be examined is derived from a UK adult population survey carried out in July 2002 as part of the Global Entrepreneurship Monitor (GEM) project, a cross-country study of entrepreneurial activity. The sample contains telephone interview records from a total of 16,002 adults across the UK. The initial sampling frame is weighted to take into account the age and gender distributions in the adult population. There is also allowance made to ensure adequate regional coverage. For the main questionnaire information is collected on personal and labour market demographics. But for those involved in any form of entrepreneurial activity a further set of questions are asked relating specifically to their activities in business. As the majority of the UK adult population are not involved in any

entrepreneurial activity, they only answer the first part of the questionnaire. It is this data that we use for our analysis.

There are three questions in the survey asked of all respondents that have direct relevance to our analysis. These are:

1. Are you currently the owner of a business? If so for how long have you paid wages or salaries?
2. Are you, alone or with others, currently starting a business?
3. Are you likely to start a new business within the next three years?

From question 1, respondents are split into those who have been trading for more than 42 months who are called owner-managers, and those who are younger who are termed start-ups. Question 2 identifies those currently involved in the business start-up process but who are not quite at the stage where formal trading activity has begun. The final question identifies potential entrepreneurs who might start up a new venture in the next three years.

Table 2: Entrepreneurial Activity, and Potential Rates, by Gender

	Future Potential Start-up	Involved in Start-up Activity	Business Start-up	Owner-manager
Male	6.7	4.0	4.2	12.4
Female	2.9	1.5	1.7	5.3

(% of adult population within gender)

Table 2 shows the proportion of the UK adult population involved in various forms of entrepreneurial activity, or potential activity disaggregated by gender. The evidence supports the fact that the majority of total entrepreneurial activity is from males. Yet there are subtle differences in the relative share of female activity out of total activity. For example, the female share of total current involvement in start-up activity is 27.3%. Yet out of future potential start-up activity this is 30.2%. The interesting question is whether this potential is converted into real start-up activity. Two issues arise. Firstly, how many potential entrepreneurs actually start, the conversion rate and does this vary by gender? Secondly, if fewer women actually move to the start-up phase, why is this so? Are there barriers that are specific to women that are preventing them from starting? Our subsequent analysis can shed some light on this by identifying differences between those women who have actually started and those who indicated their potential. We now present the basic sample statistics with a concurrent discussion. These are shown in Table 3.

From Table 3 there is a logical ordering as far as age is concerned with men and women getting progressively older as they move further up the entrepreneurial scale from potential entrepreneurs to established owner-managers. For example, the average age for women with entrepreneurial potential is thirty-eight. For women actively involved in the start-up process this rises to forty-one. A few months' later women are most likely to be a genuine business start. Finally, the average age of female owner-managers is forty-six. Broadly speaking males follow an identical pattern.

Table 3: Sample Statistics for Gender and Entrepreneurial Activity Type or Potential

	Business Start		Involved in Start-up Activity		Owner-Manager		Future Potential Start-up	
	Male	Female	Male	Female	Male	Female	Male	Female
Age	41.5	41.4	40.5	41.1	45.8	45.7	37.2	38.0
Know Entrepreneur	54.6	50.7	61.3	62.1	45.7	38.3	59.6	49.4
Start-up Skills	90.8	81.4	94.6	86.3	86.6	77.3	86.8	75.3
Fear Failure	20.7	29.1	22.8	26.0	19.1	23.9	23.1	31.0
Birthplace								
England	50.8	58.8	56.1	57.6	57.7	62.6	55.8	56.8
N.Ireland	12.2	7.8	10.0	8.3	11.8	7.0	9.2	7.7
Scotland	8.8	9.1	10.4	9.1	9.0	9.9	11.1	12.0
Wales	5.1	5.9	5.7	6.8	7.4	7.2	5.6	6.6
Out of UK	12.2	7.8	12.1	9.8	7.5	6.6	12.7	10.8
Education								
None	17.5	24.0	15.2	18.3	24.1	29.4	19.1	19.8
School	49.3	41.1	45.9	45.2	47.1	44.0	47.5	41.3
Post-school	22.4	27.4	27.4	26.2	20.6	16.0	22.6	27.5
Graduate	10.8	7.5	11.5	10.3	8.2	10.6	10.8	11.3
Ethnicity								
White	92.7	92.0	92.3	92.5	95.7	91.7	91.0	93.4
Caribbean	1.2	3.6	1.5	4.2	0.1	0.5	0.9	1.6
Asian	4.3	1.5	3.9	0.8	2.8	0.7	6.0	2.5
African	1.9	1.5	1.9	1.7	0.6	0.5	0.9	1.2
Other	0.0	1.5	0.4	0.8	0.7	0.7	1.2	1.2
Region								
East Midlands	57.1	42.9	55.0	45.0	66.2	33.9	58.3	41.7
East	82.8	17.2	88.5	11.5	71.4	28.6	69.6	30.4
London	65.9	34.1	66.7	33.3	60.7	39.3	64.1	35.9
North East	69.2	30.8	70.0	30.0	68.4	31.6	66.2	33.8
North West	89.5	10.5	88.9	11.1	65.5	34.5	73.5	26.5
N.Ireland	78.7	21.3	77.5	22.5	72.6	27.5	68.0	32.3
Scotland	63.8	36.2	68.8	31.3	64.7	35.3	62.8	37.2
South East	64.8	35.2	71.6	28.4	65.9	34.1	66.1	33.9
South West	60.7	39.3	57.6	42.4	65.5	34.5	63.6	36.4
Wales	60.4	39.6	59.2	40.8	61.1	38.9	58.6	41.4
West Midlands	50.0	50.0	57.9	42.1	56.6	43.4	70.3	29.7
Yorks & Humberside	29.4	70.6	43.8	56.3	52.5	47.5	40.9	59.1

It is also evident that men are more likely to have entrepreneurial role models, although for those currently involved in start-up activity proportions are equivalent. Men are also more likely to believe they have entrepreneurial skills than women. Interestingly, and perhaps reassuringly, large proportions of actual and potential entrepreneurs hold this belief suggesting that attitudes play a significant role in the decision to get engaged in entrepreneurial activity. Fear of failure is also an issue in which males and females differ. On this, women are much more likely to still engage in entrepreneurial activity even if they fear the consequences of failure. In a general sense, the further an individual is advanced down the entrepreneurial career path, the less afraid of failure he or she becomes.

Regarding place of birth, women entrepreneurs are more likely to be English or Welsh born than their male counterparts. However, in the future this divide is likely to diminish as fewer English born women start businesses. It is also apparent that foreign born males are more likely to be involved in entrepreneurial activity than foreign born women. On ethnicity, Caribbean women are much more entrepreneurial than their male counterparts. By contrast, Asian men are more entrepreneurial than their female counterparts. In the future, we may observe more women from white and African ethnic backgrounds starting businesses, and an increase in male Asian entrepreneurial activity.

On education, it is the case that women currently involved in entrepreneurial activity are more likely than men to be very poorly educated. Yet the signs are that this will disappear in the future as more and more educated women begin to start up their own businesses. As increasing numbers of women enter higher education in the UK, it is likely that their share of total entrepreneurial activity will rise, although this trend appears to be already evident, albeit it on a smaller than predicted scale.

In terms of the regions of the UK, males dominate entrepreneurial activity in the East of England. However, it is likely that women will begin to redress this imbalance in the future. London, by contrast, is a region in which male-female shares are fairly stable across all our measures of entrepreneurial activity, current and potential future. The North West is also a region in which current, and new, activity is dominated by males, although the established and future stock is around the UK average. It is in the East and West Midlands where women are very well represented across the entrepreneurial spectrum. But Yorkshire & Humberside is the UK hotspot for female entrepreneurial activity. From potential future entrepreneurs, through to those actively running a new business, women in this region have a majority share of entrepreneurial activity. The signs are that this will continue into the future.

4 Econometric Results

In this section we econometrically investigate the determinants of our three measures of entrepreneurial activity and one of potential future activity. Our basic procedure is to estimate a series of probit models which take into account the binary nature of the dependent variable which is coded 1 if entrepreneurial and 0 if not. To allow more meaningful interpretation of the results generated we choose to report the marginal effects of the probit models.

The empirical results were generated using a basic probit model with likelihood function:

$$\ln L = \sum \omega_j \ln \Phi (x_j b) + \sum \omega_j \ln (1- \Phi (x_j b))$$

where Φ is the cumulative normal distribution. This reflects the binary nature of the dependent variable that is coded 1 if the individual is an entrepreneur and 0 otherwise. The actual estimates reported are the marginal effects calculated around the means of the independent variables.

If **b** and **V** are denoted as the coefficients and variance matrix then for continuous variables the estimates reported show:

$$b_i^* = \partial\Phi(\mathbf{xb})/\partial x_i \,|_{x=\bar{x}} = f(\mathbf{xb})\, b_i$$

where the *i*'s refer to the *i*th element of **b**. For dummy variables (our [0,1] coded variables) the estimates reported are for a discrete change in the respective variable from 0 to 1. This is calculated by $b_i^* = \Phi(x_1\mathbf{b}) - \Phi(x_0\mathbf{b})$.

The actual estimating equation can be expressed thus:

$$\Pr(\text{Entrepreneur}=1) = \Phi(\beta_0 + \beta_i X_i)$$

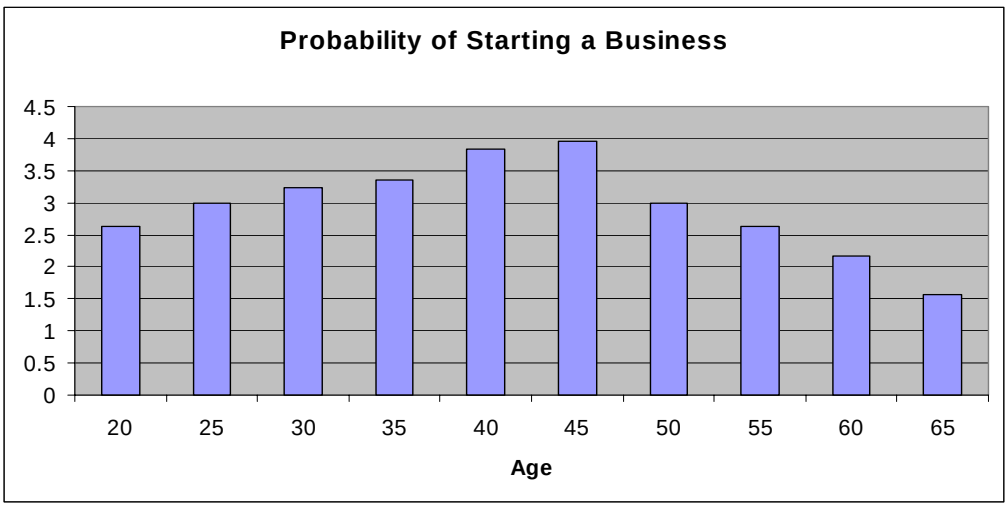
where X is a vector of attitudinal, cultural, regional and personal characteristics identified in the previous section.

We begin by discussing the results for those currently running a newly founded business.

4.1 Business Start-Up

For women, no age effects were apparent. Age, however, was important in the male decision. The coefficients on the age, and age squared, terms show a concave relationship with start-up probabilities which increase up to the age of forty-five then diminish rapidly (see Figure 1). Education did not matter for either gender. This suggests that formal education does not influence the probability of men or women starting a business.

Figure 1: Age Effects on Male Business Start-up Probability



Culture, role models and skills perception were also found to be important in raising or lowering start-up probabilities. For men, a fear of failure will significantly reduce start-up probabilities. Yet women are equally likely to start a business regardless of whether they fear failure or not. In addition, the perception that you have the requisite skills to start a business actually increases the probability of doing so. The scale of this effect is larger for men, +4.2%, than women, +2.6%. Finally, knowing an entrepreneur was also found to raise business start-up probabilities. This suggests that there is a positive role model effect, possibly combined with a potential networking effect. Once again, the scale of this effect was different for men and women. For the former, knowing an entrepreneur raised start-up probabilities by 3.1%. This compares to only 1.3% for women.

Ethnicity was also important, yet the nature of these effects were different for men and women. For males, Africans were 7.3% more likely to be starting a business than any other ethnic group. By contrast, Caribbean women were most likely, +5.2%. These are new and important findings that merit further investigation.

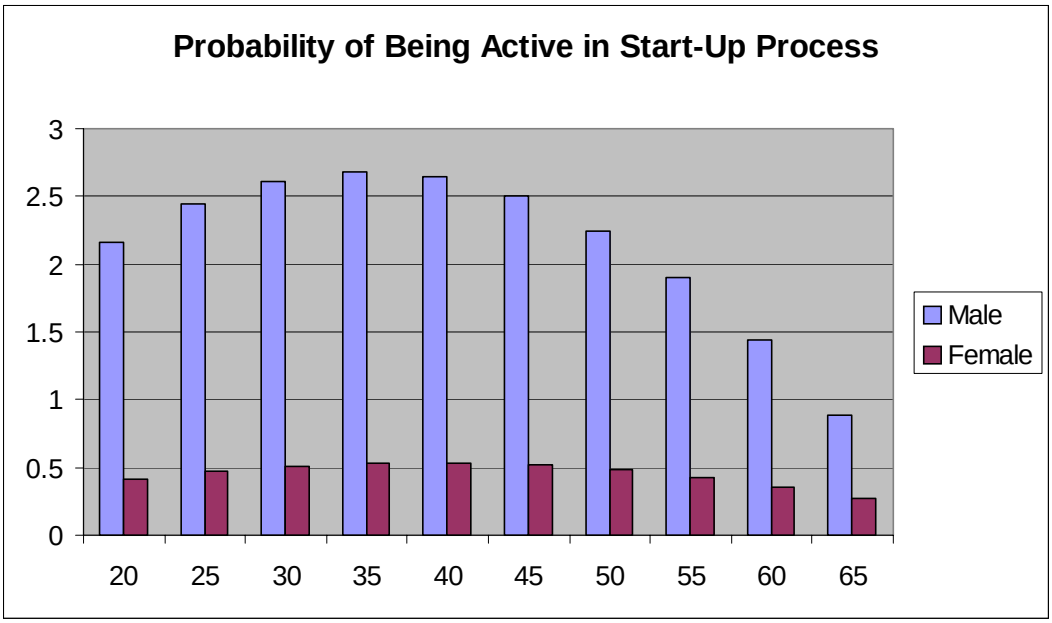
Place of birth also mattered. Here foreign born and Northern Irish males were more likely to be starting their own business than Scottish, English or Welsh men. Amongst women, the only significant effect was for Northern Irish women who were 2.9% more likely to be starting their own business. When added to the regional findings, an interesting anomaly is apparent. Here women actually resident in Northern Ireland are 0.8% less likely to be starting a business. Put together, it appears that migrant Northern Irish women are the most likely to be starting a business. By contrast, only one regional effect was significant for men, with males in the East of England 2.8% more likely to be starting a business than males anywhere else in the UK.

To summarise, the 'typical' UK male starting a business will be aged 40 to 45 years old, knows an entrepreneur, perceives he has skills relevant to new business formation and is not scared of failure. He has a higher chance of being African, and being born outside of the UK, and of living in the East of England. His female counterpart will also know an entrepreneur and perceive she has relevant skills, but will start a business even of she is scared of failing. She has a high chance of having Caribbean ethnic roots, or of being a migrant from Northern Ireland to other UK regions.

4.2 Actively Involved in the Start-Up Process

Age was found to act in a significant, and concave, way for both men and women. As we observe from Figure 2, the probability of being actively involved in the start-up process is initially increasing in age. For males and females the peak age is around 35-40 after which it declines rapidly. It is interesting to note that a male of 65 has around 1/3rd of the probability of a 35 year old male. For women this is much lower at around ½.

Figure 2: Gender and Age Effects on Probability of Being Active in Start-Up Process



We also observe that education was important, although more so for men. Here we note that compared to an unqualified male, probabilities of being involved in the start-up process increased by 0.7% for males with GCSE level qualifications, and by 1.6% for all higher levels. For women only post-16 qualifications below degree level were found to increase probabilities. The magnitude of this formal education effect was also smaller at 0.3%.

Once again we find that entrepreneurial role models matter, and more so for men. Further, perceptions of ones start-up capabilities were also important. For males, if you know an entrepreneur and perceive you have entrepreneurial skills, this combination will increase the likelihood of becoming involved in the start-up process by 6.4%. For women the same combination would raise her probability by only 3.6%.

We also note that Caribbean men and women had the highest probabilities of all ethnic groups of being involved in the start-up process. The respective coefficients imply and increased probability of 8.5% for Caribbean males, and 3.8% for Caribbean females. In addition, African males had a 5.5% higher probability. This was not the case for African women.

Regarding place of birth and current region of domicile, we note once again that the East of England is a 'hot-spot' for male entrepreneurial activity. For women, the North West of England and Northern Ireland were low spots. On place of birth we observe that Welsh born males had a 1% lower probability than all other males from elsewhere in the UK and foreign born. Once again we find that women born in Northern Ireland are the most entrepreneurial, especially if they migrate to other regions of the UK.

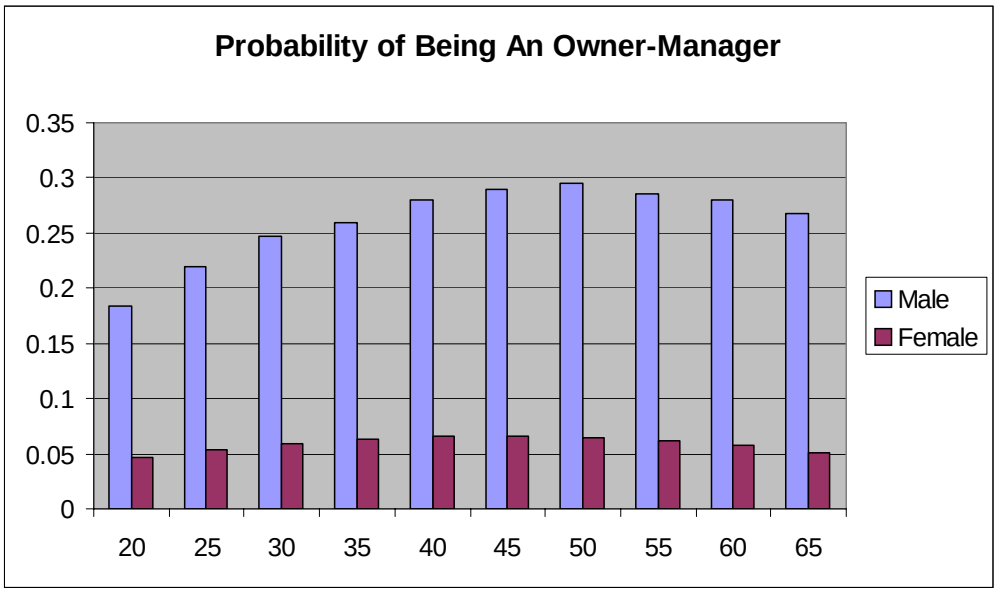
To sum up, the 'typical' male currently involved in the start-up process is around 35 years old, well educated, has a higher chance of having Caribbean or African roots, has an entrepreneurial role model, and is most likely to reside in the East of England. The

equivalent female would be 35-40 years old, with some advanced level or vocational qualifications, also with a role model. She has a higher chance of having Caribbean roots and/or born in Northern Ireland but probably migrated to mainland UK.

4.3 Owner-Managers

From Figure 3, we observe that for both men and women the probability of being and owner-manager is an increasing, but concave function of age. That is to say owner-managership is initially increasing in age, but reaches a peak after which the probability diminishes. For men this peak it at between the ages of forty-five and fifty. For women it falls between the ages of forty and forty-five. Thus age is an important, and distinguishing feature between men and women in terms of being an owner-manager of a business.

Figure 3: Age and Gender Effects on Probability of being an Owner-Manager



Education is also important for women, although not for men. Here we note that having GCSE level qualifications lowers the probability of being an owner-manager, by 0.9%, whilst post-compulsory qualifications raises the probability, by 2.3%. Thus for women owner-managers are more likely to be better qualified than their male counterparts. This confirms the empirical findings of Cowling and Taylor (2001) and Cowling, Taylor and Mitchell (2003) for the UK who both found strong, and positive educational effects for women entrepreneurs.

Knowing an entrepreneur was also a characteristic of owner-managers of both genders. However, the scale of this effect for male owner-managers was twice that of females. The same was true for an individuals perception that they had the requisite skills to start a new business, suggesting that there is at least the potential for existing owner-managers to become serial entrepreneurs. Once again we note that the scale of this effect is twice as large for men than women. Fear of failure, however, was a defining factor in reducing the probability that a given man or woman would be the owner-manager of a business. In

line with our earlier results, we find that this effect is far greater for men than women, reducing probabilities by 4.6% for men and only 0.8% for women.

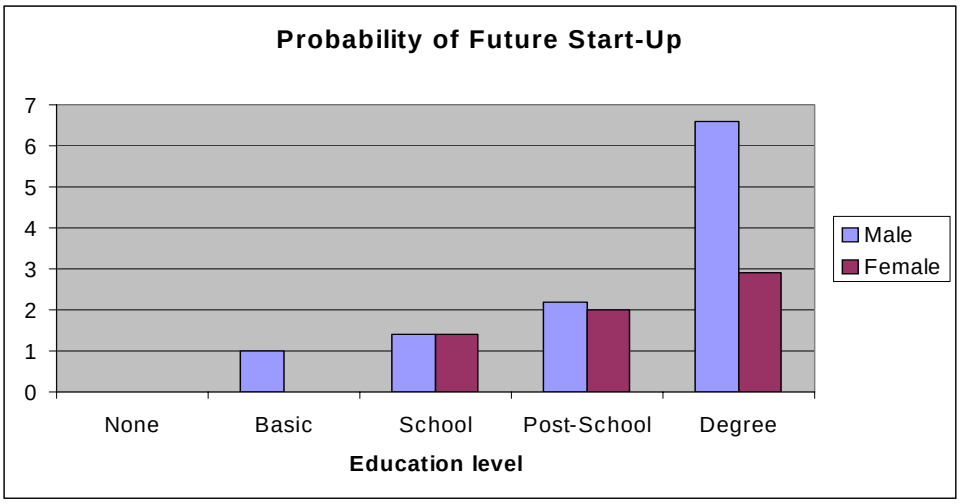
Whilst ethnicity had no effect on the likelihood of either women or men being owner-managers, place of birth did. Here we observe that males born in Scotland had a 4.9% lower probability than males born anywhere else either within or outside of the UK. In a similar vein, women born in Northern Ireland has lower probabilities of being owner-managers. Regional effects were also evident. For example, males residing in the East of England had a 6.1% higher probability of being an owner-manager than males in any other UK region. In contrast women resident in Northern Ireland, London, West Midlands and Yorkshire & Humberside (in descending order of magnitude) all had higher owner-manager probabilities.

To sum up, the 'typical' female owner-manager would be between forty and forty-five, well educated, have entrepreneurial role models and skills and not be scared of failure. She would be more likely to be located in four specific regions of the UK. Her male counterpart would be between forty-five and fifty, and also have entrepreneurial role models and skills and not be scared of failure. He has the highest chance of being found in the East of England and is least likely to be of Scottish birth.

4.4 Future Potential Start-Ups

Having addressed who is actively doing something entrepreneurial at the current time, we now turn our focus of attention to potential future entrepreneurs. The first point of note is that men and women of all ages are equally likely to be thinking of starting up a new business within the next three years. Figure 4 shows that education is important for men and women. Here we note that the probability of starting a new business in the near future is increasing exponentially in education. For men, having a university degree level education as opposed to post-compulsory education raises the probability by 300 percentage points. For women, the effect is somewhat smaller at 45 percentage points. This implies that the more educated the population in general becomes, the greater the entrepreneurial potential of that population in the future.

Figure 4: Education and Gender Effects on Probability of Starting a Business in the Next Three Years



Having entrepreneurial role models is also important, and more so for men. The same is true for the perception that one has relevant start-up skills. Once again, we observe that fear of failure deters men from pursuing an entrepreneurial career path, but has no effect on women's decision. This suggests that women are more likely to be self-starters, more confident and less worried about potentially adverse consequences.

Ethnicity was also an important area of distinction for men, but played no role for women. Here we observe that Asian males had a 2.6% higher probability of thinking of starting a new business than males from all other ethnic groups. We also note that Welsh born men and women were the least likely to be thinking of starting a business. In addition, Englishmen were also less likely to than their Northern Irish and Scottish counterparts. Paradoxically, males resident in Wales were the most likely to be thinking of starting their own business. This was also true, albeit to a lesser degree, for males in the South West of England. By contrast, women across the length and breadth of the UK were equally likely to be thinking of starting their own business.

To build up a picture of a 'stereotypical' UK potential future entrepreneur, he would be well educated, have entrepreneurial role models and belief in his abilities, and not be scared of failure. He has a higher chance of being from an Asian ethnic background, and being born abroad or in Northern Ireland or Scotland. He also is more likely to be currently resident in Wales or the South West. His female equivalent will also be well educated, also having entrepreneurial role models and belief in her entrepreneurial abilities. Aside from these traits she could be from any ethnic background, place of birth of region of the UK.

5 Conclusion

We have empirically investigated differences in the scale and nature of male and female entrepreneurial activity using data from a large-scale, UK adult population survey carried out in 2002. Our findings are illuminating and highlight many important areas of distinction between male and female entrepreneurs. We also shed some light on the scale of current male and female activity and outline some evidence as to why this may change in the future.

From the basic statistics we observe that the majority of total entrepreneurial activity is from males. Yet there is some evidence that this may alter in the future. For example, the female share of total current involvement in start-up activity is 27.3%. Yet out of future potential start-up activity this is 30.2%. There is also a logical ordering as far as age is concerned with men and women getting progressively older as they move further up the entrepreneurial scale from potential entrepreneurs to established owner-managers. It is also evident that men are far more likely to have entrepreneurial role models. In addition, the further an individual is advanced down the entrepreneurial path, the less afraid of failure in the context of starting a new business they become.

On ethnicity, Caribbean women are much more entrepreneurial than their male counterparts. By contrast, Asian men are more entrepreneurial than their female counterparts. The evidence also suggests that as increasing numbers of women enter higher education, it is likely that the female share of total entrepreneurial activity will rise.

At the regional level, males dominate entrepreneurial activity in the East of England, a highly entrepreneurial region. But in the future it is likely that women will begin to redress this imbalance. By contrast, Yorkshire & Humberside is a hotspot for female entrepreneurial activity. From potential entrepreneurs, through to those actively running a new business, women in this region have a majority share of entrepreneurial activity. The signs are that this pattern will continue into the future.

From the multivariate analysis we observe that both male and female entrepreneurs are likely to be better educated. For females, they are likely to be very similar in characteristics to owner-managers of existing businesses. Entrepreneurial role models, and the perception that the individual has entrepreneurial knowledge and skills are critical in the male and female decision to become an entrepreneur. However, their importance is far greater in terms of persuading men to pursue an entrepreneurial career path than was the case for women. A key finding was that men who are scared of failure do not start businesses. Women do.

For male entrepreneurship in the UK the future is ethnically diverse, as increasing numbers of non-white men start up new ventures. For women, the same is broadly true but concentrated amongst Caribbean women. In addition, female migrants from Northern Ireland do, and will continue to, make a significant contribution to female entrepreneurial activity in the UK. For male entrepreneurship, there is likely to be a significant geographical shift in entrepreneurial activity away from the East of England towards the South West and Wales, the latter stimulated in part by migration from other regions of the UK. Finally, we observe that in the future, entrepreneurial activity is likely to manifest across the full age spectrum of the UK adult population. This is in contrast to the volume of previous work that generally finds entrepreneurial activity peaking between 35 and 50 years old.

Table 4: Probit Results for Gender and Entrepreneurial Activity Type or Potential

	Business Start				Involved in Start-up Activity			
	Male		Female		Male		Female	
	dF/dx	Z stat	dF/dx	Z stat	dF/dx	Z stat	dF/dx	Z stat
Age	0.002	3.06	0.000	0.97	0.002	3.17	0.000	1.65
Age squared	-0.024	3.57	-0.003	1.37	-0.021	3.85	-0.004	2.05
Education								
None								
School	0.005	1.33	-0.001	0.70	0.007	2.22	0.001	1.02
Post-school	0.008	1.59	0.003	1.19	0.016	3.56	0.003	1.73
Graduate	0.006	0.79	0.000	0.09	0.016	2.48	0.004	1.31
Culture / Attitudes								
Know Entrepreneur	0.031	7.30	0.013	5.60	0.028	8.56	0.016	7.57
Start-up Skills	0.042	9.08	0.026	9.33	0.040	9.34	0.020	8.55
Fear Failure	-0.007	2.07	0.000	0.17	-0.002	0.93	-0.001	0.47

	Business Start				Involved in Start-up Activity			
	Male		Female		Male		Female	
	dF/dx	Z stat	dF/dx	Z stat	dF/dx	Z stat	dF/dx	Z stat
Ethnicity								
White								
Caribbean	0.049	1.49	0.052	3.04	0.085	2.63	0.038	2.91
Asian	-0.001	0.14	0.000	0.01	-0.000	0.01	-0.003	0.70
African	0.073	2.00	-0.002	0.27	0.055	1.98	-0.002	0.28
Other			0.016	1.33	-0.011	1.26	0.000	0.05
Birthplace								
England	-0.018	2.65	0.001	0.42	-0.007	1.48	-0.000	0.12
N.Ireland	-0.002	0.16	0.029	1.91	-0.006	0.77	0.019	1.80
Scotland	-0.014	2.04	-0.001	0.16	-0.006	1.06	-0.002	0.87
Wales	-0.018	2.85	-0.003	0.91	-0.010	1.97	-0.002	0.99
Out of UK								
Region								
East Midlands								
East	0.028	1.97	-0.001	0.13	0.023	2.12	-0.003	1.07
London	0.009	0.71	0.008	1.24	0.010	1.08	0.001	0.31
North East	0.007	0.75	0.002	0.53	0.002	0.31	-0.001	0.44
North West	0.012	0.94	-0.006	1.58	0.014	1.34	-0.004	1.70
N.Ireland	-0.003	0.22	-0.008	2.02	0.005	0.51	-0.006	2.26
Scotland	0.008	0.69	0.002	0.39	0.009	0.93	0.001	0.29
South East	0.007	0.73	0.002	0.37	0.007	0.98	-0.001	0.52
South West	0.010	0.86	0.002	0.31	0.016	1.56	-0.002	0.58
Wales	0.014	1.17	0.005	0.88	0.010	1.16	-0.001	0.43
West Midlands	-0.004	0.36	0.001	0.12	-0.003	0.42	-0.000	0.14
Yorks & Humberside	-0.012	1.17	0.008	1.23	-0.002	0.22	0.000	0.13
N Obs	5,986		7,642		5,928		7,578	
Chi-squared	323.49		235.31		419.66		271.29	
Pseudo R2	0.157		0.182		0.205		0.231	

Table 4 continues below.

Table 4 continued: Probit Results for Gender and Entrepreneurial Activity Type or Potential

	Owner-Manager				Potential Future Start-Up			
	Male		Female		Male		Female	
	dF/dx	Z stat	dF/dx	Z stat	dF/dx	Z stat	dF/dx	Z stat
Age	0.011	9.42	0.003	6.30	-0.001	0.99	-0.000	1.25
Age squared	-0.114	9.19	-0.034	6.30	-0.009	0.99	-0.001	0.17
Education								
None								
School	-0.014	1.57	-0.007	1.62	0.010	1.79	0.004	1.23
Post-school	-0.001	0.11	-0.009	1.85	0.014	1.88	0.014	3.15
Graduate	-0.007	0.52	0.023	2.37	0.022	2.12	0.020	2.75
Culture / Attitudes								
Know Entrepreneur	0.081	9.06	0.044	7.92	0.066	11.13	0.029	7.63
Start-up Skills	0.131	15.41	0.086	15.79	0.026	10.95	0.039	10.63
Fear Failure	-0.046	5.81	-0.008	2.19	0.026	2.50	0.001	0.21
Ethnicity								
White								
Caribbean	-0.062	1.28	-0.016	0.83	0.060	1.42	0.023	1.31
Asian	0.011	0.40	-0.016	1.08	0.026	1.69	0.006	0.61
African	0.034	0.53	-0.008	0.33	0.026	0.77	-0.007	0.57
Other	-0.039	1.05	0.025	0.87	0.006	0.23	0.007	0.47
Birthplace								
England	-0.022	1.31	0.002	0.25	-0.024	2.57	-0.008	1.56
N.Ireland	-0.007	0.25	-0.025	2.45	-0.000	0.00	-0.002	0.20
Scotland	-0.049	2.58	-0.005	0.41	-0.014	1.24	-0.002	0.30
Wales	-0.031	1.54	-0.005	0.41	-0.032	3.75	-0.011	2.03
Out of UK								
Region								
East Midlands								
East	0.061	2.33	0.012	0.92	0.025	1.53	0.000	0.04
London	0.029	1.11	0.034	2.12	0.015	0.93	-0.000	0.01
North East	-0.019	1.07	-0.000	0.03	0.001	0.11	-0.004	0.61
North West	0.000	0.01	0.009	0.64	0.010	0.66	-0.006	0.90
N.Ireland	-0.001	0.04	0.046	2.14	-0.017	1.08	-0.010	1.12
Scotland	0.029	1.12	0.010	0.67	0.003	0.20	-0.007	1.04
South East	0.011	0.56	0.015	1.31	0.017	1.28	-0.001	0.20
South West	0.020	0.81	0.018	1.28	0.030	1.75	0.001	0.19
Wales	0.008	0.35	0.012	0.94	0.030	1.84	0.003	0.35

	Owner-Manager				Potential Future Start-Up			
	Male		Female		Male		Female	
	dF/dx	Z stat	dF/dx	Z stat	dF/dx	Z stat	dF/dx	Z stat
West Midlands	0.026	1.02	0.030	1.96	0.016	0.99	-0.004	0.54
Yorks & Humberside	0.018	0.70	0.027	1.82	-0.016	1.14	-0.000	0.06
N Obs	6,026		7,642		5,931		7,586	
Chi-squared	715.91		549.40		578.25		359.15	
Pseudo R2	0.156		0.174		0.192		0.176	

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