The Global Entrepreneurship Monitor (GEM) is an international project involving 70 countries in 2013 which seeks to provide information on the entrepreneurial landscape of countries. Many studies have shown that entrepreneurship is an important driver for economic growth, competitiveness and job creation. The results of the GEM data analysis are used as key benchmarking indicators by regional and national authorities around the world. The sample size in Northern Ireland was 1,997 adults aged over 16 years of age in 2013.
Main Findings

- The rate of total early-stage entrepreneurship (TEA) in Northern Ireland for 2013 was 5.1%, down from 7.1% in 2012. The drop was consistent with the other UK countries and the 2013 rate compared with 7.3% in the UK overall, 7.5% for the English regions, 6.8% in Scotland and 5.4% in Wales.

- Necessity-driven TEA in Northern Ireland fell from 1.5% to 0.5%, while opportunity-driven TEA fell from 5.3% to 4.6%.

- The female TEA rate in Northern Ireland stood at 2.2% in 2013 (UK 5.8%) and the female to male ratio of TEA was 27%, which is still the lowest in the UK (UK 66%, up from 57%).

- The TEA rate of young adults aged 18 to 29 fell in 2013. However, the TEA rate among this age group has generally risen in Northern Ireland from 4.1% in 2002 to 4.9% in 2013 (UK: 4.2% to 6.4%). In Northern Ireland there was a larger increase in the TEA rate among 30 to 64 year olds between 2002 and 2013, rising from 3.5% to 5.1% (UK: 5.8% to 7.5%).

- Attitudes among the non-entrepreneurial population are still dampened compared to the pre-recession period. Only 20.2% of the non-entrepreneurial working age population in Northern Ireland agreed there were good opportunities for starting a business in their local area in the next six months, compared with 33.2% across the UK. The rate in Northern Ireland is significantly lower than the peak of 39.0% in 2007.

- Some 49.5% of non-entrepreneurial individuals of working age in Northern Ireland (UK: 41.4%) agreed they were afraid of starting a business in case it might fail.

- The proportion of non-entrepreneurial working age adults in Northern Ireland who expect to start a business within the next three years was down significantly from 9.0% in 2012 to 3.4% in 2013.

- Just under 20% of TEA entrepreneurs in Northern Ireland had high growth expectations compared to only 2% of established business owners.
The Global Entrepreneurship Monitor (GEM) is based on the following premises. First, an economy’s prosperity is highly dependent on a dynamic entrepreneurship sector. Second, an economy’s entrepreneurial capacity is composed of individuals from all groups in society with the ability and motivation to start businesses, and requires positive societal perceptions about entrepreneurship. Third, high-growth entrepreneurship is a key contributor to new employment in an economy, and national competitiveness depends on innovative and cross-border entrepreneurial ventures.

The results from the GEM data analysis are used as key benchmarking indicators by regional and national authorities around the world. They also enable comparisons to be made with the other regions of the UK and other countries participating in GEM. Overall, GEM’s unique ability to provide information on the entrepreneurial landscape of countries in a global context makes its data a necessary resource for any serious attempt to study and track entrepreneurial behaviour.

It is important that we better understand the determinants of early stage entrepreneurship, because there is evidence to suggest a connection between higher rates of entrepreneurship and overall economic prosperity, particularly in innovation-driven economies like Northern Ireland.

Invest Northern Ireland sponsored the Northern Ireland component of the GEM UK research project. Stimulating entrepreneurship remains an important challenge for the region and Invest NI has committed significant resources over the years in ensuring that it is embedded within their core activities.

This is the tenth year in which Invest NI has participated in GEM. Of the 284,000 respondents to GEM UK surveys for the period 2002-2013, over 32,000 respondents were from Northern Ireland. Northern Ireland now has a large longitudinal database on entrepreneurial attitudes, activity and aspirations. This is particularly useful in conducting trend analysis for important sub-populations in Northern Ireland, such as young people, in relation to other home nations.
How GEM Measures Entrepreneurial Activity

The GEM research consortium has been measuring entrepreneurial activity of working age adults across a wide range of countries in a comparable way since 1998. In 2013, the study conducted surveys in 70 sovereign nations and represented the world’s most authoritative comparative study of entrepreneurial activity in the general adult population. A telephone survey of a random sample of the adult population is conducted each year between May and September.

GEM’s primary focus is on the study of three areas:

- To measure differences in the level of entrepreneurial activity between countries
- To uncover factors leading to appropriate levels of entrepreneurship
- To suggest policies that may enhance the national level of entrepreneurial activity.

The 2013 GEM global study was based on an analysis of adult population survey (APS) results from 70 economies and more than 198,000 adults across the world. The core of the APS is identical in each country and asks respondents about their attitudes towards entrepreneurship, if they are involved in some form of entrepreneurial activity, and if so what their aspirations for their business are. The global GEM Executive 2013 Report was published in January 20141 and can be downloaded from www.gemconsortium.org.

From the survey, we examine individual entrepreneurs at three key stages:

- Nascent entrepreneurs (NAE): The stage at which individuals begin to commit resources, such as time or money, to starting a business. To qualify as a nascent entrepreneur, the business must not have been paying wages for more than three months.

- New business owner-managers (NBO): Those whose business has been paying income, such as salaries or drawings, for more than three, but not more than forty-two, months.

- Established business owner-managers (EBO): Those whose business has been paying income, such as salaries or drawings, for more than forty-two months.

In addition, we measure general intention to start a business by asking individuals if they expect to start a business within the next three years. Finally, we ask individuals if they have sold, shut down, discontinued or quit a business, in the past year.

It is important to understand that the main subject of study in GEM is entrepreneurs rather than the businesses that they run. GEM measures the entrepreneurial activity of people from intention to exit. The first two stages of active business development, the nascent entrepreneur stage and the new business owner-manager stage, are combined into one index of Total early-stage Entrepreneurial Activity, or TEA, which is represented in Figure 1 below.

2. The active planning phase in which the entrepreneur has done something during the past 12 months to help start a new business, a new business that he/she will at least part own, and which has not paid wages or other income to the owners in the past 3 months.

3. The second phase is defined as from 4 to 42 months after the new venture begins to provide income to the owners. Entrepreneurs who at least part own and manage a new business that has been paying some form of income to the owners for at least 4 and not more than 42 months are referred to as new firm entrepreneurs.
As much of this entrepreneurial activity is pre-start-up or includes very small new businesses that do not have to register, TEA rates will not necessarily match with published official statistics on business ownership and, indeed, should not be interpreted as such. Rather, GEM enables the measurement of the propensity of individuals in particular countries to be entrepreneurial given the current social, cultural and economic framework conditions that exist there.

Since 2011, entrepreneurial activity among employees has also been measured, adding to our knowledge about the variety of contexts in which entrepreneurial activity can be expressed. In addition to activity, the GEM survey asks all respondents about their attitudes to entrepreneurial activity, and asks entrepreneurs about their aspirations.

The methodology, sample sizes and weighting systems used for the GEM UK 2013 adult population survey are explained in more detail in the GEM UK 2013 report (www.gemconsortium.org). An important change in the sample design was introduced in 2010 when 10% of respondents in each Government Office Region (GOR) were selected at random from households which had mobile phones but not fixed phone landlines. In 2013, this was increased to 20%, in line with recent estimates in the proportion of mobile-only households in the UK. The following report presents a summary of the headline results, and key themes arising from the GEM survey in 2013 and the analysis of the eleven years of GEM data (2002-2013).

The TEA index does not measure all entrepreneurial activity and is not based on a survey of business entities. It measures the characteristics of entrepreneurial individuals and the types of entities they establish. As such it is a unique and internationally comparative measure of the cultural propensity of a nation, or region, to be entrepreneurial.

One way of distinguishing between different types of entrepreneurial activity is the extent to which the activity is based on necessity (i.e. there are no better alternatives for work) or opportunity (where entrepreneurs may be exploiting the potential for new market creation).
The rate of early-stage entrepreneurship in Northern Ireland for 2013 was 5.1% compared to 7.3% in the UK overall, 5.4% in Wales, 7.5% for the English regions and 6.8% in Scotland. The TEA rate for Northern Ireland was significantly lower than for England and the UK in 2013 (Figure 2).

Overall, a TEA rate of 5.1% in Northern Ireland equates to around one in every twenty adults aged 18-64 or over 57,000 individuals, 63% of whom were in the very early stages of starting a business (nascent entrepreneurs 3.2%) and the remainder those who had a new business which was between 3 and 42 months old (1.9%).

Looking at the 2002-2013 period we observe that the rate of early-stage entrepreneurial activity in Northern Ireland, as in the UK, has risen through the recession, but has dropped back again in 2013 (Figure 3). The level of early-stage entrepreneurial activity in Northern Ireland has tracked the UK trend very closely, except in 2012, where levels in the region remained steady compared to a large increase in entrepreneurial activity in the UK.
TEA rates within Northern Ireland in 2013 vary across the region, although the differences are not significant. Since one year observations on GEM can be unreliable due to small sample sizes, Figure 4 plots the average TEA rates over the 2003-2013 period using the new Super Council boundaries; the pooled data thus averaging out any random annual fluctuations. It indicates that over the period the highest TEA rate was in the Mid Ulster Super Council area with a TEA rate of 6.2% whilst the lowest was in the Derry City and Strabane area with a rate of just 4.1%; the difference between these two is statistically significant. Notably Belfast is shown to lie below the Northern Ireland average with a TEA rate of 4.4%.

4. Super Councils have been constructed based on District Council data; as a result those wards that have transferred between Councils will not have been allocated to their correct Super Council.

5. Confidence intervals for a mean specify a range of values within which the unknown population mean may lie. At the 95% level we are 95% confident that the interval contains the true population mean.
Depicting the TEA rates in a slightly different way; Figure 5 displays the trend in TEA rates by Super Council area, using three year rolling averages for the period 2003-2005 to 2011-2013. Whilst there is a degree of volatility in the series, there are some notable features; from the 2008-2010 period onwards the Armagh, Banbridge and Newry and Mid Ulster Super Council areas (and to a lesser extent Newry, Mourne and Down) accelerated away from the remainder with TEA rates peaking at 10.6% and 9.7% (and 8.3%) respectively in 2010-2012. Interestingly, despite a lull in TEA rates during the recession Mid Ulster also had the highest entrepreneurial activity rates at the start of the period. In contrast the Derry City and Strabane Super Council area had the lowest TEA rates for the majority of the period in question whilst Fermanagh and Omagh, which initially had the second highest TEA rate at 6%, peaked during 2009-2011, before dropping rapidly to just over 4% in 2011-2013.

Figure 5: Total early-stage Entrepreneurial Activity in Northern Ireland by Super Council Area, rolling averages 2003-2005 to 2011-2013.
(Source: GEM APS)
Both “necessity-driven” and “opportunity-driven” TEA rates had fallen in Northern Ireland between 2012 and 2013. Necessity-driven TEA fell from 1.5% to 0.5%, while opportunity-driven TEA fell from 5.3% to 4.6%. Necessity-driven TEA as a proportion of all TEA was 9.9%, which was lower than in previous years and also lower than in all the other home nations (Figure 6). In particular Northern Ireland had a significantly lower level of necessity entrepreneurship in 2013 than Wales.

Figure 6: Opportunity and Necessity Entrepreneurship in the UK Home Nations in 2013.
(Source: GEM APS 2013)
Who are the Entrepreneurs in Northern Ireland?

**Gender:** In England, Northern Ireland and the UK as a whole, males have significantly higher TEA rates than females. Male TEA rates do not differ significantly across the home nations, however female TEA rates in Northern Ireland are significantly lower than those in England, Scotland and the UK average (Figure 7).

The ratio of female to male early-stage entrepreneurial activity varies markedly across the four home nations. The ratio in Northern Ireland at 27% is the lowest of all the home nations in 2013. While annual ratios are likely to vary from year to year, the long run average ratios over the 2002-2013 period suggest that Wales, at 54%, has a similar ratio to England (49%) and Scotland (51%) but all are higher than Northern Ireland (35%).

Figure 7: Total early-stage Entrepreneurial Activity in the UK Home Nations in 2013.
(Source: GEM APS 2013)

The female TEA rate in Northern Ireland stood at 2.2% in 2013, down from a record high of 3.9% in 2011. We can see from Figure 8 that female TEA rates in Northern Ireland generally match the UK trend, albeit at very different levels, with both experiencing a significant decline in the most recent period. The lower TEA rates for females in Northern Ireland compared to the UK average and other UK countries are likely to reflect a combination of reasons. These include a more averse attitude to risk, greater availability of employment opportunities, particularly within the public sector, and cultural attitudes towards self-employment.
Figure 8: Total early-stage Female Entrepreneurial Activity in Northern Ireland and the UK, 2002-2013. (Source: GEM APS)

Examining the TEA rates for males and females by Super Council area (Figure 9) for 2011-2013 reveals some interesting insights; the male rates (plotted in order) vary considerably across Council areas whilst the female rates lie within a much narrower range and vary little. Although Mid Ulster has one of the highest male and female TEA rates, generally there is no correlation between male and female rates of entrepreneurial activity. Those Councils with the highest male rates do not necessarily have the highest female rates. This is particularly noticeable for Mid and East Antrim, with the third highest male TEA rate but the third lowest female TEA rate.

On average female TEA rates over the 2011-2013 period are one third of male TEA rates, however this varies from a ratio of 17% in Mid and East Antrim to 78% in Fermanagh and Omagh. Those Super Council areas with the smallest gap between male and female TEA rates are typically those with the lowest male rates and where female TEA rates are around the Northern Ireland average. This suggests that the narrow gap between males and females is a case of males having lower than average entrepreneurial activity rather than females having a higher than average rate.
Figure 9: Total early-stage Male and Female Entrepreneurial Activity in Northern Ireland by Super Council Area, rolling average 2011-2013. (Source: GEM APS)

Age: As Figure 10 shows, individuals aged between 35-44 years display the highest rate of early-stage entrepreneurial activity in the UK but this is not true for Northern Ireland. In fact Northern Ireland has a significantly lower share of 35-44 year olds involved in entrepreneurial activity than in England and the UK. The 25-34 age group has the highest TEA rate in Northern Ireland although the rate is not significantly different to the other home nations.

A more meaningful analysis is to compare how TEA rates have changed in the 18-29 age group (where there seems to be a natural break in UK GEM activity data) and compare them to the 30-64 age group. Figures 11 and 12 show that the TEA rate among 18-29 year olds in Scotland has more than doubled, from 2.9% in 2002 to 7.1% in 2013, compared with a smaller increase in the TEA rate among 30-64 year olds from 5.7% to 6.8%. This increase in TEA rates among 18-29 year olds in Scotland is larger than the other home nations, and is almost four times the increase in the 30-64 rate. By comparison, the rate for 18-29 year olds in Northern Ireland displayed the lowest increase over the period, from 4.1% to 4.9%, although the increase amongst the 30-64 rate was double this, rising from 3.5% to 5.1%.
Figure 10: Total early-stage Entrepreneurial Activity in the UK Home Nations, 2013. (Source: GEM APS 2013)

Figure 11: Trend in Total early-stage Entrepreneurial Activity in the UK Home Nations for 18-29 year olds, 2002-2013. (Source: GEM APS 2013)
**Education**: The average level of total early-stage entrepreneurial activity for graduates in the UK in 2013 was 10.3% (Figure 13), significantly higher than for non-graduates (5.5%). The comparable figure for graduates currently residing in Northern Ireland was 5.9% which was statistically different from the UK level but was not different to the TEA rate for non-graduates in Northern Ireland (4.7%). Graduate TEA rates in Wales, Northern Ireland and Scotland were closer to non-graduate TEA rates than in England – the difference between TEA rates of English graduates and non-graduates was statistically significant.
**Migrant Status:** Figure 14 compares TEA rates for different types of immigrants compared to life-long residents in Northern Ireland using three year rolling averages. As life-long residents comprise the majority of the population their trend is mirrored by the overall Northern Ireland average trend and shows a gradual increase in entrepreneurial activity from 2006 onwards, with only a marginal decline in the 2011-2013 period. The TEA rate for in-migrants was slightly higher than that for life-long residents and was relatively stable at 5% for most of the period to 2008; thereafter rates increased in line with that for residents and continued to increase to over 7% in the 2011-2013 period. TEA rates for immigrants have been more volatile, starting off below 4% and peaking at just under 8% during 2007-2009. Since 2008 rates have fluctuated around the 6% mark, although they appear to be on the increase again during 2011-2013, approaching the rate for in-migrants.

It has been noted in previous research\(^6\) that immigrants and individuals who move from one region of the UK to another have significantly higher TEA rates than lifelong resident UK-born individuals. Indeed in 2013, it is also the case that NI-born individuals currently living in the other UK home nations have higher TEA rates than the Northern Ireland average. Thus whilst the differences reported here amongst the various types of resident are not statistically significant, it does reveal a different pattern of entrepreneurial activity amongst migrants and the resident population.

The sample sizes for the ethnic population in Northern Ireland were too small to produce reliable estimates for entrepreneurial activity rates. However combining the 2002-2013 data resulted in an average TEA rate of 5.3% for the white population and 5.5% for the non-white population, indicating no significant difference between the two.

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Entrepreneurial Attitudes and Intentions

GEM has developed a number of attitudinal statements which provide a proxy for entrepreneurial potential in a country/region. They include knowing a person who has started a business in the last two years, perception of good opportunities for start-up, self-belief in possessing the relevant skills to set up in business and the prevalence of fear of failure as a deterrent to setting up in business.

GEM attitudinal data is best treated at the group rather than individual level, because individuals who are already entrepreneurs may feel compelled to provide positive answers in the Adult Population Survey (APS). Here, as in the last two years, we report attitudinal data only for that portion of the population who are not already entrepreneurs.

In Northern Ireland, almost one in four (23.1%) of individuals state that they know an entrepreneur compared to 25.2% in the UK as a whole (Figure 15), both slightly lower than in 2012. In Northern Ireland 33.4% of non-entrepreneurs believe they have the skills to set up in business – again similar to the UK average at 37.0%.

Figure 15: Entrepreneurial Attitudes and Perceptions in Northern Ireland and the UK (2013).
(Source: GEM APS, 2013)
The proportion of the non-entrepreneurial population of Northern Ireland reporting that the fear of failure would prevent them starting a business fell from 55.9% in 2012 to 51.3% in 2013. In the UK, it fell from 45.3% to 42.6%, the latter almost statistically significant. Restricting the analysis to only those who see good opportunities in their local area in the next six months, Figure 16 shows that fear of failure has risen more sharply in Scotland than in other home nations since the onset of the recession in 2007. In Northern Ireland it has also risen, although to a lesser extent, but has fallen back slightly over the last year.

In the 2013 survey, only 20.2% of the non-entrepreneurial working age population in Northern Ireland agreed there were good opportunities for starting a business in their local area in the next six months. This compared against 33.2% of the UK non-entrepreneurial working age population. This perception of start-up opportunities in Northern Ireland has remained unchanged since 2012 although it has recovered from the low of 15.7% in 2011 (Figure 17).
Looking to the future, the proportion of non-entrepreneurial working age adults in Northern Ireland who expect to start a business within the next three years fell significantly from 9.0% in 2012 to 3.4% in 2013 (Figure 18). This would seem to have reversed the upward trend seen between 2009 and 2012. The UK also saw an equally significant drop from 11.3% to 5.4%. This runs counter to the trend in opportunity perception, which suggests it is more a reflection of the loosening of the labour market and the decrease in necessity-based entrepreneurship.

Figure 18: Future Start-up Expectations (within 3 years) in Northern Ireland and the UK, 2002-2013.
(Source: GEM APS)
Men are more likely than women to report that they intend to start a business in the next three years in Northern Ireland (Figure 19). In 2013, 1.1% of women in Northern Ireland expected to start a business in the next three years compared to 5.8% of men. The ratio of female to male future start-up intentions in Northern Ireland was 18%, down significantly from 43% in 2012 and lower than that observed for the TEA rate in 2013 (27%).

Start-up intentions fell for males and females in all home nations in 2013, the decreases were all statistically significant except for the female rate for Scotland. In Scotland the female rate fell from 4.8% to 2.6%, the lowest decrease amongst all home nations. However, the male rate declined at a faster rate, falling from 12.3% to 6.1%.

To identify individuals who expect to create a relatively high number of jobs, GEM created a variable which measures the percentage of all early-stage entrepreneurs (and separately established business owners) who have created more than ten jobs and who expect more than 50% growth in jobs in the next five years. Figure 20 displays the trend in these high growth expectation entrepreneurs for both Northern Ireland and UK, using three year rolling averages. High growth expectation rates amongst TEA entrepreneurs (measured by the left hand axis) are generally around four times higher than those for established business owners (measured by the right hand axis).

High expectation rates were broadly similar for Northern Ireland and UK TEA entrepreneurs across the 2002–2013 period with just under 20% of TEA entrepreneurs having high job expectations in the early part of the period, dropping to around 16% towards the end. Notably, Northern Ireland reported higher rates than the UK in the 2011-2013 period, which were similar to pre-recession levels.
The rates of high growth expectation for established business owners were around 5-6% for both Northern Ireland and the UK until the 2006-2008 period, after which they diverged with a particularly sharp drop in the Northern Ireland rate. The gap between the two has persisted until 2013, with a lower share of high growth expectation business in Northern Ireland than the UK; the Northern Ireland rate appears to have settled around the 2% mark since 2010, while in the UK the rate is closer to 4%.

Figure 20: Relative Frequency of High Job Expectation early-stage Entrepreneurs and Established Business Owners in NI and the UK, three year rolling averages, 2002-2004 to 2011-2013.
(Source: GEM APS, 2002-2013)
Training, Awareness and Entrepreneurial Activity

In 2013 people aged 18-30 were asked whether they had taken part in any activities at school, college or university that made them think about starting a business or being their own boss. Almost two fifths in the UK (39.6%) reported that they had, which was up from 38.7% in 2012. At 39.5% the estimate for Northern Ireland was significantly lower than for 2012 (53.9%) but was not significantly different from that for Wales (39.4%), England (39.9%) or Scotland (36.8%).

In 2013, very similar proportions of people in the home nations had heard of Global Entrepreneurship Week: 9.0% in Wales, 7.9% in Northern Ireland, 7.5% in England and 7.0% Scotland. Of those that participated in Global Entrepreneurship week almost half, on average, said that it made them more entrepreneurial in their behaviour whilst one quarter, on average, said that it influenced their decision to start a business.

In the UK in 2013, 18.5% of those aged 50-64 and engaged in start-up activity had heard of the Prince’s Initiative for Mature Enterprise (PRIME) which is a national organisation that provides support for self-employment to those over 50. In Northern Ireland 19.6% of 50-64 year olds had heard of PRIME, similar to Wales at 19.8%.
Compared to 2012, entrepreneurial activity and intention in Northern Ireland in 2013 had declined, whilst attitudes among the non-entrepreneurially active population remained largely unchanged. Despite this, attitudes towards opportunities in the local area represented an improvement on the mid-recession period, suggesting a movement back towards pre-recession levels and an air of confidence amongst the population. The TEA rate in Northern Ireland in 2013 was lower than it had been since 2009. This suggests that entrepreneurial activity during that period was characterised to a larger degree by necessity-driven entrepreneurship than would normally be the case, as individuals found it difficult to find alternative employment.

In 2013, 78.7% of TEA entrepreneurs in Northern Ireland were first-time entrepreneurs, while 78.8% of non-entrepreneurially-active individuals who expected to start a business in the next three years were first-time entrepreneurs.

With over 10 years of GEM data for Northern Ireland to draw upon we can see quite clearly that there are aspects of the entrepreneurial ecosystem which look rather different when compared to the rest of the UK. There are two in particular which represent an on-going challenge to enterprise policy in Northern Ireland.

Firstly, attitudes of non-entrepreneurial individuals to entrepreneurship are wary with fear of failure remaining very high in Northern Ireland compared to elsewhere. Secondly, the levels of female early-stage entrepreneurship have declined since 2011 and are now the lowest in the UK.

The record levels of female nascent and new business owners in 2011 may well have reflected the general economic malaise. Now that there are signs of recovery, larger businesses are beginning to recruit again and this may have led to a fall in the number of women considering setting up their own business.

Given the decline in intentions and activity over the year, the existence of training and signposting to resources for first-time entrepreneurs is particularly important at this time.
Disclaimer

This report is based on data collected by the GEM consortium and the GEM UK team; responsibility for analysis and interpretation of the data is the sole responsibility of the authors.

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