HUNTER CENTRE FOR ENTREPRENEURSHIP

DATA COLLECTION AND ANALYSIS OF CURRENT BARRIERS TO BUSINESS GROWTH IN THE SOUTH OF SCOTLAND

Prepared for:

The Scottish Government

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1 Executive Summary

This report on business growth in the South of Scotland presents results on Stages 1, 2 and 3 of the research.

Stage 1 is a report on a sample of 1,001 adults aged 18 to 80 within the South of Scotland of the Global Entrepreneurship Monitor (GEM) Adult Population Survey with additional regional ecosystem questions conducted in 2018, with benchmarking against other parts of the UK that might be comparable to the South of Scotland, including Highlands and Islands, Devon and Cornwall, Cumbria and Northumberland, East Wales, and Herefordshire and Shropshire.

The data shows, as expected, a somewhat older business owner/manager profile in the South of Scotland than in Scotland or in the UK, with fewer new entrepreneurs and more older business owner/managers than the national average prevalence rates. The profile is very similar to that found in Highlands and Islands and Devon and Cornwall and different to that found in border regions in England or Wales, suggesting that the region's remote rural nature is more important than being a border region. Unlike its benchmark regions, where entrepreneurial activity rates rose in the years after the financial crash, entrepreneurial activity rates in the South of Scotland have been static, with the possible exception of rates among older people.

Stage 2 is a report of statistics on new firm births and firm growth for the South of Scotland and benchmarked regions from an integrated business database from the Office for National Statistics and the Inter-Departmental Business Register for the 2014 to 2019 period.

The data shows very similar patterns to the GEM data in Stage 1. However, because this data is effectively a census and not a survey, we can be much more confident that the new enterprise birth rate in the South of Scotland and the high growth enterprise rate (OECD employment-based definition) ranges from 70% to 80% of the average rates in its benchmark regions, depending on how these rates are measured.

Stage 3 is an entrepreneurial ecosystem analysis using a new methodology developed by GEM to provide a holistic view of the quality of the South of Scotland entrepreneurial economic system across six systemic conditions: Networking, Leadership, Financing, Talent, Knowledge, and Support services and intermediaries, and four framework conditions: Formal institutions, Culture, Physical infrastructure, and Demand. To measure these conditions, 98 defined variables were drawn from the regional version of GEM's Adult Population Survey (737 respondents aged 18 to 64 in 2018) and the GEM Regional Expert Survey (34 completed surveys completed between March 2019 and January 2021).

In this ecosystem analysis, the South of Scotland compares relatively poorly on all conditions, ranking bottom of 12 regions on seven of the ten conditions and with an overall score of 4.9 on a 10 point scale, when compared with a basket of twelve national regions and city regions from around the world (6.1 average) and three Canadian regions (6.5 average) surveyed in 2019.

Three main conclusions can be drawn from this research. Firstly, entrepreneurial attitudes, intensions and activity in the South of Scotland are associated with its characteristics as a remote rural economy, but it is clear that rates are lower in the South of Scotland than in benchmark regions. Secondly, and more positively, findings indicate that entrepreneurs and ecosystem experts recognise that besides a modest but loyal local customer base, there are large, easily accessible markets outwith the South of Scotland region. Thirdly, the South of Scotland appears to have a significantly underdeveloped entrepreneurial ecosystem; there is a perceived lack of leadership, human capital, and information flows within the region.

There is, therefore, a unique opportunity for the newly established South of Scotland Enterprise (SOSE) to animate the region's entrepreneurial ecosystem. We make recommendations organised around three core but interlinked themes: connectivity, infrastructure, and diversity.

SOSE should explore a wide range of ways to broaden business networks of entrepreneurs within the South of Scotland and link up and coordinate local networks, as well as link the regional network to networks in other regions that have greater concentrations of entrepreneurial resources. Spotting and filling gaps and signposting are two additional roles that SOSE could play.

Poor quality hard regional "plumbing" such as roads and broadband are not just important ecosystem services; they affect morale, and are even more important post-Covid19, when talented, highly educated individuals, who may be from the South of Scotland originally, realise they can work from where they wish to live rather than close to where their place of employment is – provided the infrastructure to do so exists.

Entrepreneurship thrives on diversity, but the South of Scotland has a mixed story to tell here. The South of Scotland has low levels of ethnic minorities, immigrants and university graduates, and this is a reflection of a less dynamic regional economy. New ways of working post Covid19 offer an opportunity to turn this around by attracting back young professionals, and also consciously welcome diverse individuals. Young professionals who had to leave the region for work may be tempted back to work remotely, and some will subsequently end up starting a business, because people tend to start businesses where they live.

2 Introduction

2.1 The Brief

The Hunter Centre for Entrepreneurship, and its research partner the Centre for Growth at Aston Business School, were commissioned by the Scottish Government in 2018 to deliver a quantitative research piece that explores the South of Scotland's entrepreneurial ecosystem, in anticipation of a new enterprise agency for the region. This report is based on three stages of the research.

Stage 1 conducted and analysed a sample of 1,000 adults within the South of Scotland of the Global Entrepreneurship Monitor (GEM) Adult Population Survey with additional regional ecosystem questions conducted in 2018, with benchmarking against other parts of the UK that might be comparable to the South of Scotland. The South of Scotland is remote and rural, with no significant cities, but it is also a borderland. Accordingly, we chose two types of benchmark regions: remote rural, represented by the Highlands and Islands in Scotland, and Devon and Cornwall in England, and secondly borderlands, represented by Northumberland and Cumbria bordering Scotland, and Shropshire including Telford and Wrekin and Herefordshire (sometimes known as the Welsh Marches) in England, bordering East Wales our final benchmark region, which we define as the NUTS2 region of East Wales excluding Cardiff and the Vale of Glamorgan.

Stage 2 analysed statistics on new firm births and firm growth for the South of Scotland and benchmarked regions from an integrated business database from the Office for National Statistics (ONS) and the Inter-Departmental Business Register (IDBR), an administrative database which captures information from a range of sources, amongst them VAT returns and employer Pay As You Earn (PAYE) tax and social security records. Two different approaches to measuring firm growth rates were attempted, based on slightly different methodologies developed by the Enterprise Research Centre and the ONS. Both of these in turn drew on OECD definitions of high growth firms.

Stage 3 is a regional entrepreneurial ecosystem analysis using a new methodology developed by GEM to provide a holistic view of the quality of the South of Scotland entrepreneurial economic system across six systemic conditions: Networking, Leadership, Financing, Talent, Knowledge, and Support services and intermediaries, and four framework conditions: Formal institutions, Culture, Physical infrastructure, and Demand. To measure these conditions, 98 defined variables were drawn from the regional version of GEM's Adult Population Survey (737 respondents aged 18 to 64) and the GEM Regional Expert Survey (34 completed surveys).

This report's structure follows these three stages. First, however, the sources of data and methodologies used to obtain them are summarised in the next subsection. To ease readability, all the report's data tables are included in Appendix 1, but illustrative figures are included in the main text.

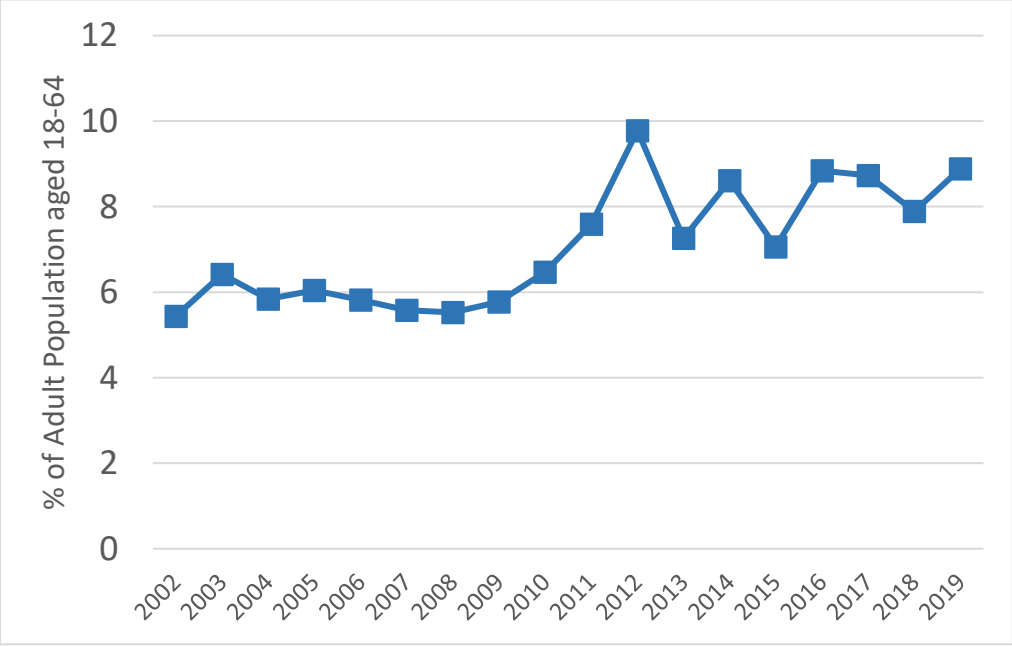
2.2 Databases used

2.2.1 Global Entrepreneurship Monitor

This annual survey is conducted in 60 to 70 countries each year. In the UK, approximately 9,000 adults aged 18 to 80 are surveyed in 80% fixed line / 20% mobile interviews, including around 2,000 adults in Scotland. There has been a Scottish oversample each year since 2000. The survey enables prevalence rates of entrepreneurial attitudes, activity and aspirations of different groups to be estimated and compared across space and over time. The database is part funded by BEIS, InvestNI and the Welsh Government, and in Scotland by the Hunter Foundation's endowment at the University of Strathclyde. We used GEM data from 2003 to 2018 for this research.

From the annual Global Entrepreneurship Monitor adult population survey samples every year from 2002 to 2019, it is clear that early-stage entrepreneurial activity rates and also business growth expectation rates changed after the financial crash of 2008. Figure 2.1 shows that up to 2010, the UK rate varied in a relatively narrow range around 6% of the working age population. Since 2010, it has ranged between 7% and 10%. We have therefore split the UK sample into two cohorts of 8 years of data each, to generate samples in the South of Scotland and benchmark regions that are sufficiently large to generate impressions of business intentions and ownership as well as business growth expectations.

Figure 2.1: Total early-stage Entrepreneurial Activity (TEA) in UK, 2002-2019



Source: GEM UK APS 2002-2019

Table 2.1 in Appendix 1 shows the actual sample sizes (unweighted) for the South of Scotland and benchmark regions for the pooled 2003 to 2010 and 2011 to 2018. While sample sizes are similar for Scotland and Wales for the two pools, sample sizes are smaller for England in the later pool. This is because of the abolition of Regional Development Agencies (RDAs) in England and consequent cessation of funding of regional oversamples. The effect of this is that annual sample sizes in English benchmark regions are more similar within cohorts, facilitating pooling of the data into the two cohorts.

ONS Business Structure Database

This database records all registered businesses in the UK, using government data such as employment and VAT records. The data is stored securely and is only available for research purposes to approved researchers in research enclave conditions. It pulls data from official records as of March each year to add to the database. It only contains basic data such as employment, sales and location but does track individual enterprises over time. We used data on new enterprise births, deaths, survival rates and growth in employment) published in December 2020 by the ONS for the years 2014 to 2019 to demonstrate trends in new firm births and growth and survival rates for the South of Scotland and benchmark regions.

We also contracted the Aston Centre for Growth at Aston University to supply statistics on new firm births and firm growth for the South of Scotland and benchmark regions from an integrated business database built from a range of official business surveys and HMRC sources maintained by the UK Data Service's Secure Lab for the years 2015 to 2018, based on a methodology developed by the Enterprise Research Centre (ERC). This UK Business Structure Database (BSD), compiled by the Office for National Statistics, records annual data on employees for the entire population of firms in the UK. This data is compiled from a series of annual 'snapshots' of the IDBR. The unit of analysis for the ERC methodology is an "employer enterprise" – a business with at least one employee – which the ERC refer to as a firm. Firms may comprise a number of distinct local units (establishments or plants) but the ERC data refers to firm-level employee numbers. The researchers linked together the annual 'snapshots' from the BSD using firm-level identifiers to form a longitudinal firm-level database for the UK and devised algorithms to produce firm-level demographic markers for 'birth' and 'death'. The birth of a firm is dated by the first appearance of non-zero employment and its death is treated symmetrically and dated by the disappearance of the last employee.

Access to the Secure Lab was restricted due to COVID-19 but sufficient work was done before lock-down to be able to report some private sector High Growth Firm (HGF) and Small High Growth Firm (SHGF) data for the South of Scotland and some of the chosen benchmark regions. Unfortunately, because of disclosure rules with the database, it was not possible to extract two measures of high growth that use turnover data for the South of Scotland, although these were available for the benchmark regions. Thus we report only employment-based measures. These measures are based on "employer enterprises" – businesses with at least one employee – which we refer to as firms.

These enterprises are in sectors other than public administration, defence, education, health and social work which are treated in this analysis as if they are public sector enterprises.

The main measure of HGFs is based on an OECD definition of the High Growth Firm, which is firms which are born before the beginning of the period, are alive at the end of the period, have at least 10 employees at the beginning of the period, and record an annual average growth of 20% in employment over the period. The US Bureau of Labor Statistics (BLS) has argued that the OECD measure is too narrow and excludes firms with less than ten employees in the first year of the three year growth period. Their alternative measure extended the definition of a high-growth firm to include firms with less than ten employees if the firm added eight or more employees during the three year growth period. This measure is reported here as Small High Growth Firms (SHGFs).

Please note: The work in this report contains statistical data from ONS which is Crown Copyright. The use of these data does not imply the endorsement of the data owner or the UK Data Service at the UK Data Archive in relation to the interpretation or analysis of the data. This work uses research datasets which may not exactly reproduce National Statistics aggregates.

2.3 New data collection

2.3.1 Adult Population Survey of the South of Scotland

In October 2018, a modified version of the standard GEM Adult Population Survey with additional regional ecosystem questions was administered to a sample of 1,001 adults aged 18 to 80 within the South of Scotland by the same vendor used by the UK GEM team to conduct the UK APS. 92% were contacted by fixed line and 8% by mobile. The oversample was necessary as a national random sample would usually only include around 130 respondents from the South of Scotland region which is not sufficient for statistical analysis. Together with the 2018 UK Adult Population Survey conducted between June and October, this provided the data for Stage 1.

Table 2.2 in Appendix 1 compares the distribution by age and gender in the sample with the mid-year population distribution estimate for 2017. It shows that young males are under-represented in the sample. This is unfortunately typical for surveys like this, because young males are particularly difficult to contact and less likely to agree to a survey, and the data were weighted by age and gender to take this into account.

2.3.2 Measuring the Entrepreneurial Ecosystem of the South of Scotland

Stage 3 evaluates the entrepreneurial ecosystem of the South of Scotland. This analysis is based on the unique methodology developed by the GEM for studying regional entrepreneurial ecosystems. This approach is different from that taken in evaluations of national framework conditions reported in annual Global GEM reports. As discussed further below, the ecosystem approach considers

entrepreneurship as an activity that is inherently embedded within its regional geographical context. This provides policy with a framework to understand entrepreneurship, and therefore the rationales for and design of pertinent interventions, from a perspective that is closer to where entrepreneurship is actually enacted: by entrepreneurs in their regional contexts.

2.3.2.1 The theoretical model of Entreprenerial Ecosystems

The evaluation of entrepreneurial ecosystems within GEM is based on the now well-established conceptual model presented in Figure 2.2, first developed by Erik Stam in 2015.[1] Here, entrepreneurial ecosystems are defined as a set of interdependent actors and factors coordinated in such a way that they enable productive entrepreneurship within a particular geography.[2] This approach builds on related concepts such as clusters, industrial districts, and innovation systems that have been of great relevance to regional economic development policy over the last half a century or so. Importantly, while these older concepts focussed on *firms within industry sectors*, with entrepreneurial ecosystems, emphasis is more on *entrepreneurial individuals across industry sectors* and the regional social and economic context within which their entrepreneurial activity is situated.

As Figure 2.2 below shows, an entrepreneurial ecosystem is comprised of ten elements sub-categorised as framework conditions and systemic conditions. Framework conditions are the social and physical conditions that determine human action and interactions in a given region, including the presence of and access to buyers (demand) of new goods and services. Framework conditions are essentially the fundamental drivers of value creation. They include *Formal institutions*, *Culture*, *Physical infrastructure* and *Demand* (i.e. the internal regional market and access to external markets).

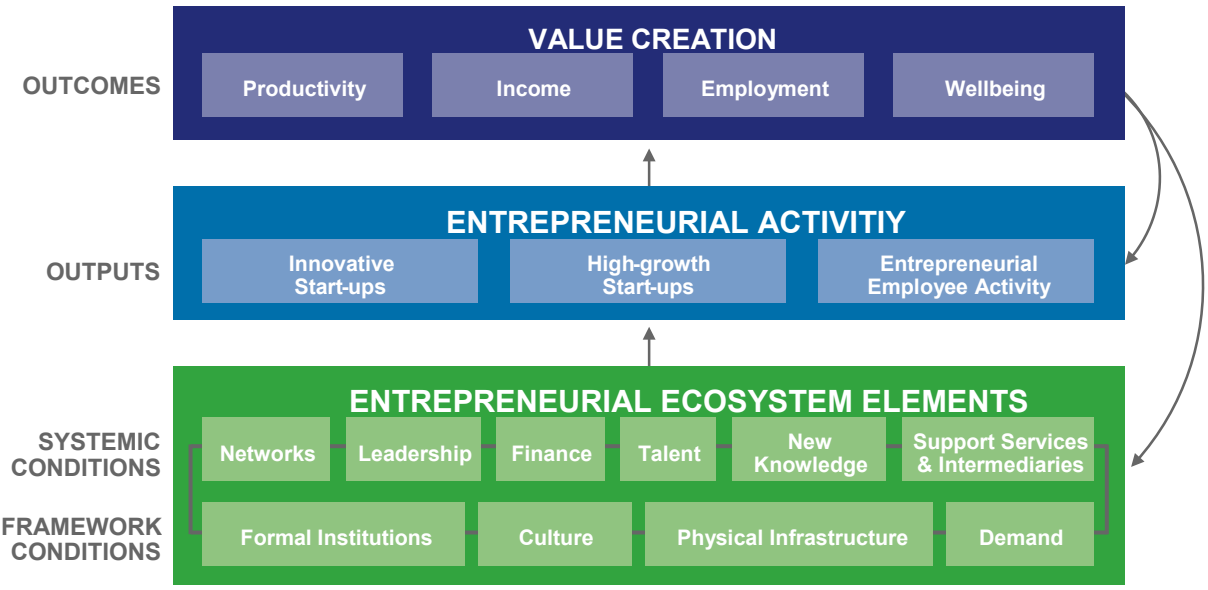
Building on these fundamentals are systemic conditions. These are system-level factors that individually and interactively more directly impact entrepreneurial activity and ultimately the success of the ecosystem. *Networks* provide a source of and a distribution mechanism for knowledge and other resources; *Leadership* affords the ecosystem with visible local champions that help shape the ecosystem and provide mentoring, role-modelling and entrepreneurial inspiration for others in the region; the availability of various forms of enterprise *Finance* fuels new and growing firms; adequate supplies of diverse and suitably qualified and affordable *Talent* are required to drive growth; *Knowledge* spillovers from public and private organisations create innovation and entrepreneurial opportunities within a given region; and, *Support services and intermediaries* help lower entry barriers and facilitate growth with services relevant to the needs of entrepreneurs in the region.

[1] Stam, E., (2015), Entrepreneurial ecosystems and regional policy: a sympathetic critique, European Planning Studies 23, 1759-1769.

[2] Stam, E. & Spigel, B., (2017), Entrepreneurial Ecosystems, in, Blackburn, R, De Clercq, D, Heinonen, J, & Wang, Z (Eds.), Handbook for Entrepreneurship and Small Business, SAGE, London.

These ten framework and systemic conditions are the pillars upon which entrepreneurial activity in the form of innovative start-ups, high-growth start-ups and entrepreneurial employees that create new value within more established organisations is built. In turn, the ultimate outcome of such productive entrepreneurial activity is new net value in society. This may include increased productivity, incomes, employment and wellbeing at the societal level beyond the benefits accruing to individual entrepreneurs. Over time, these outputs and outcomes themselves influence the framework conditions (e.g. entrepreneurial success could cultivate a strong entrepreneurial culture in a given region) and systemic conditions (e.g. leadership, networks, a richer and more sophisticated support infrastructure). As such, the framework suggests that policy efforts to strengthen weaker ecosystem pillars could stimulate a virtuous cycle that enhances and sustains regional economic development outcomes.

Figure 2.2: Key elements, outputs and outcomes of the entrepreneurial ecosystem



Source: Stam (2015)

2.3.2.2 Data and analysis

For the Stage 3 task of evaluating the South of Scotland's entrepreneurial ecosystem and computation of the Entrepreneurial Ecosystem Index (ESI), two established GEM data collection instruments were employed to collect primary data from respondents in the area:

- The Adult Population Survey (APS): data from a representative oversample cohort of 737 adults aged 18 to 64 in the South of Scotland region, that includes entrepreneurs and other economic activity categories, was collected during the annual GEM survey in 2018. This is a subsample of the 1001 adults aged 18 to 80 as described in section 2.3.1 above.
- The Regional Expert Survey (RES): to complement the APS, we also collected data from 34 entrepreneurship experts in the South of Scotland region between March 2019 and January

2021 (21 of which completed the survey before the first lockdown on 16 March 2020). Entrepreneurial experts includes active entrepreneurs as well as officials in organisations that provide support services for entrepreneurship, including government policy officers, business associations, etc.

A total of 771 respondents were thus surveyed for this study, capturing 98 variables across the ten entrepreneurial ecosystem pillars that represent the elements outlined in the theoretical model in Figure 2.2. Table 2.3 summarises the full set of indicators evaluated in this study. All the indices are expressed on a ten-point scale. The score per pillar is the average of the scores for each component variable re-scaled to the 0-10 range. The indices for the framework conditions and the systemic conditions are calculated as an average of respective pillars. Finally, the Entrepreneurial Ecosystem Index composite is a combination of framework conditions index and the systemic conditions index weighted to the proportions of their representation in the model (i.e. 40% framework, and 60% systemic conditions respectively).

Because two-fifths of the expert sample were surveyed after the first COVID-19 lockdown, we tested for significant differences in responses before and after the first lockdown. With the exception of items in the Knowledge pillar, there was no significant difference between responses. In the case of the Knowledge pillar, responses after the first lockdown were significantly lower. This is understandable as the pillar is about knowledge flows within the ecosystem.

3 Stage 1: Benchmarking entrepreneurial attitudes, intention and activity in the South of Scotland

3.1 Introduction

Stage 1 reports on entrepreneurial attitudes, intentions and activity rates in a sample of 1,000 adults within the South of Scotland of the Global Entrepreneurship Monitor (GEM) Adult Population Survey with additional regional ecosystem questions conducted in 2018, with comparisons to Scotland and the UK. Since the South of Scotland is a relatively remote, rural, border region, a fairer comparison would be with other regions of the UK with similar characteristics. We chose to benchmark the South of Scotland with Devon and Cornwall, Cumbria and Northumberland, East Wales, Herefordshire and Shropshire and Highlands and Islands, by pooling the UK GEM databases from 2003 to 2010 and 2011 to 2018. Please note that all data tables referred to in the text are in Appendix 1.

3.2 GEM APS 2018 samples

3.2.1 Entrepreneurial attitudes

Tables 3.2.1.1 to 3.2.1.4 show that entrepreneurial attitudes are relatively weak among young people in the South of Scotland, in comparison with Scotland and the UK, and relatively strong among older people. Yet young people in the South of Scotland are more likely to believe that there is a positive entrepreneurial culture in the UK than middle-aged or older people (tables 3.2.1.5 to 3.2.1.7). However, there is some evidence to suggest that they might not be as well informed or connected to entrepreneurship. For example, far fewer young people in the South of Scotland knew someone who had started a business in the last two years (table 3.2.1.1) than young people across Scotland and the UK. While we do not have equivalent estimates for Scotland or the UK, only a quarter of middle-aged and older people in the South of Scotland agreed with the description of their local area as a functioning entrepreneurial ecosystem, compared with just over a third of young people (table 3.2.1.8).

Compared with women across Scotland and the UK, women in the South of Scotland appear to have more favourable entrepreneurial attitudes in some respects. They are just as likely as men to know a recent start-up entrepreneur and to think there are lots of opportunities for starting a business in their local area (tables 3.2.1.9 and 3.2.1.10). Typically, women in the UK are less likely than men to know a recent start-up entrepreneur and less likely to perceive there are good opportunities. However, in other attitudes the differences are small or non-existent, for example on entrepreneurial self-efficacy (believing one has the skills, knowledge and experience to start a business) and on fear of failure (tables 3.2.1.11 and 3.2.1.12). While in general there are no significant differences between men and women on aspects of national entrepreneurial culture, in the South of Scotland men were

significantly more likely than women to agree with the statement “In the UK, most people consider starting a new business a desirable career choice” (55% versus 47%). Finally, there was no significant difference between men and women in the South of Scotland in the recognition of their local area as an entrepreneurial ecosystem.

Across Scotland and the UK as a whole, non-graduates tend to be less likely to know a recent entrepreneur than graduates, but in the South of Scotland, they were just as likely as graduates to know a recent entrepreneur (table 3.2.1.13) and to feel they had the knowledge, skills and experience to start a business (table 3.2.1.15). Graduates in the South of Scotland appeared to be less likely to perceive opportunities in their local area as graduates across Scotland or the UK (table 3.2.1.14). Across Scotland and the UK, graduates tend to have a higher fear of failure than non-graduates (table 3.2.1.16), perhaps because they perceive the opportunity cost is higher, given their earning power and status in society. It is notable that this did not hold in the South of Scotland, perhaps because opportunity costs are lower for graduates considering starting a business in remote rural areas. In general, the national entrepreneurial culture is not perceived as favourably by graduates in Scotland as by graduates across the UK, with graduates in the South of Scotland adopting a position between Scotland and the UK.

Migrants – whether they are regional in-migrants, immigrants, or returned emigrants – are more likely to report they have the skills, knowledge and experience to start a business than those who have lived all their lives in the same region. This is just as true in the South of Scotland as in Scotland or across the UK, as table 3.2.1.17 shows. In general, there were no significant differences between migrants and non-migrants in perceptions of the national entrepreneurial culture. One exception was the high proportion of non-migrants in the South of Scotland (80%) who agreed that in the UK, those successful at starting a new business have a high level of status and respect versus 72% for non-migrants; the latter rate is more typical of both migrants and non-migrants across Scotland and the UK.

Individuals with a family business background were significantly more likely to know a recent entrepreneur, perceive opportunities and agree they had the skills knowledge and experience to start a business (tables 3.2.1.18 to 3.2.1.20). However, a family business background had no significant effect on fear of failure or perceptions of national entrepreneurial culture in the South of Scotland, Scotland or the UK.

3.2.2 Entrepreneurial intention and activity

Table 3.2.2.1 shows the estimates of different rates of intention or entrepreneurial activity along the entrepreneurial process in the South of Scotland, Scotland and the UK for 2018 for young adults (18 to 29), middle-aged adults aged 30 to 64, and older adults aged 65 to 80.

The process starts with those who intend to start a business in the next 3 years but have no current entrepreneurial activity, then those who are actively trying to start a business but who are not current business owners, then those who are running their own new business that is less than 3½ years old

but not also running a business that is older than that, then the established business owner-managers running businesses that are at least 3½ years old.

Splitting the samples by age in this way illustrates the difference in the pattern of engagement in the entrepreneurial process in the South of Scotland compared with Scotland as a whole and the UK as a whole. A broad finding is that engagement by young people is lower and engagement by older people is higher in the South of Scotland, and a consequence of this is that overall rates of early-stage entrepreneurial activity are lower and overall established business ownership rates are higher.

An important consequence of this is that older people are much more significant contributors to entrepreneurship in the South of Scotland than in Scotland or the UK. Indeed, activity rates in most countries and regions of the world are low among older people, and GEM typically only reports rates for adults aged 18 to 64. In this report, we extend the age range to 80 because of the strategic importance of older entrepreneurs in regions like the South of Scotland. Table 3.2.2.1 suggests that there may even be more older people in the South of Scotland running their own new business than younger people, although we cannot be sure of this because of sample size issues. As we show later, this skew towards late stage entrepreneurial activity and engagement by older people is typical of remote rural regions in the UK.

Table 3.2.2.2 shows that participation by women in the entrepreneurial process is lower in later stages in the South of Scotland, Scotland and the UK. The relative contribution of women in early and late stage entrepreneurial activity may be higher in the South of Scotland than in Scotland or the UK, because of lower rates of early-stage entrepreneurial activity among men, and higher rates of late-stage entrepreneurial activity among women, in the South of Scotland. Note though that the absolute differences in male or female rates across the three samples are not statistically significant, probably because of the smaller size of the South of Scotland sample.

Table 3.2.2.3 shows that graduates are more likely than non-graduates to engage in early-stage entrepreneurial activity in the UK as a whole, but this difference is much less marked in Scotland and there appears to be no difference at all in the South of Scotland. Graduates are also less prevalent in the South of Scotland than in Scotland, comprising 24% of the population aged 16 according to the 2011 Scottish census, compared with 26% across Scotland[3].

Migrants (comprising regional in-migrants, immigrants and returned emigrants) tend to have higher rates of intention and entrepreneurial activity (especially at the earliest stages) than non-migrants. In the case of the South of Scotland, the opposite seemed to be the case in 2018: the difference was higher in the late stages of the entrepreneurial process (table 3.2.2.4). This could be due to the relatively high proportion of English in-migrants in the South of Scotland. These tended to be older and wealthier on average than immigrants; the latter tend to have higher intention and start-up rates but higher attrition. Only 33 immigrants were picked up by the South of Scotland sample, which is too small to make definitive estimates of their entrepreneurial attitudes, intentions or activity.

[3] The rate for Dumfries and Galloway was 22% and for Scottish Borders was 27%.

A family business background is a strong predictor of entrepreneurial intentions and activity across Scotland and the UK. In the South of Scotland, this effect seems to be more muted, as table 3.2.2.5 shows.

In summary, the data shows a somewhat older business owner/manager profile in the South of Scotland than in Scotland or in the UK, with fewer new entrepreneurs and more older business owner/managers than the national average prevalence rates. Factors that usually indicate higher early-stage entrepreneurial activity rates, such as gender, education, migrant status and family business background appeared to be less influential in the South of Scotland than in Scotland or the UK as a whole.

3.2.3 Future Business Size expectations

The GEM APS asks entrepreneurs how many people they expect to employ in five years' time. This gives an indicator of ambition among early-stage and late-stage (i.e. established) entrepreneurs. Tables 3.2.3.1 and 3.2.3.2 provide a breakdown of expected future business size by four categories for early-stage and late-stage entrepreneurs. It suggests that expected future business size among early-stage entrepreneurs may be lower in the South of Scotland than in Scotland and the UK for the largest category. However, it is similar among late-stage entrepreneurs. This result should be treated with caution however, because of the very small number of early-stage entrepreneurs in the sample (less than 40), of which only one expected to employ at least 20 people.

3.3 Comparison with UK benchmark regions, using pooled multi-year GEM APS data

Since the South of Scotland is a relatively remote, rural, border region, a fairer comparison would be with other regions of the UK with similar characteristics. We chose to benchmark the South of Scotland with Devon and Cornwall and Highlands and Islands as remote rural regions and with Cumbria and Northumberland, East Wales, and Herefordshire and Shropshire as border regions, by pooling the UK GEM databases from 2003 to 2010 and 2011 to 2018 to generate as large samples as possible of each benchmark region.

To illustrate the contribution of older people to entrepreneurial activity in remote rural regions, especially at later stages of the entrepreneurial process, in tables 3.3.1 (2003 to 2010) and 3.3.2 (2011 to 2018) we show results for two age groups: the standard 18 to 64 years age group and the 65 to 80 years age group.

Although some caution is needed in interpreting these patterns because of small sample sizes for some regions, the South of Scotland is more similar in profile to the Highlands and Islands and Devon and Cornwall than to the border benchmark regions. It does appear however to have lower intention and nascent entrepreneurship rates than the other regions. The rate of established business ownership is higher in all benchmark regions than in Scotland or the UK as a whole, demonstrating

that the skew towards late stage entrepreneurial activity in the South of Scotland is typical for a remote rural region.

As with other regions, entrepreneurial activity does appear to have increased across these two periods in the South of Scotland among older people. However, among those younger than 65, rates do not appear to have risen in the South of Scotland after the financial crash, unlike its benchmark regions. This can be seen also in Table 3.3.3 which shows business size expectation rates for early-stage entrepreneurs aged 18 to 64 for the two pooled samples: those expecting the business will employ at least two people other than the owners, at least five people, or at least ten people. Note: we do not show them separately for older people because high job expectation is extremely rare for this group. These estimates should be treated with caution and as illustrative of broad trends only, because early-stage entrepreneurs with high job expectations are very rare.

4 Stage 2: Official statistics on new firm births and firm growth for the South of Scotland and benchmarked regions

4.1 Introduction

Stage 2 reports statistics on new firm births and firm growth for the South of Scotland and benchmarked regions from an integrated business database from the Office for National Statistics and the Inter-Departmental Business Register.

The data shows very similar patterns to the GEM data in Stage 1. However, because this data is effectively a census and not a survey, we can be much more confident in our comparisons between regions. As the tables in this section show, that the new enterprise birth rate in the South of Scotland and the high growth enterprise rate (OECD employment-based definition) ranges from 70% to 80% of the average rates in its benchmark regions, depending on how these rates are measured.

4.2 Enterprise Research Centre estimates

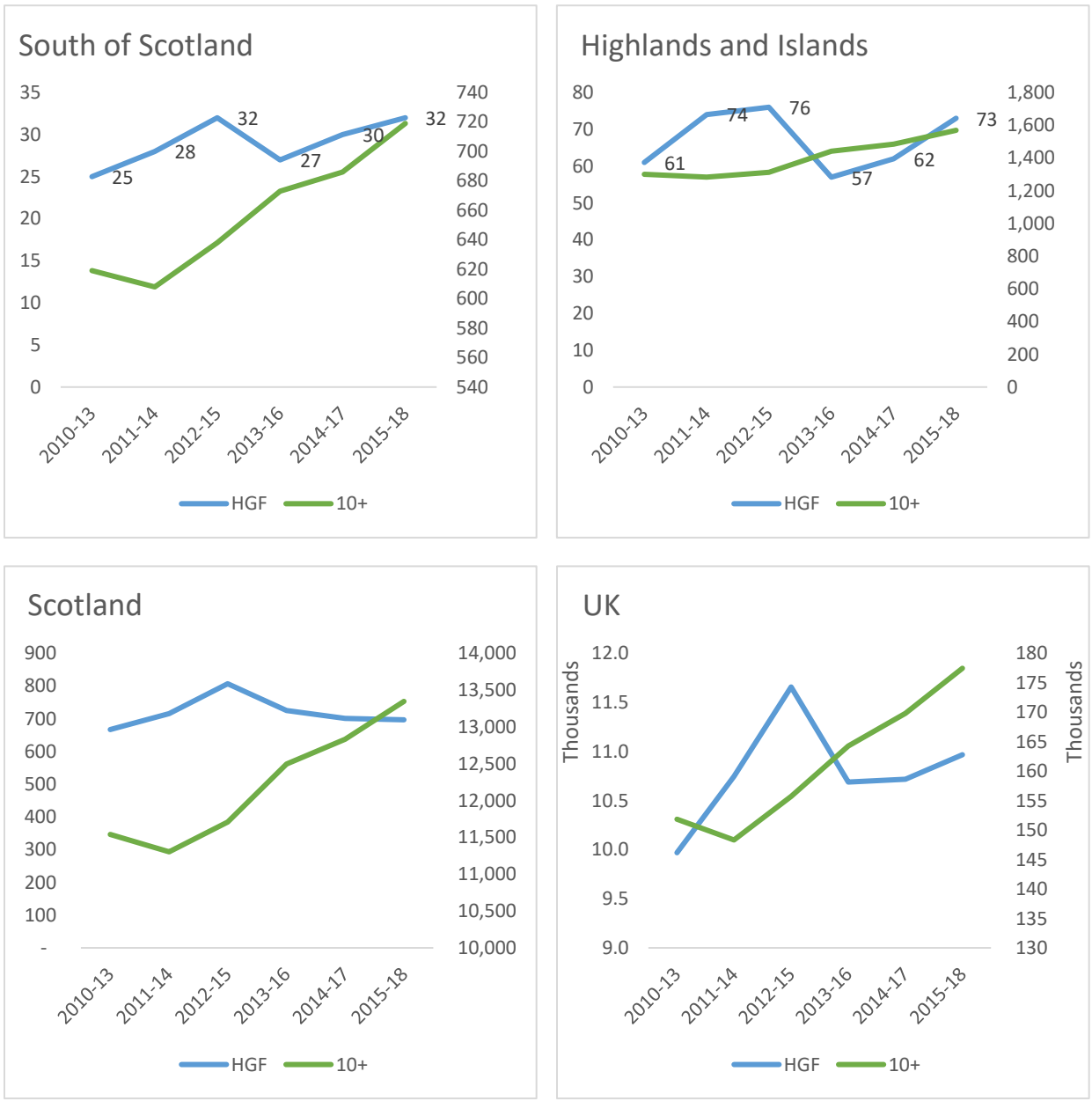
For this study, the Enterprise Research Centre (ERC) was commissioned to estimate firm birth and growth rates for the South of Scotland and available benchmark regions (based on LEP regions) from an integrated business database from the Office for National Statistics and the Inter-Departmental Business Register, using its Growth Dashboard methodology. The ERC defines ***new firm births*** using the OECD definition of an employer enterprise, in which the start year is taken as the year an enterprise took on its first employee according to the Business Structure Database. ***New enterprise births*** in the business demography releases of the ONS are defined differently as enterprises that appear for the first time in the Business Structure Database and have either sales or employees in that year.

Unfortunately, the ERC researchers discovered that the number of Start-ups Scaling (<£500k to £1m + in 3 years over the 2015-18 period) and Scaling Survivors (£1-2m to £3m+ in 3 years over the 2015-18 period in the South of Scotland were lower than the threshold figure allowed by the database to protect confidentiality of individual enterprise data and thus were unable to provide estimates for these growth measures for the South of Scotland. The fact that the statistics were available for benchmark regions suggests that the rate of start-ups scaling and scaling survivors may be lower in the South of Scotland.

Two other statistics could be computed, however. The first is the High Growth Firm rate, using an OECD definition that is firms which are born before the beginning of the period, are alive at the end of the period, have at least 10 employees at the beginning of the period, and record an annual average growth of 20% in employment over the period. The second is the Small High Growth Firms

(SHGFs) rate which includes firms with less than ten employees which added eight or more employees during the three year growth period. Table 4.2.1 shows the estimates for these statistics. Overall, the rates for the South of Scotland seem lower than for the benchmark regions. Figure 4.2.1 shows the trend in the number of HGFs and firms with at least 10 employees over time for the South of Scotland, Highlands and Islands, Scotland and the UK. The trend appears to be relatively positive for the South of Scotland.

Figure 4.2.1. Trend in HGFs and firms with at least 10 employees in South of Scotland, Highlands and Islands, Scotland and UK



Source: Enterprise Research Centre

4.3 Office of National Statistics Business Demography estimates

4.3.1 Enterprise Births, Deaths, Survival and Growth

On 17 November 2020, the ONS issued a statistics update on Business demography in the UK for the years 2014 to 2019. It included estimates of Business and Employer Births and Deaths, Survival rate estimates and, for the first time, an estimate of High Growth Enterprises, based on the OECD definition. As explained in section 4.2, there are differences in the methodology used by the ONS and the methodology used be the ERC. For example, the ERC excluded certain sectors dominated by the public sector from its estimates and only used employer enterprise data. Accordingly, we found it useful to construct estimates based on the ONS methodology for comparison purposes.

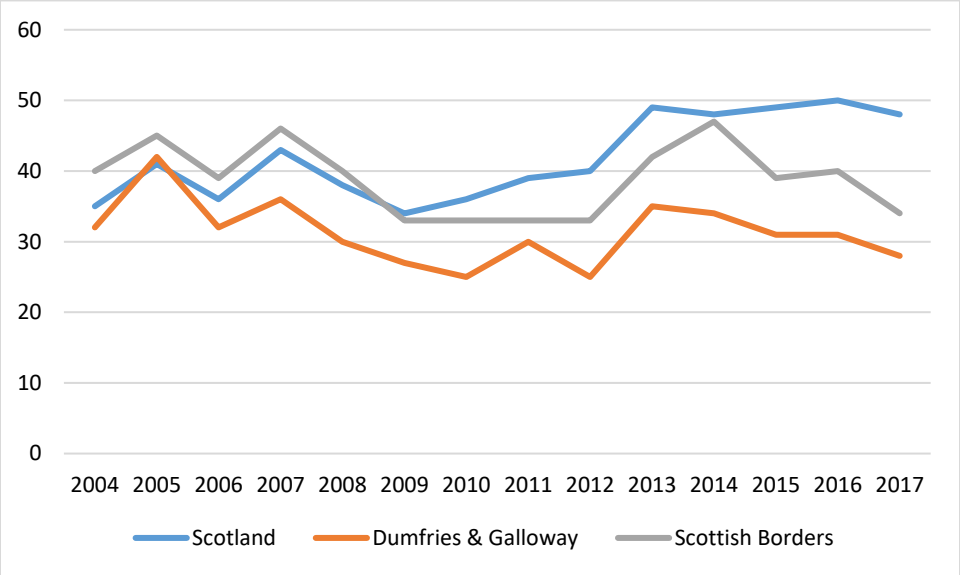
In addition to a longer run of enterprise birth data, this gives us six cohorts of "high growth enterprises", defined by the ONS as enterprises that employed at least 10 people at the start of a period and grew at an average annual rate of 20% over the next three years (i.e. a total of at least 72.8% growth in employment). From this we can calculate two high growth enterprise rates: first, as a percentage of all active enterprises with at least 10 employees in the starting year for the periods 2014 to 2017, 2015 to 2018 and 2016 to 2019, and secondly as a percentage of the human population in each of the six years.

The results in Table 4.3.1 to 4.3.4 suggest that New Enterprise and High Growth Enterprise rates for the South of Scotland are around three-quarters the rate of benchmark regions, and that the rate for the 2015 starting year (the year used in section 4.2) may be on the high side for the South of Scotland. Furthermore, the rate of decline that is evident in most regions over the period 2014 to 2019 is more marked in South of Scotland than in every other region except Cumbria and Northumberland.

This relative decline has been going on for some time, as Figure 4.3.1 shows. Figure 4.3.1 plots business registrations per 100,000 people from 2004 to 2017. It shows that the South of Scotland had the same rate of business registrations as Scotland in the mid 2000's, but did not participate in the increase in business registrations in Scotland after the 2008 crash.

Finally, Table 4.3.5 shows that New Enterprises survival rates in the South of Scotland are close to the average for its benchmark regions, though a little lower than the other remote rural regions. Within the South of Scotland, however, Dumfries and Galloway have lower five year survival rates (41%) than Scottish Borders (47%). Survival rates need to be interpreted with care. Regions with high enterprise birth rates often have high enterprise death rates, and this churn is indicative of dynamic business ecosystems. For example, the five year survival rate for London is 39%. However, regions with low endowments of human capital and low levels of local demand also have low enterprise survival rates. For example, the five year survival rate for West Dunbartonshire is 32%.

Figure 4.3.1. Business registrations per 10,000 adults in Scotland, Dumfries & Galloway and Scottish Borders, 2004 to 2017



Source: Scottish Government http://statistics.gov.scot/data/business-demography---births-and-deaths

4.3.2 Demographics and enterprise rates at the regional level[4]

As Table 4.3.1 shows, across the UK, growth aspiration at the regional level is associated with regional business activity, productivity, and diversity. For example, at NUTS2 level, 31% of the variability in the pooled 2013 to 2017 TEA rate, but 56% of the high job expectation TEA rate (owner expects at least 10 jobs in five years) was associated with the proportion of foreign-born individuals. While the distribution of early-stage activity is most strongly associated with gross disposable household income per capita, reflecting consumer demand, human capital and wealth, growth aspiration is more strongly associated with gross value added per capita, a measure of local business activity. All measures of early-stage entrepreneurial activity are moderately associated with regional productivity (GVA per hour worked).

This finding supports earlier work conducted for the ERC, which finds that the link between firm-level employment and productivity growth is not a simple one[5]. Fast-growth definitions in terms of

[4] Some of the text from this section is taken from Levie, J., Mwaura, S., Sahasranamam, S., Hart, M., Prashar, N. and Bonner, K. (2018). Entrepreneurial Ecosystem – Benchmark Research Final Report. Prepared for Entrepreneurship, Values-based Business and Small Business Policy, The Scottish Government.

[5] DU, J and Bonner, K. (2016). Decomposing UK aggregate labour productivity and growth: 1998-2013 using the

employment and productivity capture rather different sets of firms, indicating potential conflict in goals. On the whole, employment-based fast-growth firms generate lots of jobs but have mixed productivity records, while productivity-based fast-growth firms have lower job creation records but show productivity superiority. It is important to recognise that while there may be some strong correlations between regional factors and regional growth-oriented entrepreneurship prevalence rates, the effect of these on individual entrepreneurial propensity tends to disappear in UK-wide multi-level analyses[6]; individual demographic factors have much more influence at the individual level. Of course, this finding simply reinforces the importance of human capital – it does not mean that region does not matter. Regions that have high levels of economic activity attract people with high human capital, who are in turn most likely to start businesses, especially if they have high disposable income.

We know from published research that the connection between growth expectations and realised growth is small to medium – it is significant, but not very strong[7]. Factors affecting growth intentions include wealth-seeking motivation, risk-taking propensity, education level and innovativeness. Growth expectations tend also to be influenced by current economic growth conditions, which may be different to the actual economic conditions that the venture will face in the future.

The rate of firm births in a region is a function of supply of entrepreneurial individuals, demand for their services, and the regional context that facilitates the matching of supply and demand.

Looking at the supply side, there are correlations between regional enterprise birth rates and the proportion of types of individuals in the regional population, such as immigrants, ethnic minorities and graduates. As Figure 4.3.1 shows, there is a remarkable correlation between the proportion of immigrants in the population at Local Authority level in Scotland and business registrations. Dumfries & Galloway has one of the lowest proportions of immigrants of any local authority in Scotland, while the proportion in Scottish Borders is slightly below the average for Scotland of nine percent. It is noticeable that both Dumfries and Galloway and Scottish Borders are below the trendline, suggesting that other factors are influential in their business registration rate.

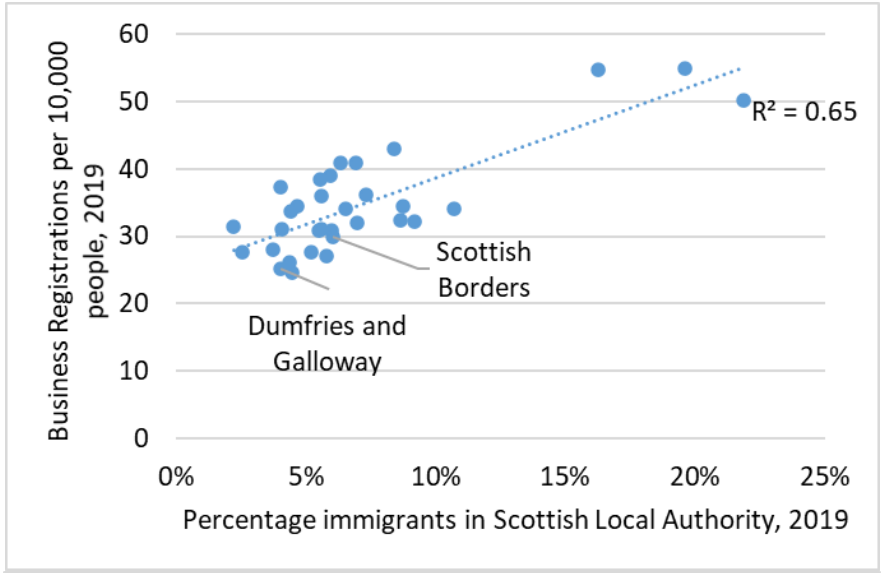
Figures 4.3.2 and 4.3.3 give an insight into the positive link between regional demand in terms of wealth, population density and population growth, and both enterprise births and enterprise growth in Scottish local authority regions. In summary, wealthier, more densely populated and growing regions tend to have higher rates of start-up and high growth enterprise activity, though it appears that many less densely populated regions (but not the South of Scotland) may harbour high rates of high growth enterprise activity .

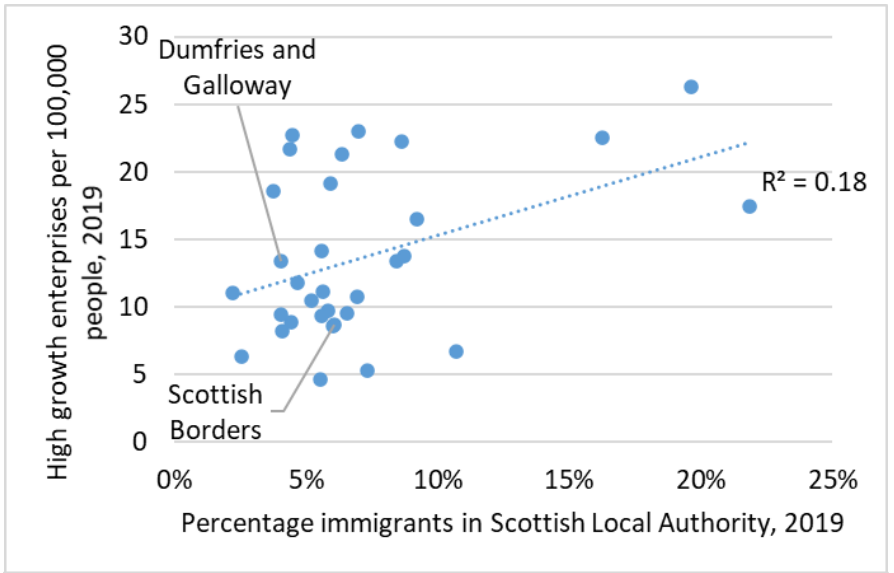
ONS business structure database data. Enterprise Research Centre Research Paper No. 48, June.

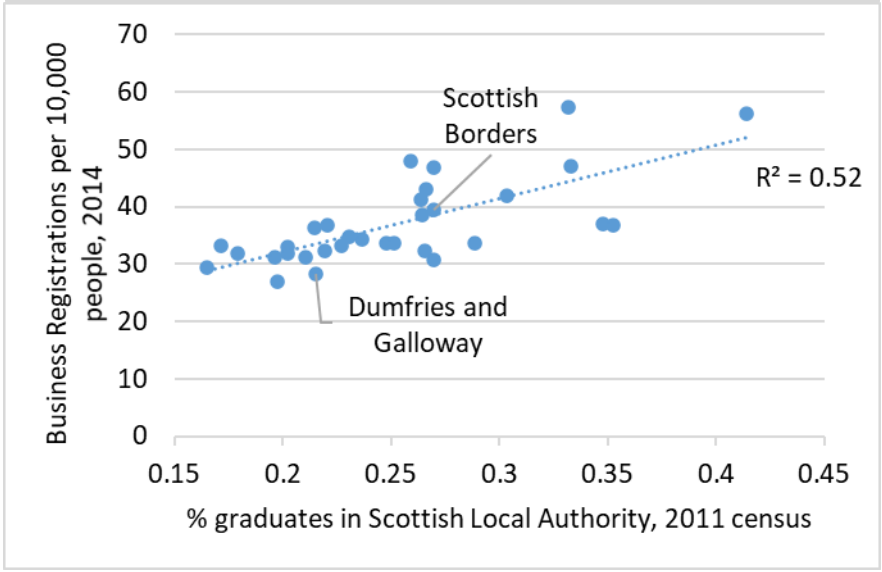
[6] Hart, M. and Mickiewicz, T. (2016). Ambitious Entrepreneurship and Migration A Multi-Level Study across the Local Authorities in England and Wales. Enterprise Research Centre Research Paper No 47, July.

[7] Levie, J. and Autio, E. (2013). Growth and growth intentions- a meta-analysis of existing evidence. Enterprise Research Centre White Paper, April.

Figure 4.3.1 Correlations of regional human capital measures with regional start-up and high growth enterprise rates in Scottish local authorities







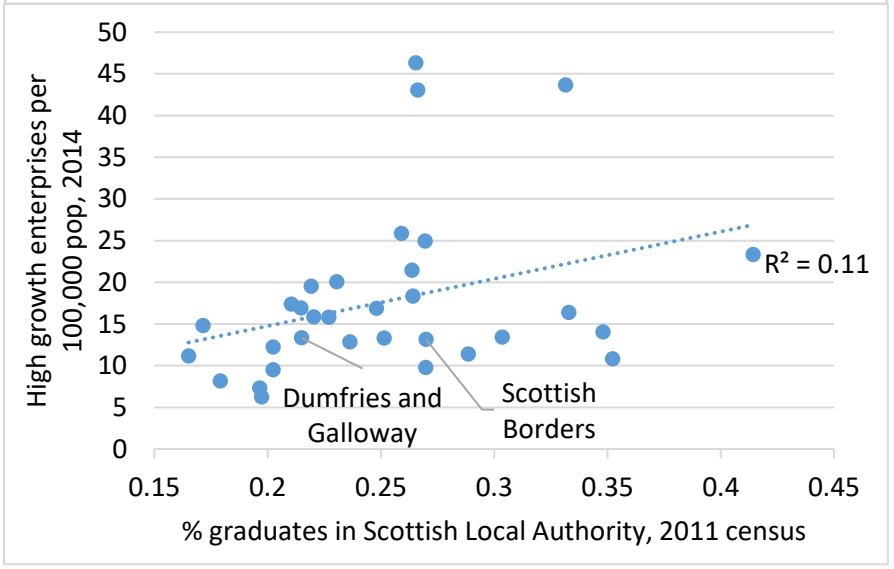
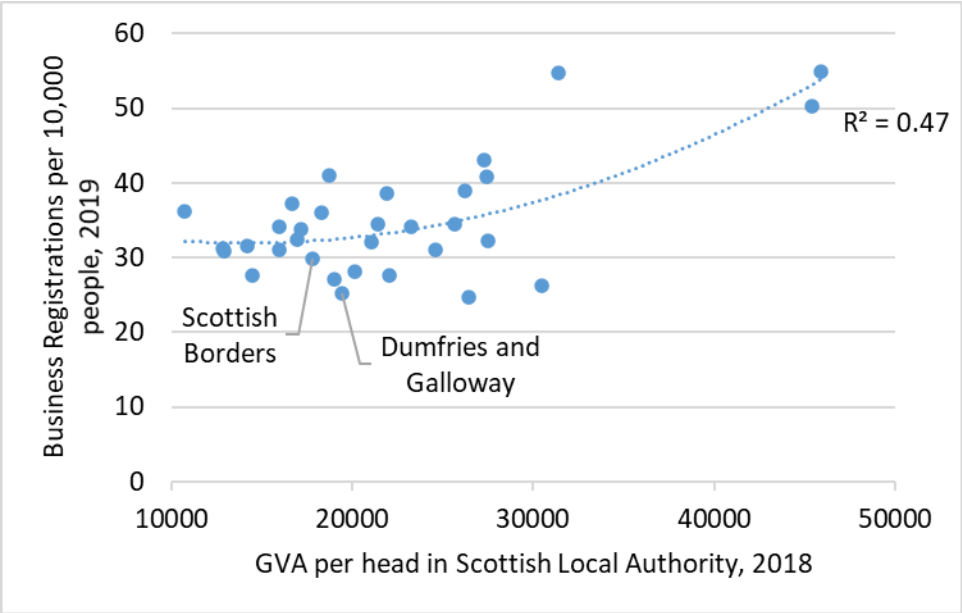


Figure 4.3.2 Correlations of regional demand measures with regional start-up and high growth enterprise rates in Scottish local authorities



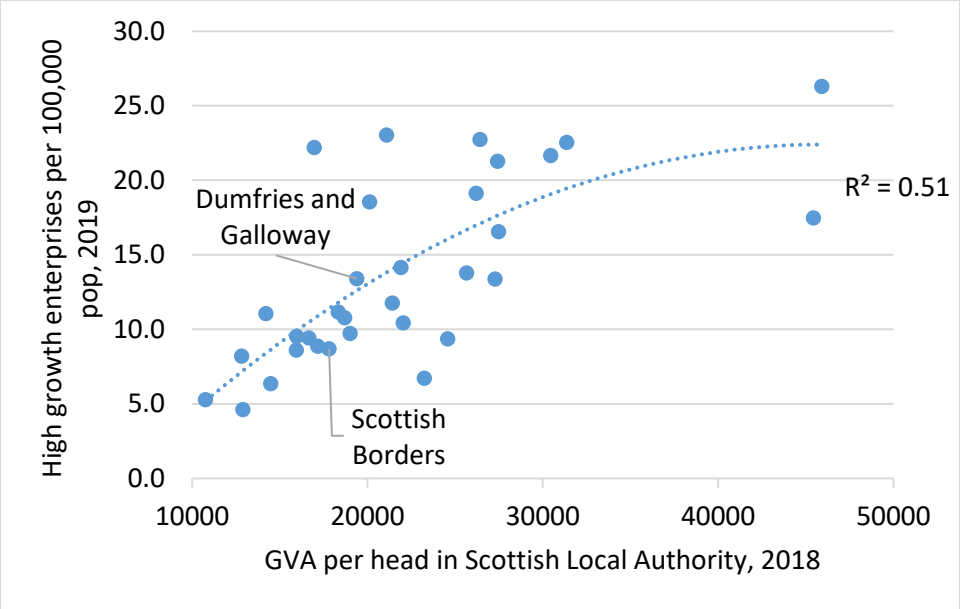
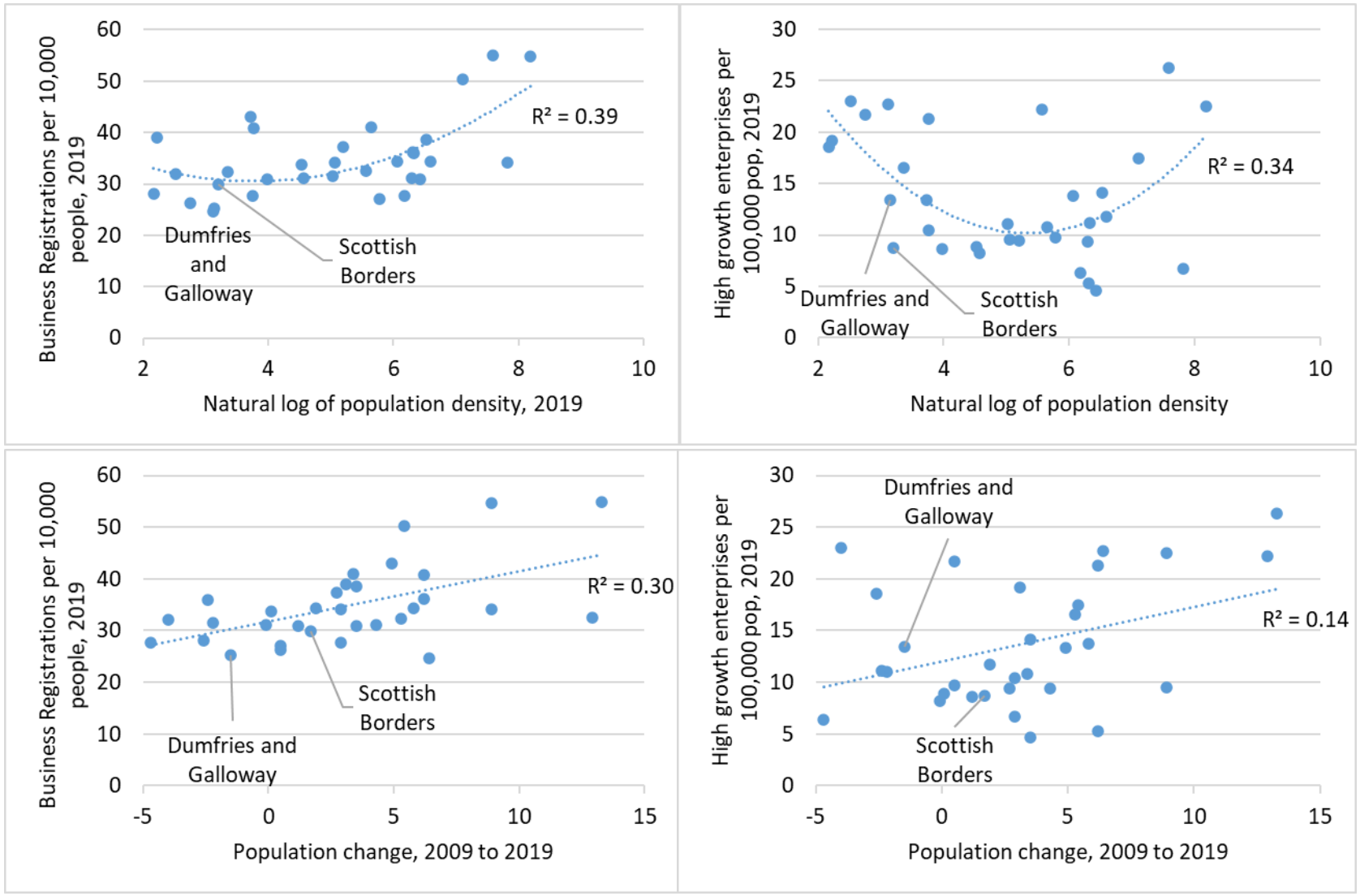


Figure 4.3.3 Correlations of regional population metrics with regional start-up and high growth enterprise rates in Scottish local authorities



5 Stage 3: South of Scotland's entrepreneurial ecosystem

In Stage 3, we carried out an analysis of the South of Scotland's entrepreneurial ecosystem using the Global Entrepreneurship Monitor's latest Regional Entrepreneurial Ecosystem methodology, as described in section 2.3.2.

5.1 Findings: The Entrepreneurial Ecosystem of the South of Scotland

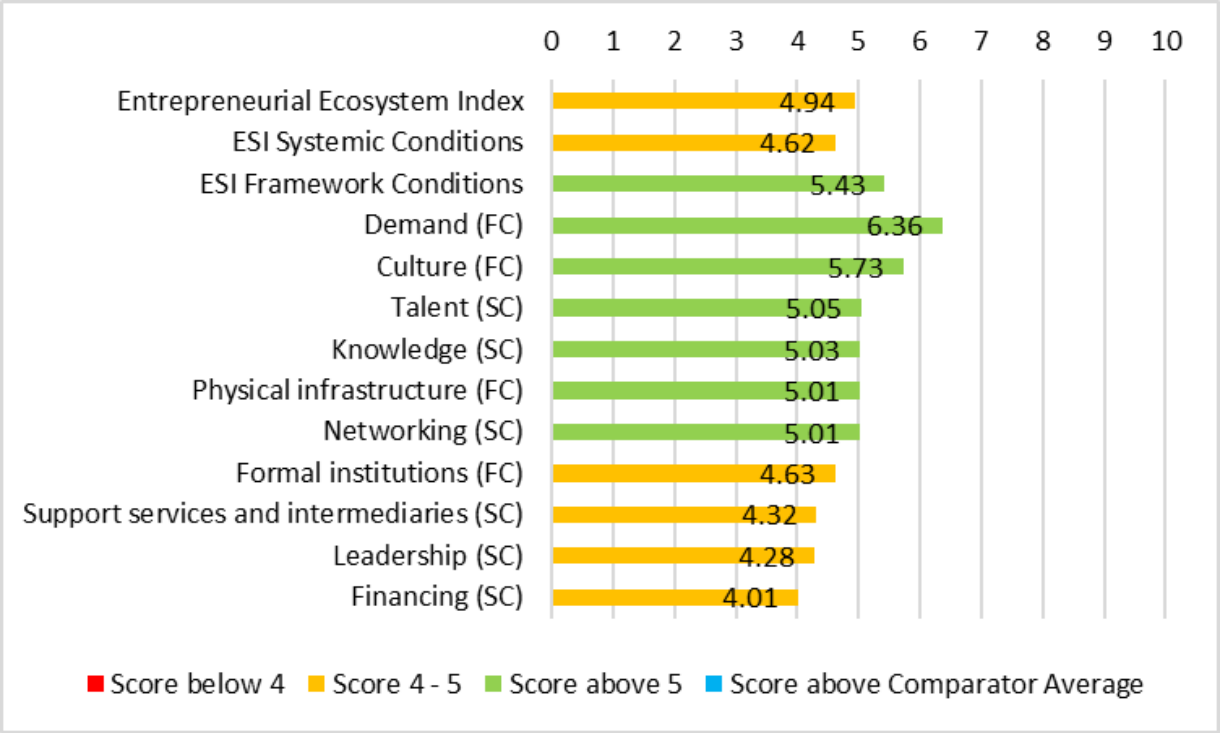
A summary evaluation of the entrepreneurial ecosystem of the South of Scotland is presented in Figure 5.1. This includes final scores out of 10 for each of the 10 ecosystem pillars described in section 2.3.2, the overall Entrepreneurial Ecosystem Index (ESI) and its two sub-indices representing Framework Conditions and Systemic Conditions.

We use the BRAG code, an extended traffic colour scheme, to simplify the presentation. In this section, all scores are on a 0 to 10 scale. In the figures, all scores below four are coded in red, those between four and five are coded in amber, and scores of five and above are coded in green. Scores above the average returned for the 12 regions studied thus far by GEM, including the South of Scotland, are coded in blue and override the above criteria. Thus, scores for the South of Scotland region coded in red, amber or green are all below the comparator average; scores falling within the red, amber, green criteria but above the comparator average are coded in blue. This is for presentation purposes only, to put the scores into perspective visually; the respective scores for the various items and pillars are reported in the figures and tables. Tables also report the wording of each item comprising a pillar. All tables are in Appendix 1.

The eleven other global regions/ city-regions included in the comparator average are Catalonia, Madrid, Cairo, Tel Aviv, Abu Dhabi, Sao Paulo, Bratislava, Riyadh, Alberta, Nova Scotia and Montreal. Findings from the Canadian regions, especially Nova Scotia that arguably shares a lot of characteristics with the South of Scotland area, are discussed in section 5.2.

As Figure 5.1 shows, the overall score for the Entrepreneurial Ecosystem Index for the South of Scotland area is 4.94 out of ten, which is below the 12 region comparator average of 6.09. This can thus be interpreted as a relatively weak score, with systemic conditions the weaker of the two core sets of conditions. In seven out of the ten pillars, South of Scotland scores lowest. In particular, there are notable weaknesses in formal institutions, support services and intermediaries, leadership and financing pillars. Rather surprisingly, despite the region being mostly rural, the demand pillar returned the highest score. This suggests that access to buyers of new goods and services is not a major concern for firms within the South of Scotland region. More detailed analysis of the component scores for each pillar is described below in order of the relative strength of the pillars as shown in Figure 5.1.

Figure 5.1: Pillars of the Entrepreneurial Ecosystem of the South of Scotland



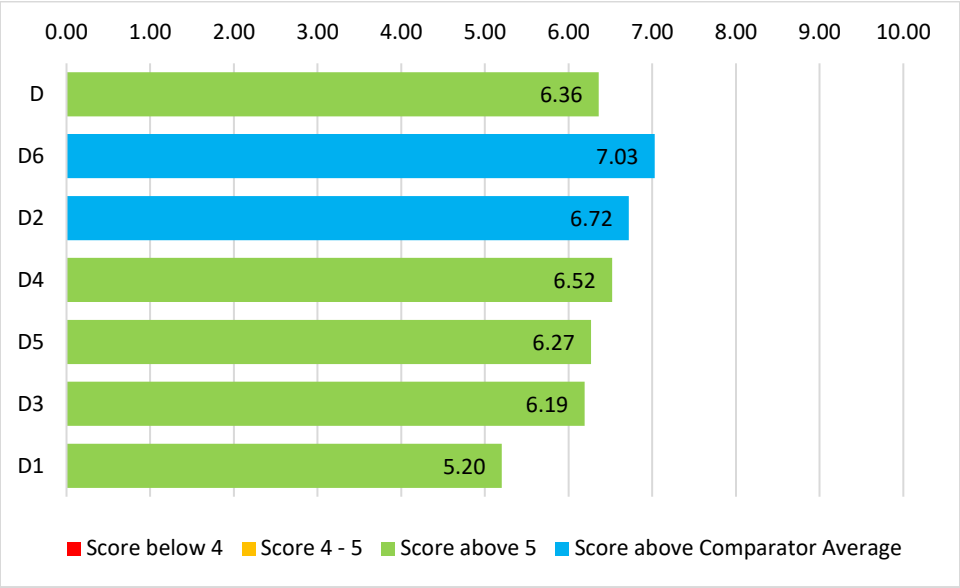
5.1.1 Demand

The demand pillar comprises six variables that detail the state of market dynamics, evaluating the size and growth of the regional market as well as access to external markets. The overall pillar average, and component average scores, are shown in Figure 5.2 and Table 5.1.

With a score of 6.36, demand is the strongest pillar of the entrepreneurial ecosystem of the South of Scotland, at 95% of the international comparator average. The component with the highest score (of 7.03 points) indicates that access to markets outside the region is perceived to be relatively easy. This points to unique advantages the South of Scotland has a border region with good connectivity to the rest of the wider UK.

This is crucial as the local market, while loyal, is perceived as small and without many opportunities. The weakest component (with a score of 5.20) suggests that relatively few respondents felt that there are good opportunities for starting a business in the South of Scotland. Further, that most new and growing firms can sell their goods and services locally received a modest score of 6.19, with respondents also moderately agreeing that the first customers of many new firms are located in the South of Scotland. Overall, it would appear that while local demand is fair and loyal to local firms, opportunities for new firms and for growth lie mainly outwith the region.

Figure 5.2: The state of demand and demand components in the South of Scotland



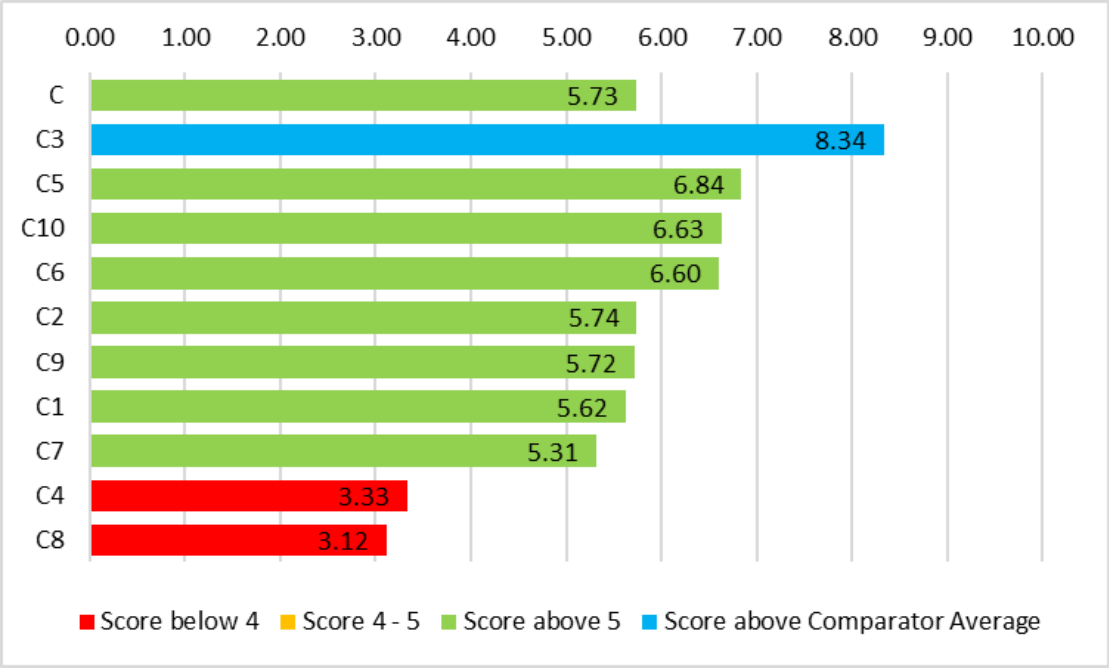
For item descriptions, see table 5.1.

5.1.2 Culture

Comprised of ten component variables, the culture pillar captures the average state of entrepreneurial culture in the South of Scotland. It encapsulates factors such as risk aversion tendencies, how entrepreneurship is received by individuals, incumbent players in the market and society at large, and the prevalence of a modern entrepreneurial ambience in the region. Average scores are presented in Figure 5.3 and Table 5.2.

The overall score for culture in the South of Scotland was 5.73, which is 87% of the comparator average, and this pillar ranks second overall for the region. Most components of this pillar scored close to the international comparator average, and overall the culture of the South of Scotland appears to be conducive to entrepreneurship. People in the South of Scotland hold the practice of entrepreneurship in relatively high regard and tend to support those undertaking it including nascent entrepreneurs trying to set up a business, owner-managers of new businesses (under 3.5 years) and established businesses (over 3.5 years old).

Figure 5.3: Entrepreneurial Culture in the South of Scotland



For item descriptions, see table 5.2.

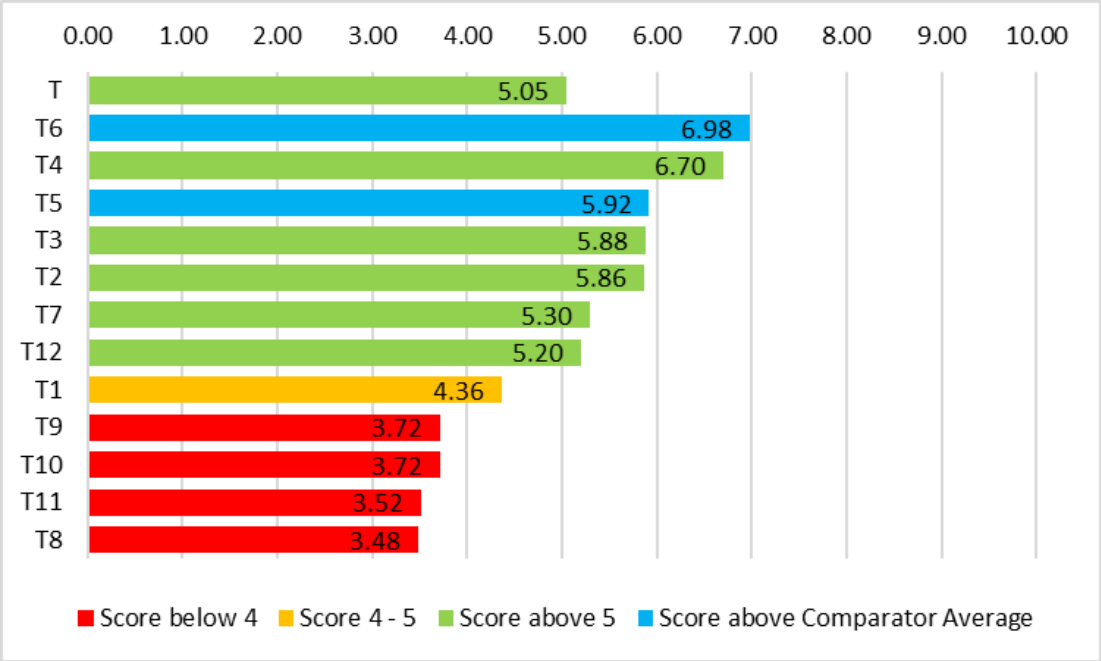
Related to the earlier discussed concern pertaining to opportunities, however, it appears that there are limited opportunities for new entrants in the region and incumbent businesses are not as supportive. Despite the generally positive attitudes to entrepreneurial people, in reality, relatively few people in the South of Scotland actually contemplate starting a business and the prevalence of events for entrepreneurs events is perceived as low. This suggests that for the underlying entrepreneurial promise to be brought to bear, there is a need for an operational support infrastructure to be strengthened to help potential entrepreneurs see a pathway to the successful application and realisation of their aptitudes.

5.1.3 Talent

The Talent pillar comprises 12 components summarising the average quality, availability and costs of employees to meet the current and future personnel needs of businesses in the South of Scotland. The pillar also captures the role higher education institutions are perceived to play in the region regarding the supply of talent. Average scores are presented in Figure 5.4 and Table 5.3.

Talent is a relatively strong area for the South of Scotland in relation to its other pillars, as it ranks third out of the ten ecosystem pillars. However, its score of 5.05 is relatively modest compared to other regions at 80% of the comparator average. Looking at differences in the pillar's components suggests that while some aspects of talent in the South of Scotland are internationally competitive, others are significantly weaker and therefore of concern.

Figure 5.4: Talent for enterprises in the South of Scotland



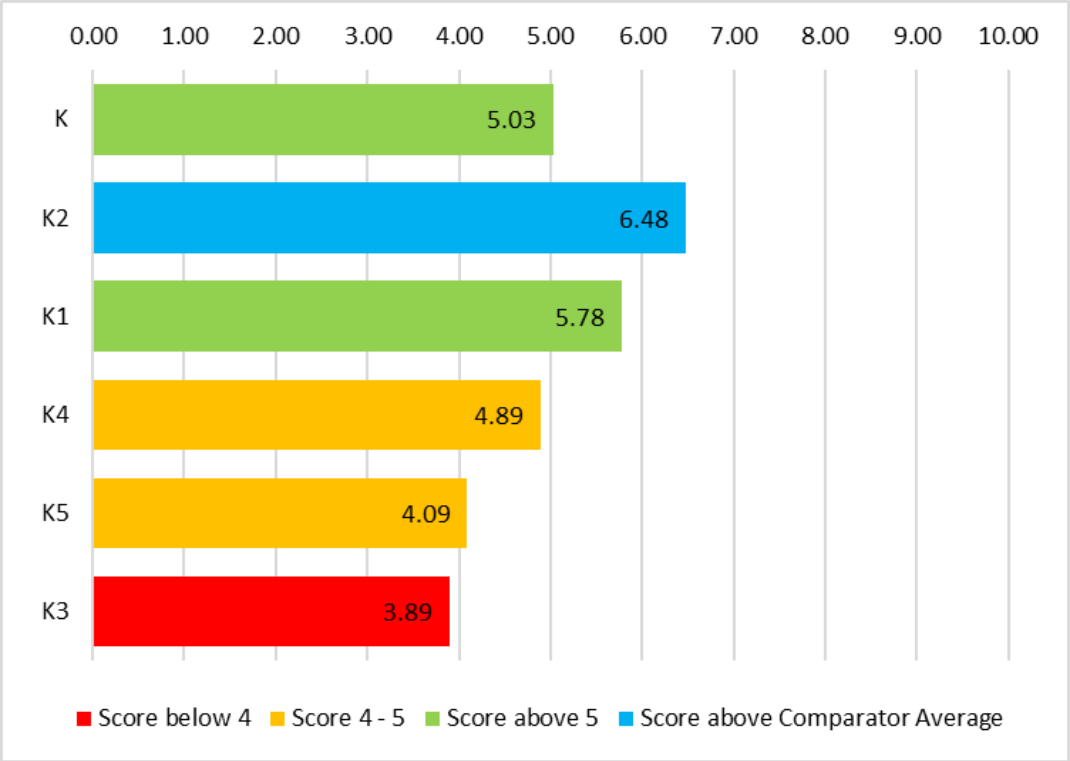
For item descriptions, see table 5.3.

The data suggests that the South of Scotland area is perceived to have sufficient supplies of an affordable and suitably skilled workforce. However, this view is held more strongly by nascent entrepreneurs than new and established owner-managers who have likely had to contend with this matter in practice. More notable concerns are: (1) the supply of entrepreneurs with the knowledge, skills and experience required to start a new business, and (2) the ability of the region to attract and retain a sufficient supply of highly skilled workers, especially young people, that new and growing firms need. A particular area of weakness here is in the role higher education institutions play in ensuring the quantity and quality of both entrepreneurs and the workforce they need for their businesses.

5.1.4 Knowledge

The Knowledge pillar comprises five components that summarise the availability and access to knowledge and technologies, as well as aspects of knowledge spill-overs within the region beyond knowledge transfer from higher education through supply of talent. As Figure 5.6 and Table 5.5 show, the knowledge pillar is relatively modest with a score of 5.03 (81% of the comparator average).

Figure 5.6: Entrepreneurial Knowledge in the South of Scotland



For item descriptions, see table 5.4.

Reflecting a sense of relative isolation of the region, the stronger components of the knowledge pillar suggest that nascent entrepreneurs and especially new and established owner-managers tend to have built their businesses on the results of something they learnt from people or organisations in the South of Scotland. However, knowledge flows between entrepreneurs in the region is an area of relative weakness. Further, knowledge spillovers (i.e. valuable information flows) from larger businesses are relatively low, and universities and public research institutions play a limited role as sources of knowledge for new and growing firms in the South of Scotland. Overall, this analysis suggests that the knowledge pillar is a weaker area for the South of Scotland than its ranking among the pillars would suggest. Close association of the issues in this pillar with the talent and networking pillars suggest that strengthening those will at least provide pathways for harnessing knowledge resources better within the South of Scotland region.

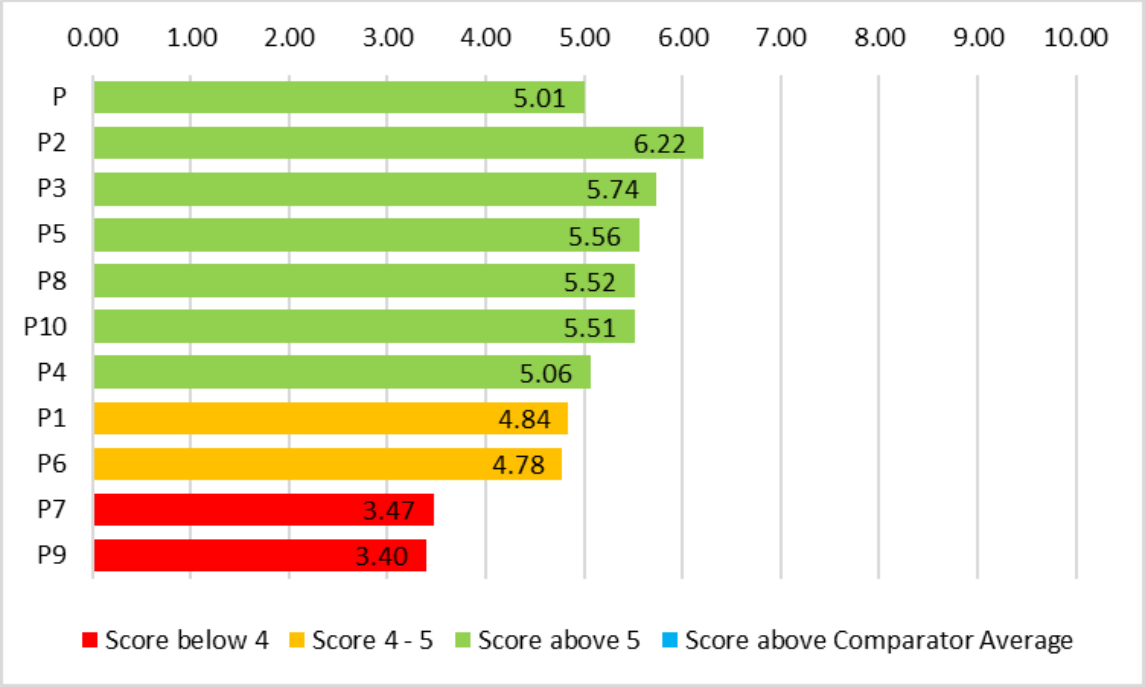
Further analysis, comparing scores of expert respondents before and after the first COVID-19 lockdown using Student's t-tests, suggested that items K3, K4 and K5 in this pillar, but not any items in other pillars, attracted significantly lower scores after lockdown: around 60% of the pre-lockdown average scores. Thus the overall score for this pillar might be slightly lower than it would have been if all experts had been surveyed pre-lockdown. Also, in keeping with the theme of new knowledge coming from within the region, we estimate that item K4 (New knowledge developed by large businesses in the South of Scotland is an important source of ideas for new and growing firms within the South of Scotland) might even have been slightly above the comparator average. It is not

surprising that scores for the knowledge pillar were different post COVID-19, since the lockdown prevented socialisation.

5.1.5 Physical infrastructure

The physical infrastructure pillar encapsulates the state, accessibility and costs of transport, telecommunications and office or production space required for the establishment and growth of new businesses. The pillar returned a modest score of 5.01 (75% of the comparator average). Detailed component scores are presented in Figure 5.7 and Table 5.5. Here, it can be seen that most components were scored in the middle of the range with minor differences between nascent entrepreneurs and new and established owner-managers. More universally, however, there appears to be serious concerns with the state of general infrastructure and broadband speeds.

Figure 5.7: Physical infrastructure for entrepreneurship in the South of Scotland

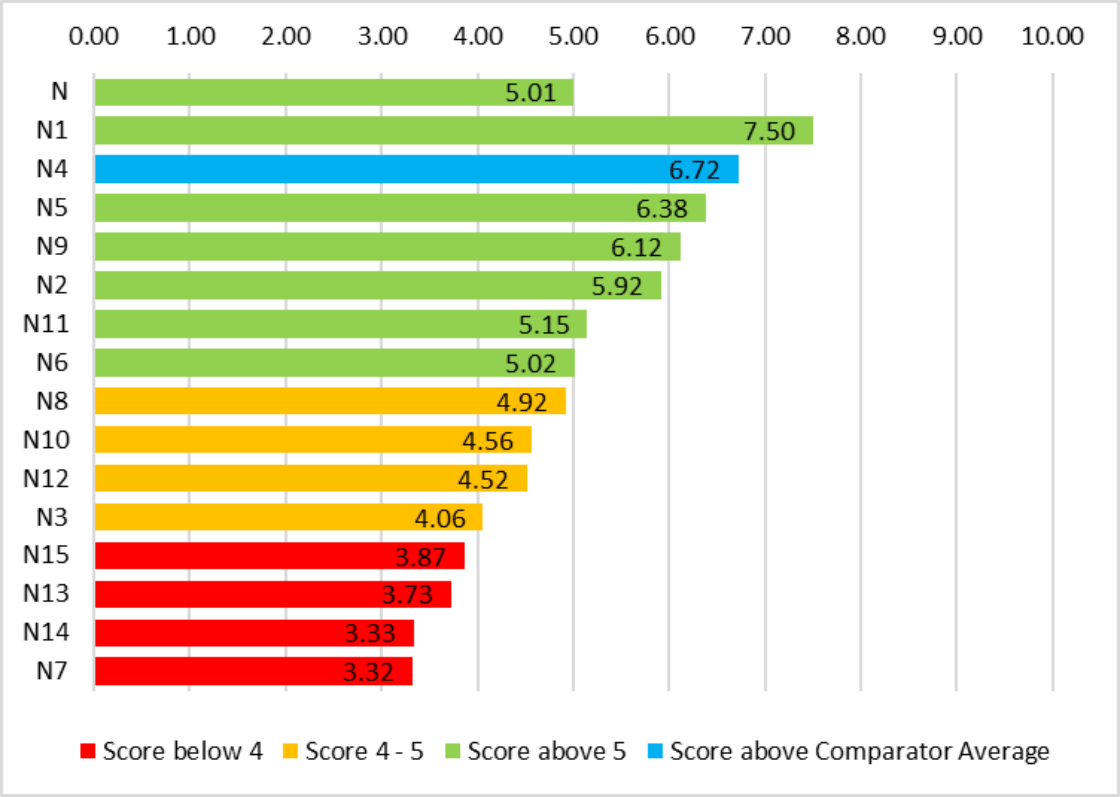


For item descriptions, see table 5.5.

5.1.6 Networking

The score for the Networking pillar draws on 15 components to summarise the average state of the networking and communication resources and activity within the South of Scotland ecosystem. As Figure 5.6 and Table 5.6 show, the average score for the pillar is a modest 5.01 (77% of the comparator average) with component scores ranging from a high of 7.5 to a low of 3.3.

Figure 5.5: Entrepreneurial networking in the South of Scotland



For item descriptions, see table 5.6.

Findings suggest that entrepreneurial networking in the South of Scotland is dominated by nascent entrepreneurs still in the process of starting a new business (less than three months old). Attendance of local networking events by nascent entrepreneurs in the South of Scotland is at 6.72 higher than the international comparator average. Unsurprisingly, then, these nascent entrepreneurs find it easy to get in touch with other owner-managers of young businesses personally (7.5), and can more easily find the right people through their network for help and advice (5.92). Consistently, component scores by owner-managers of new or established businesses, or by the population in general or estimates by experts, are lower than those of nascent entrepreneurs. This suggests that there is less engagement in networking once a business is up and running and low awareness across the general population of the networks that nascent entrepreneurs are tapping in to. Networking seems to be less prevalent among established owner-managers leading to greater isolation, while opportunities for peer learning, support, collaboration, organisation and advocacy are lost.

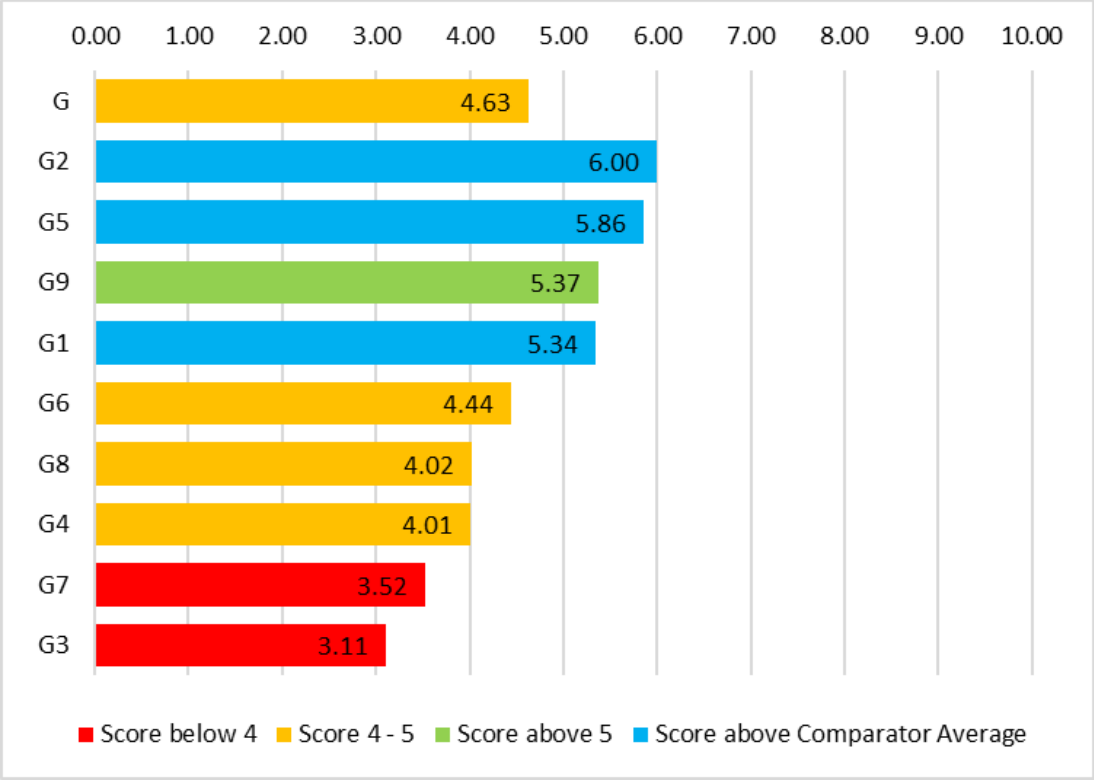
Networking is a key ecosystem-wide concern. Expert perceptions that public organizations run start-up events with sufficient frequency to support new and growing businesses effectively returned a relatively low score of 4.56. Worse, the item “different local organizations often jointly organize events to foster regional entrepreneurship activity” scored 3.33 and “start-up community networks are well known and accessible” scored 3.73. This low perceived networking activity, co-ordination

and visibility could be responsible for discouraging participation by owner-managers, meaning people know few other entrepreneurs. Further, low visibility of examples of well-connected start-ups with active investors, advisors, etc., means that the role modelling that plays a positive role in successful ecosystems is lost. The role both private and public organisations score play in running events to support new and growing businesses was not viewed very favourably. This suggests that there is much scope for public and private organisations to improve in their own areas and further work to strengthen, integrate and co-ordinate the various other relatively weak areas that entrepreneurial networking in the South of Scotland appears to struggle with. What is encouraging is that nascent entrepreneurs are getting on and networking and benefiting from it; more visibility of this activity across the population could well change perceptions for the better.

5.1.7 Formal institutions

The Formal Institutions' pillar summarises the state of support for new business creation from political or governmental institutions as well as rules and regulations affecting start-ups. This pillar includes nine components as detailed in Figure 5.8 and Table 5.7.

Figure 5.6: Formal institutions and entrepreneurship in the South of Scotland



For item descriptions, see table 5.7.

With an overall score of 4.63, formal institutions is an area of weakness for the entrepreneurial ecosystem of the South of Scotland, but at 90% of the comparator average overall, the South of Scotland score for this pillar is not very much out of line internationally. With scores above the international comparator average, both nascent entrepreneurs and owner-managers of new or established businesses in the South of Scotland do not see bureaucracy and regulations associated with founding a business as a major problem. Support for entrepreneurship by industry bodies was also viewed relatively favourably. This suggests that there are areas that the region and Scotland as a whole has an international competitive advantage in. There was some agreement with the statement that government programs aimed at supporting new and growing firms are significantly improving the chances of survival and success of those firms, with a score of 5.37.

Despite the growth of enterprise education in recent years, most experts do not perceive that support for new and growing firms is a high priority for educational institutions (4.44). There are concerns, further, that people cannot always find what they need from government support programmes, that support for new and growing firms is not a high priority for local governments, that compliance demands are hard to cope with, and that government policies do not consistently consider new and growing firms. Overall, while regulations in the process of founding a business are seemingly less taxing, formal institutions, including education institutions, still need to do more to understand the needs of new and growing firms in areas such as the South of Scotland and to generate better awareness and ease of access of the support that people need.

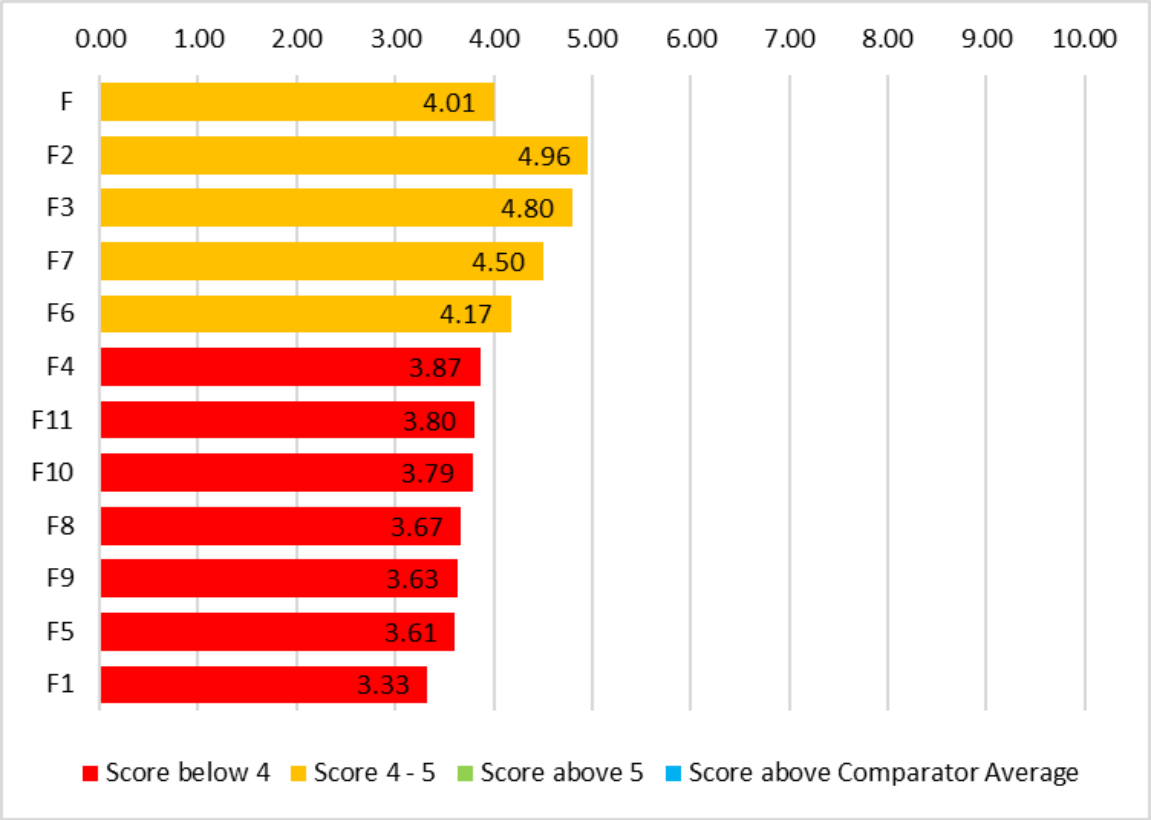
5.1.8 Financing

The finance pillar captures the availability of, and access to, various forms of capital for nascent entrepreneurs and owner-managers. The pillar comprises 11 components as shown in Figure 5.9 and Table 5.8. With an average score of 4.01 and 74% of the comparator average, enterprise finance can be seen to be an area that requires significant strengthening in the South of Scotland.

The views of entrepreneurs on the issue of adequacy of supplies of enterprise funding in the South of Scotland were mixed. From the Adult Population Survey, nascent entrepreneurs returned a score of 4.96 on this question, with owner-managers of firms new businesses (3 – 42 months) and more established firms (42 months +) scoring it slightly lower at 4.8 with the benefit of experience.

Respondents to the expert survey, who included some entrepreneurs as well as other entrepreneurial ecosystem actors such as investors and policy and support services officials from the region, returned even lower scores on average to specific forms of funding. Sufficient access to business angels in the South of Scotland achieved a score of 4.5, the highest amongst the forms of finance explored. Echoing the issue of entrepreneurs in the South of Scotland being able to find the government support they need discussed in the formal institutions pillar, access to government funding is highlighted as an area of relative weakness in the region with a score of 4.17.

Figure 5.7: Enterprise Finance in the South of Scotland



For item descriptions, see table 5.8.

In general, experts perceived gaps in the provision of formal institutional enterprise finance (bank debt, venture capital, private equity, etc.) in the South of Scotland, and this affects all stages of entrepreneurship from pre-start, to start-ups and firms seeking funding for business growth.

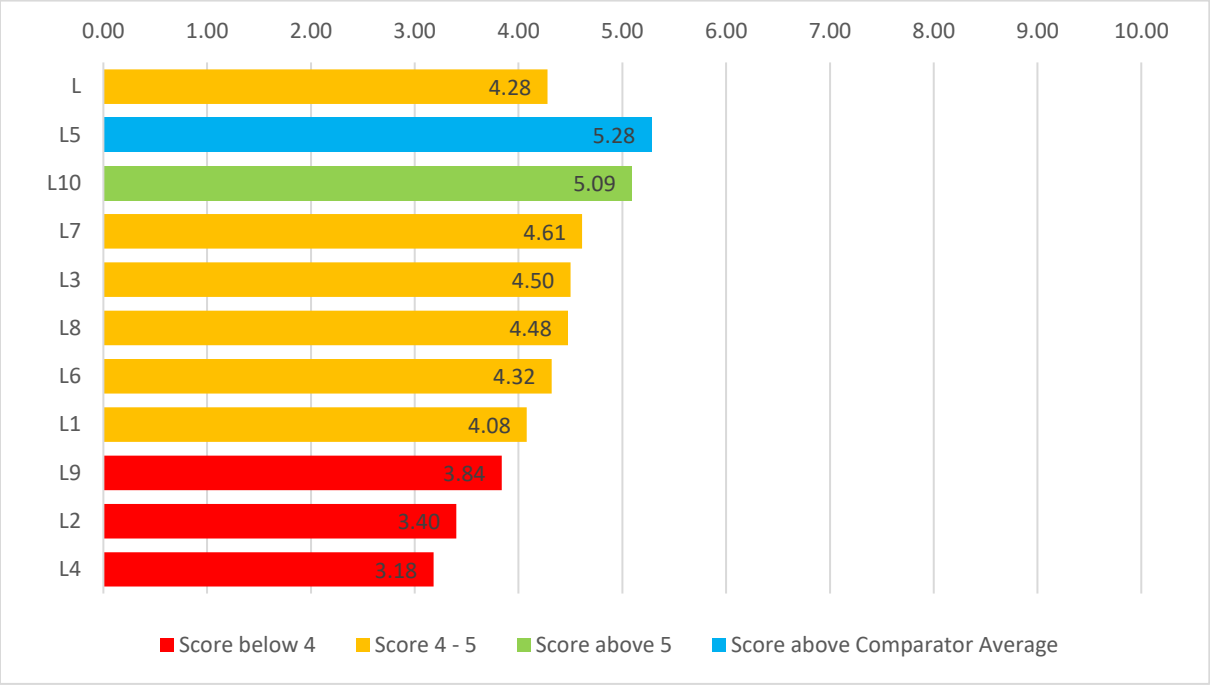
5.1.9 Leadership

The leadership pillar evaluates the extent to which there are important and influential individuals or teams of entrepreneurs that help shape the ecosystem and the ways in which they do that, including, amongst others, mentoring and role-modelling. Results for the ten components that comprise the Leadership pillar are presented in Figure 5.10 and Table 5.9.

Ecosystem leadership is an area that is relatively under-developed in the South of Scotland with an average score of 4.28 at 76% of the comparator average. However, echoing earlier findings in the culture pillar, it does appear that even in the absence of a supportive infrastructure, new and established entrepreneurs in the region do claim to offer advice and mentoring to others to an extent that is higher than the international comparator average. If true, this is a significant positive that

could be better harnessed, though it is worth noting that the lowest score, at 3.18, was for the frequency of advice received by these individuals from established business founders.

Figure 5.8: Entrepreneurial Ecosystem Leadership in the South of Scotland



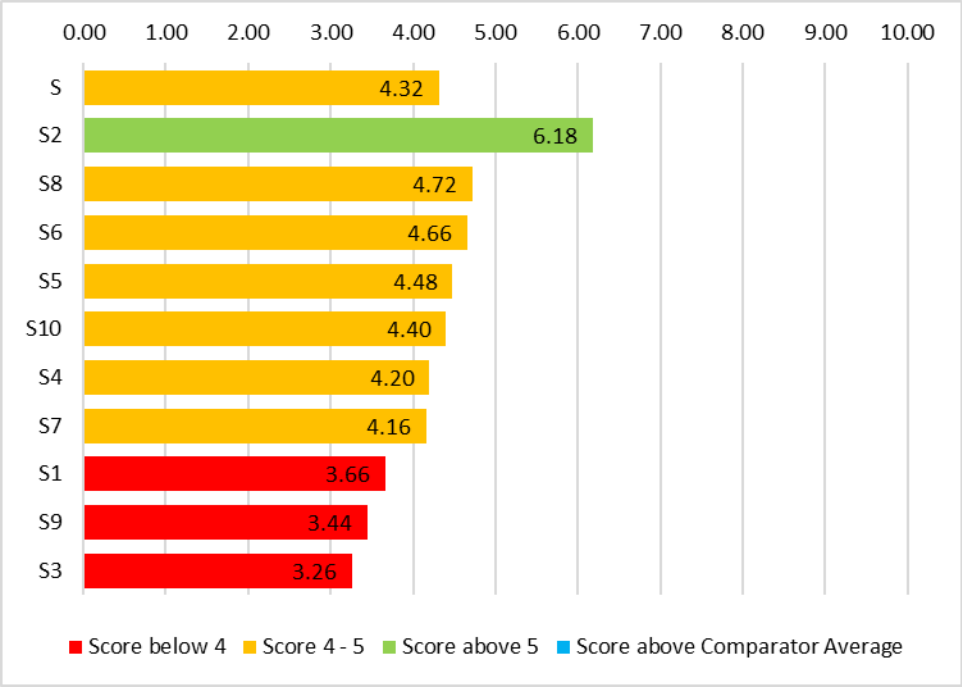
For item descriptions, see table 5.9.

While other regions sometimes struggle with lack of dynamism and barriers associated with dominant inert institutions, the South of Scotland is not greatly inhibited by these. In contrast, it is the relative absence of a strong entrepreneurial group or individual with a high economic impact and visibility in the entrepreneurial community that appears to be a problem. Further, there is little cooperation and co-ordination of enterprise support in the region. Clearly, a gap in ecosystem leadership is apparent in this data.

5.1.10 Support Services and Intermediaries

The support services pillar details the availability of, and access to, commercial and professional services along with public infrastructure and other facilities entrepreneurs need. This pillar received the lowest average score of 4.32 (77% of the average score). Component scores are presented in Figure 5.11 and Table 5.10.

Figure 5.9: Entrepreneurial Support Services and Intermediaries in the South of Scotland



For item descriptions, see table 5.10.

The strongest component within this pillar is that surveyed nascent entrepreneurs in the region were strongly supported by a program aimed at business start-ups, with a score of 6.18. Most nascent entrepreneurs are very proactive in seeking such support and our international comparator average is 7.08 for this component. This suggests that it is still not an area of relative strength for the South of Scotland. As previously discussed, accessing and navigating government systems for funding and other support are areas that require significant strengthening in the South of Scotland.

Indeed, a key gap in the ecosystem appears to be the absence of anchor agencies that serve as a first point of contact for entrepreneurs, or a “one stop shop”, that can provide customised support and through effective signposting, facilitate access to suitable national and international support programmes. The largest gap appears to be in developing the skills entrepreneurs in the South of Scotland require to build successful businesses. Findings suggest that there are inadequate workshops and other training opportunities to help entrepreneurs with accounting, tax and legal issues, business planning, etc. Further, it appears that available support programmes for new and growing businesses are not sufficiently tailored to the needs of entrepreneurs in the South of Scotland.

Besides government support programmes, it would appear that the industry ecosystem itself requires strengthening to help increase of the quantity of high-quality subcontractors, suppliers, and consultants that serve to support new and growing firms at costs that new and growing firms in the region can afford.

5.2 The Entrepreneurial Ecosystem of the South of Scotland relative to comparator regions

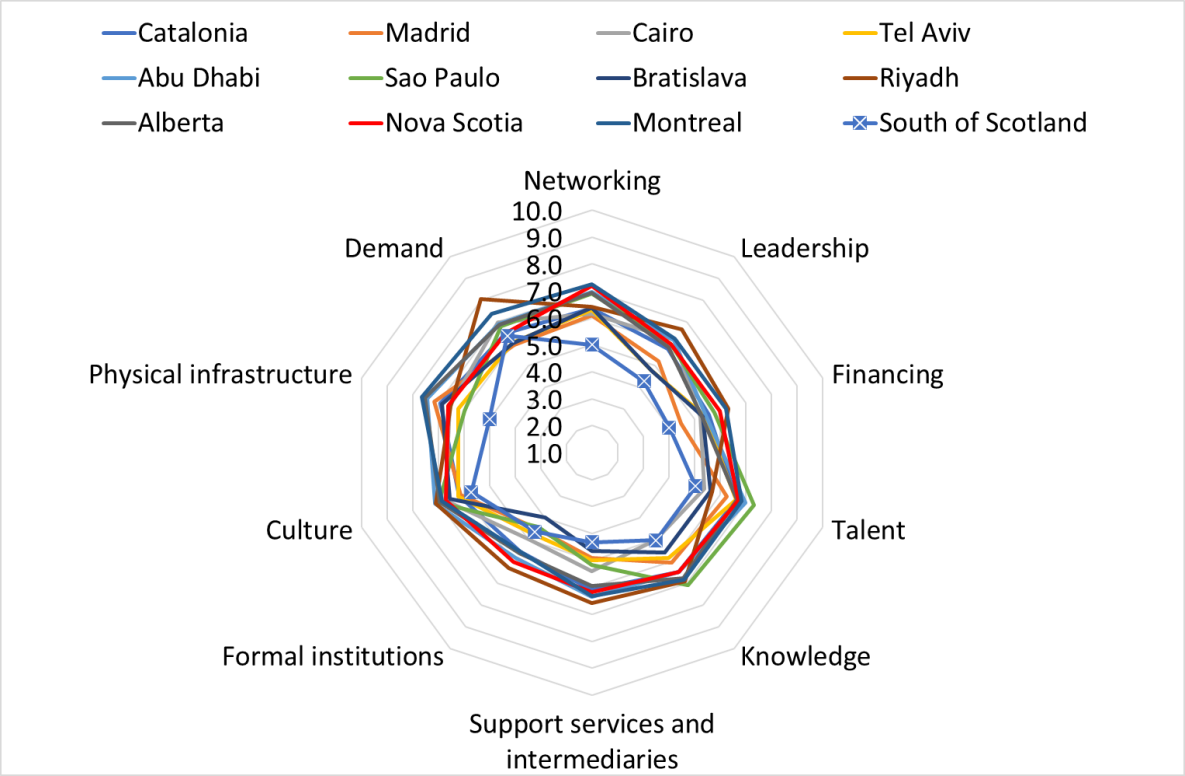
While there are major contextual differences that would make direct comparisons of various regions questionable, still some insights can be drawn from such comparisons that could advise policy action. In addition to the South of Scotland, researchers in the Global Entrepreneurship Monitor consortium recently conducted ecosystem analysis in eleven other national regions or city-regions including: Catalonia, Madrid, Cairo, Tel Aviv, Abu Dhabi, Sao Paulo, Bratislava, Riyadh, Alberta, Nova Scotia and Montreal.

Figure 5.12 presents the overall scores for the 10 entrepreneurial ecosystem pillars in these regions. Although the diversity in how the various regions performed is immediately noticeable, it is also clear that on average, the South of Scotland regions appears to lag behind all the others in most areas, only doing better than Madrid, Bratislava and Sao Paolo in the formal institutions pillar and Madrid and Bratislava in the demand pillar. Of the seven pillars in which the South of Scotland ranks 12th out of 12, it is furthest from the next lowest ranking score in Physical infrastructure and Networking. In absolute terms, it is rated lowest in Leadership, Finance and Support services and intermediaries with scores below 4.5.

While the more detailed analysis above did point to some components where the South of Scotland region was performing better than the comparator average, it is clear that on the whole, the region's ecosystem is significantly underdeveloped by international standards.

It is instructive that Riyadh and Abu Dhabi appear to do exceptionally well in a number of the ecosystem pillars. In both of these contexts, there have recently been concerted efforts by governments to diversify their economies away from oil and gas and cultivate a more dynamic entrepreneurial economy. This shows that there is much scope for policy to shape entrepreneurial ecosystems and in turn transform the structure of regional and national economies.

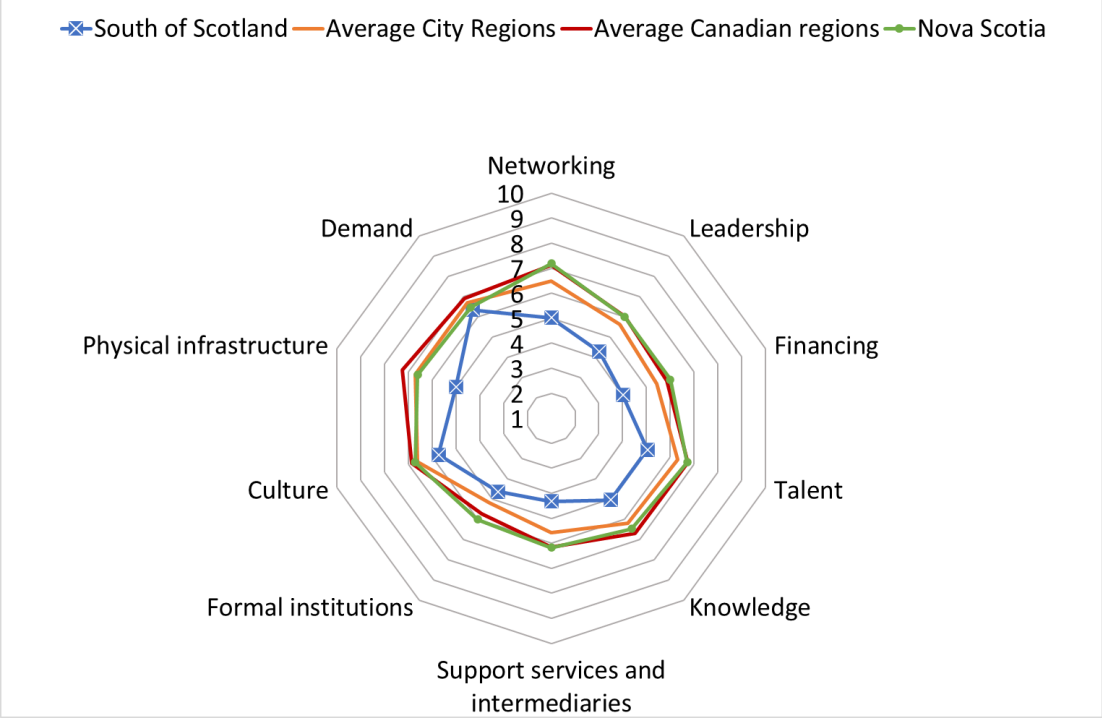
Figure 5.10: Comparison of ecosystem scores across global regions



Of these clearly very diverse regions, Nova Scotia is perhaps one that arguably shares many characteristics with the South of Scotland area. Emigration and family ties between the South of Scotland and Nova Scotia go back at least to the 1770s. Yet, as Figure 5.13 shows, scores for the South of Scotland are noticeably lower than for Nova Scotia, the exception being Demand. A detailed entrepreneurial ecosystem analysis, published by the Nova Scotia GEM team, is available at https://www.gemconsortium.org/file/open?fileId=50677.

In marked contrast to the results for the South of Scotland, the authors of the Nova Scotia entrepreneurial ecosystem report noted that "The networking pillar had the highest overall score of 7.18. The component scores point to a vibrant community of entrepreneurs helping each other and providing mentorship and support within their communities." There are probably lessons to be learned for the South of Scotland on how to create such a vibrant entrepreneurial community in a relatively remote region. On the other hand, there were some similarities in pillar rankings; leadership, financing, support services and intermediaries and formal institutions were the lowest scoring pillars in both the South of Scotland and Nova Scotia.

Figure 5.11: Comparison of ecosystem scores of the South of Scotland with Nova Scotia



5.3 Correlations between the various pillars

As this ecosystem analysis has demonstrated, the variables used to evaluate the various component and pillars that make up the entrepreneurial ecosystem are probably not independent of each other. A policy intervention in one pillar might affect other pillars, or might not affect the target pillar at all because it is closely linked to other pillars. A correlation analysis, even in our very limited sample of 12 regions, gives an indication of how closely associated these pillars might be to each other[8].

As Table 5.11 in Appendix 1 shows, multiple significant correlations are observed between the various pillars. In summary:

- The strongest correlation is between Formal Institutions and Support services and intermediaries. This is not surprising because Government can be a major player in Support services.
- There are quite strong correlations between Leadership and 1) Support services and intermediaries, 2) Culture and 3) Demand, while Networking is significantly correlated with the other variables in the ecosystem.
- Talent is associated with Networking but not with Leadership, while Formal institutions and Demand are associated with Leadership but not with Networking.
- This suggests that there may be two underlying mechanisms that, separately, build strong ecosystems. One is a bottom up mechanism where strongly networked populations of entrepreneurial individuals pull in further resources such as finance and human capital. Another is a top down mechanism where the ecosystem is clearly led and there is good governance. Both mechanisms may need to work well in order to create a balanced ecosystem.
- This bottom up/top down duality casts light on what can appear from a policy perspective to be a somewhat magical quality of successful entrepreneurial ecosystems. Many aspects of the ecosystem are not affected by conventional policy: policymakers cannot pull an economic lever to remove a market failure to create an entrepreneurial ecosystem. They may have to work at two levels: visibly “laying the table” with clarity in leadership, governance, culture and demand, and then more subtly, perhaps via boosting support services and intermediaries, to help boost a thriving population of interacting entrepreneurs that will then attract resources.

[8] Significant associations between two pillars could be for several reasons, including: (1) the correlated variables have a causal relationship in either or both directions, (2) a third unidentified variable drives both the correlated variables, (3) the correlated variables capture the same underlying phenomenon and are therefore proxies of each other, or (4) the correlation is a mere coincidence.

6 Conclusions and recommendations

This study sought to develop a detailed understanding of entrepreneurship and the wider ecosystem in the South of Scotland region. The South of Scotland has a very unique entrepreneurial profile characterised by tensions and opportunities emanating from the fact that it is a relatively remote rural and border region, with until relatively recently, little political or administrative leverage to access resources. Three main conclusions can be drawn from this research.

Firstly, entrepreneurial attitudes, intensions and activity in the South of Scotland are associated with its characteristics as a rural economy, but it is clear that rates are lower in the South of Scotland than in benchmark regions. There are some bright spots: older people and women make greater contributions to entrepreneurial activity than in Scotland and the UK. Further, there is a greater prevalence of long established businesses in the region. However, growth intentions are relatively low overall compared to benchmark regions and despite greater female engagement in nascent entrepreneurial activity, this does not proportionately translate to higher representation in the rate of ownership of established businesses in the region. Further, participation among young males in entrepreneurship seems relatively low, despite positive attitudes towards entrepreneurship as a career. There are also relatively fewer high growth firms in the area and business survival rates are slightly lower than those observed in similar rural areas.

Secondly, and more positively, findings indicate that entrepreneurs and ecosystem experts recognise that besides a modest but loyal local customer base, there are large, easily accessible markets outwith the South of Scotland region. Indeed, the region boasts proximity to both the three main regions in the North of England (North West, North East and Yorkshire and Humber) with a combined population of around 15 Million to the South, as well as the rest of Scotland, especially the Central Belt with its over 4 Million people, to the North.

Thirdly, the South of Scotland appears to have a significantly underdeveloped entrepreneurial ecosystem. The South of Scotland has not leveraged its rich entrepreneurial history and resources to take full advantage of the opportunities its unique position affords. Our research portrays a broad sentiment within the South of Scotland, among the population at large and ecosystem experts, of historical neglect by local and national governments as well as other formal institutions like universities, and a lack of local leadership and a coordinated support infrastructure. This is reflected in a relatively poor performance in key entrepreneurial activity and ecosystem measures compared to a diverse set of comparator regions nationally and internationally, which all suggest that the South of Scotland is operating at around three-quarters of its natural entrepreneurial activity rate.

There is, therefore, a unique opportunity for South of Scotland Enterprise (SOSE) to animate the region's entrepreneurial ecosystem. We make the following recommendations, organised around three core but interlinked themes: connectivity, infrastructure, and diversity.

6.1 Enhancing connectivity

6.1.1 Networks

One of the weakest pillars revealed by the ecosystem analysis is Networks. While there may be strong personal business and community level connections at a local level, and these will be stronger for some groups than others, our data suggests that these have not translated into regional level business/ professional/ industry connections of the type that can lead to new opportunities and significant business growth. SOSE should explore a wide range of ways to broaden business networks of entrepreneurs (not just start-up entrepreneurs) within the South of Scotland and link up and coordinate local networks, as well as link the regional network to networks in other regions that have greater concentrations of entrepreneurial resources.

There may be a particular need to target female entrepreneurs, as these contribute disproportionately to the business owner base yet may be excluded from certain business networks. Both intra-industry (cluster) networks and cross-industry (ecosystem) networks need to be enhanced. Entrepreneurs and potential entrepreneurs need to be at the heart of these networks, with resource providers acting as sponsors and enablers, but not crowding out the core entrepreneurial actors at the heart of the ecosystem.

Thanks to Covid, we all realise that platforms like zoom can connect people without the need to travel. The South of Scotland's peripheral, remote and rural location is less of a barrier now than it was pre-Covid. This should be capitalised on to strengthen the South of Scotland's networks within the region and with other regions.

Our data shows that Networking correlates with other pillars of the entrepreneurial ecosystem, including Leadership, Finance, Talent, Knowledge, Culture and Physical Infrastructure (including broadband). So developing these simultaneously will enrich the ecosystem greatly, as we show below.

6.1.2 Leadership

While our data suggests a historical lack of leadership in the South of Scotland, there are now significant opportunities to turn this around. The creation of SOSE clearly fills a void at the regional level. But at the individual and enterprise level, there is untapped potential for mentoring, given the relatively high rate of established business owner-managers in the South of Scotland, many of whom have many years of experience in business, in Scotland and elsewhere. When we link this to the finding that young people in the South of Scotland seem less linked in to the entrepreneurial ecosystem than elsewhere, and young males appear to be less entrepreneurial than elsewhere, it seems logical that SOSE should capitalise on this resource.

In our ecosystem data, Leadership correlates with Networks, Finance, Support, Knowledge and Demand as well as Formal institutions and Culture. These pillars are interconnected. For example, mentors can become business angels, and introduce mentees to new sources of knowledge or human capital, and raise their horizons about what is possible, including markets beyond their current vision. There is however scope for an ecosystem leader such as SOSE to animate these pillars.

6.2 Infrastructure

6.2.1 Hard infrastructure

It is clear from our data that people in the South of Scotland have strong negative perceptions of the state of the hard infrastructure that links them together, both physically in terms of roads and virtually via broadband. This regional "plumbing" is not just important as an ecosystem service; it affects morale. It is even more important post-Covid, when talented, highly educated individuals, who may be from the South of Scotland originally, realise they can work from where they wish to live rather than close to where their place of employment is – provided the infrastructure to do so exists.

6.2.2 A coherent support infrastructure that is meaningful to regional actors

One issue that surfaced in the data was the lack of knowledge among ecosystem actors of support services that already exist. SOSE can fill this signposting role, but also take a helicopter view of local services across the region and enable gaps to be filled. These gaps may be geographical or demographic, or specific to certain stages in the entrepreneurial process (for example enabling female entrepreneurs to successfully establish their nascent businesses may be a particular gap). Many of these gaps can be filled by working in partnership with enlightened private sector resource providers.

6.3 Diversity

Entrepreneurship thrives on diversity: it sparks creativity, generates unique opportunities, and seems to generate better management decisions within organisations. The South of Scotland has a mixed story to tell here. On the one hand, females contribute more to entrepreneurship in the South of Scotland than in Scotland or the UK as a whole. However, this is mainly because of a dearth of young males engaging in entrepreneurial activity. Similarly, older individuals make a disproportionate contribution to entrepreneurship. But this is partly because of an older population profile. The South of Scotland has fewer, and less dynamic, graduates than Scotland as a whole. It has clearly suffered a brain drain and post Covid-19 there is an opportunity to tempt some of these back with a quality of life and family ties story. The South of Scotland has low levels of ethnic minority and immigrant individuals, even lower than Scotland as a whole, and this is a reflection of a less dynamic regional economy: dynamic economies attract immigrants, who contribute to diversity and dynamism.

Given the population decline in Dumfries and Galloway in particular, and new ways of working post Covid-19, there is an opportunity to turn this around by attracting back young professionals, and also consciously welcome diverse individuals. Young professionals who had to leave the region for work may be tempted back to work remotely, provided the hard infrastructure is adequate, and some will subsequently end up starting a business, because people tend to start businesses where they live.

7 Appendix 1: Tables

Table 2.1: Actual sample sizes (unweighted) for the South of Scotland and benchmark regions for the pooled 2003 to 2010 and 2011 to 2018

	2003 to 2010	2011 to 2018
South of Scotland	882	977
Highlands and Islands	1554	1527
Devon and Cornwall	3507	778
Cumbria and Northumberland	1377	481
East Wales	7036	5605
Shropshire and Herefordshire	416	307
Scotland	13992	15836
UK	171379	76976

Source: GEM UK APS 2003-2018

Table 2.2. Distribution by age and gender in the 2018 South of Scotland Adult Population Survey sample with the mid-year population distribution estimate for 2017.

Sample	Number			Percentage		
	Female	Male	Total	Female	Male	Total
18-24yrs	28	14	42	3%	1%	4%
25-34yrs	50	47	97	5%	5%	10%
35-44yrs	84	74	158	8%	7%	16%
45-54yrs	118	81	199	12%	8%	20%
55-65yrs	133	108	241	13%	11%	24%
65-80yrs	131	133	264	13%	13%	26%
Total	544	457	1001	54%	46%	100%
Population	Number			Percentage		
	Female	Male	Total	Female	Male	Total
18-24yrs	9030	9578	18608	4%	5%	9%
25-34yrs	12970	12222	25192	6%	6%	12%
35-44yrs	14084	12676	26760	7%	6%	13%
45-54yrs	21060	19569	40629	10%	10%	20%
55-65yrs	20434	19530	39964	10%	10%	20%
65-80yrs	26273	24473	50746	13%	12%	25%
Total	103851	98048	201899	51%	49%	100%

Population data source: ONS mid-year population estimates for 2017 by local authority.

Table 2.3: GEM-ESI Main Indicators

Indicator	Description	Methodology
N	Network pillar	Combination of 15 APS & RES variables
L	Leadership pillar	Combination of 10 APS & RES variables
F	Financing pillar	Combination of 11 APS & RES variables
T	Talent pillar	Combination of 12 APS & RES variables
K	Knowledge pillar	Combination of 5 APS & RES variables
S	Support services pillar	Combination of 10 APS & RES variables
G	Formal institutions pillar	Combination of 9 APS & RES variables
C	Culture pillar	Combination of 10 APS & RES variables
P	Physical infrastructure pillar	Combination of 10 APS & RES variables
D	Demand pillar	Combination of 6 APS & RES variables
ESI_SC	Index on systemic conditions	Calculated over the 10 pillars
ESI_FC	Index on framework conditions	Calculated over the 10 pillars
ESI	Index of the ES quality	Composite index

Table 3.2.1.1 Do you know someone personally who started a business in the past 2 years? Percentage answering yes (versus no or don't know) in South of Scotland, Scotland and UK for 2018 by age group.

Age group	18 to 29	30 to 64	65 to 80	Total
South of Scotland	28.8%	37.3%	25.6%	33.2%
Scotland	38.0%	30.8%	15.8%	29.4%
United Kingdom	37.2%	31.5%	17.5%	30.2%

Table 3.2.1.2 In the next six months, will there be good opportunities for starting a business in the area where you live? Percentage answering yes (versus no or don't know) in South of Scotland, Scotland and UK for 2018 by age group.

Age group	18 to 29	30 to 64	65 to 80	Total
South of Scotland	24.9%	31.8%	29.6%	30.3%
Scotland	36.8%	31.3%	25.7%	31.3%
United Kingdom	38.1%	32.7%	28.6%	33.2%

Table 3.2.1.3 Do you have the knowledge, skill and experience required to start a new business? Percentage answering yes (versus no or don't know) in South of Scotland, Scotland and UK for 2018 by age group.

Age group	18 to 29	30 to 64	65 to 80	Total
South of Scotland	33.3%	46.2%	43.8%	43.8%
Scotland	35.9%	43.4%	36.8%	40.7%
United Kingdom	39.2%	48.2%	39.7%	44.8%

Table 3.2.1.4 Would fear of failure would prevent you from starting a business? Percentage answering yes (versus no or don't know) in South of Scotland, Scotland and UK for 2018 by age group.

Age group	18 to 29	30 to 64	65 to 80	Total
South of Scotland	43.4%	40.1%	27.0%	37.3%
Scotland	40.6%	39.2%	26.5%	37.1%
United Kingdom	44.1%	39.0%	22.9%	37.2%

Table 3.2.1.5 In the UK, most people consider starting a new business a desirable career choice. Percentage agreeing (versus disagreeing or don't know) in South of Scotland, Scotland and UK for 2018 by age group.

Age group	18 to 29	30 to 64	65 to 80	Total
South of Scotland	62.0%	49.4%	49.3%	51.1%
Scotland	54.3%	44.0%	39.0%	45.1%
United Kingdom	59.1%	47.1%	44.2%	49.1%

Table 3.2.1.6 In the UK, those successful at starting a new business have a high level of status and respect. Percentage agreeing (versus disagreeing or don't know) in South of Scotland, Scotland and UK for 2018 by age group.

Age group	18 to 29	30 to 64	65 to 80	Total
South of Scotland	87.5%	76.3%	70.7%	76.4%
Scotland	83.7%	69.6%	67.5%	71.9%
United Kingdom	80.8%	66.2%	64.5%	69.1%

Table 3.2.1.7 In the UK, you will often see stories in the public media about successful new businesses. Percentage agreeing (versus disagreeing or don't know) in South of Scotland, Scotland and UK for 2018 by age group.

Age group	18 to 29	30 to 64	65 to 80	Total
South of Scotland	56.0%	58.0%	51.9%	56.2%
Scotland	61.2%	60.3%	54.4%	59.4%
United Kingdom	60.7%	56.7%	50.8%	56.5%

Table 3.2.1.8 Do you identify the area where you live as an entrepreneurial ecosystem, that is one with a high presence of entrepreneurs who are innovating and well interconnected? Percentage saying yes (versus no or don't know) in South of Scotland, for 2018 by age group.

Age group	18 to 29	30 to 64	65 to 80	Total
South of Scotland	36.1%	23.4%	26.1%	25.8%

Table 3.2.1.9 Do you know someone personally who started a business in the past 2 years? Percentage answering yes (versus no or don't know) in South of Scotland, Scotland and UK for 2018 by gender.

Age group	Female	Male	Total
South of Scotland	32.4%	34.0%	33.2%
Scotland	25.7%	33.2%	29.4%
United Kingdom	26.6%	33.9%	30.2%

Table 3.2.1.10 In the next six months, will there be good opportunities for starting a business in the area where you live? Percentage answering yes (versus no or don't know) in South of Scotland, Scotland and UK for 2018 by gender.

Age group	Female	Male	Total
South of Scotland	29.8%	30.8%	30.3%
Scotland	27.8%	35.0%	31.3%
United Kingdom	28.9%	37.4%	33.2%

Table 3.2.1.11 Do you have the knowledge, skill and experience required to start a new business? Percentage answering yes (versus no or don't know) in South of Scotland, Scotland and UK for 2018 by gender.

Age group	Female	Male	Total
South of Scotland	38.0%	50.1%	43.8%
Scotland	30.4%	51.5%	40.7%
United Kingdom	35.6%	54.1%	44.8%

Table 3.2.1.12 Would fear of failure would prevent you from starting a business? Percentage answering yes (versus no or don't know) in South of Scotland, Scotland and UK for 2018 by gender.

Age group	Female	Male	Total
South of Scotland	42.3%	32.0%	37.3%
Scotland	39.6%	34.4%	37.1%
United Kingdom	39.3%	35.1%	37.2%

Table 3.2.1.13 Do you know someone personally who started a business in the past 2 years? Percentage answering yes (versus no or don't know) in South of Scotland, Scotland and UK for 2018 by education level.

Age group	Not graduate	Graduate	Total
South of Scotland	32.6%	34.7%	33.2%
Scotland	26.9%	33.6%	29.6%
United Kingdom	26.1%	35.6%	30.2%

Table 3.2.1.14 In the next six months, will there be good opportunities for starting a business in the area where you live? Percentage answering yes (versus no or don't know) in South of Scotland, Scotland and UK for 2018 by education level.

Age group	Not graduate	Graduate	Total
South of Scotland	30.4%	30.9%	30.6%
Scotland	28.3%	36.3%	31.5%
United Kingdom	29.3%	38.8%	33.4%

Table 3.2.1.15 Do you have the knowledge, skill and experience required to start a new business? Percentage answering yes (versus no or don't know) in South of Scotland, Scotland and UK for 2018 by education level.

Age group	Not graduate	Graduate	Total
South of Scotland	41.0%	50.4%	44.0%
Scotland	37.2%	46.5%	40.9%
United Kingdom	41.4%	49.5%	44.9%

Table 3.2.1.16 Would fear of failure would prevent you from starting a business? Percentage answering yes (versus no or don't know) in South of Scotland, Scotland and UK for 2018 by education level.

Age group	Not graduate	Graduate	Total
South of Scotland	37.6%	37.3%	37.5%
Scotland	34.8%	40.7%	37.2%
United Kingdom	33.2%	43.0%	37.4%

Table 3.2.1.17 Do you have the knowledge, skill and experience required to start a new business? Percentage answering yes (versus no or don't know) in South of Scotland, Scotland and UK for 2018 by migrant status (see text for definitions).

Age group	Not migrant	Migrant	Total
South of Scotland	38.4%	51.2%	43.9%
Scotland	38.5%	44.9%	40.7%
United Kingdom	43.0%	47.9%	45.0%

Table 3.2.1.18 Do you know someone personally who started a business in the past 2 years? Percentage answering yes (versus no or don't know) in South of Scotland, Scotland and UK for 2018 by family business background.

Age group	No family business background	Did not work in family business	Worked in family business	Total
South of Scotland	29.0%	45.8%	39.2%	33.2%
Scotland	25.8%	39.5%	41.0%	29.4%
United Kingdom	26.0%	38.3%	43.5%	30.3%

Table 3.2.1.19 In the next six months, will there be good opportunities for starting a business in the area where you live? Percentage answering yes (versus no or don't know) in South of Scotland, Scotland and UK for 2018 by family business background.

Age group	No family business background	Did not work in family business	Worked in family business	Total
South of Scotland	28.1%	36.4%	34.1%	30.3%
Scotland	28.5%	36.5%	44.7%	31.4%
United Kingdom	30.5%	36.3%	45.4%	33.2%

Table 3.2.1.20 Do you have the knowledge, skill and experience required to start a new business? Percentage answering yes (versus no or don't know) in South of Scotland, Scotland and UK for 2018 by family business background.

Age group	No family business background	Did not work in family business	Worked in family business	Total
South of Scotland	39.3%	51.4%	62.2%	43.9%
Scotland	36.2%	46.0%	66.9%	40.7%
United Kingdom	39.3%	54.0%	64.4%	44.8%

Table 3.2.2.1. Rates of intention or entrepreneurial activity along the entrepreneurial process in the South of Scotland, Scotland and the UK for 2018, by age group. (See Figure 1.1 in Section 1 for definitions of each stage.)

South of Scotland	Age in three categories, 18 to 29, 30 to 64, 65 to 80, column percentage				Age in three categories, 18 to 29, 30 to 64, 65 to 80, row percentage			
	18 to 29	30 to 64	65 to 80	Total	18 to 29	30 to 64	65 to 80	Total
No intention or activity	88.8%	81.4%	88.5%	84.2%	14.5%	59.1%	26.4%	100.0%
Intenders	5.5%	3.4%	0.8%	3.0%	25.2%	68.4%	6.4%	100.0%
Nascent	3.6%	3.4%	0.8%	2.8%	17.9%	75.2%	6.8%	100.0%
New	2.1%	2.0%	1.5%	1.9%	15.4%	64.7%	19.9%	100.0%
Established	0.0%	9.9%	8.5%	8.2%	0.0%	74.0%	26.0%	100.0%
	100.0%	100.0%	100.0%	100.0%	13.7%	61.1%	25.1%	100.0%

Scotland	Age in three categories, 18 to 29, 30 to 64, 65 to 80, column percentage				Age in three categories, 18 to 29, 30 to 64, 65 to 80, row percentage			
	18 to 29	30 to 64	65 to 80	Total	18 to 29	30 to 64	65 to 80	Total
No intention or activity	83.0%	83.4%	92.7%	85.1%	18.9%	60.5%	20.5%	100.0%
Intenders	4.5%	3.7%	0.8%	3.3%	26.4%	68.8%	4.8%	100.0%
Nascent	6.1%	2.1%	0.3%	2.5%	46.6%	51.5%	1.9%	100.0%
New	2.1%	3.4%	0.0%	2.5%	16.7%	83.3%	0.0%	100.0%
Established	4.3%	7.4%	6.2%	6.6%	12.6%	69.7%	17.7%	100.0%
	100.0%	100.0%	100.0%	100.0%	19.4%	61.7%	18.8%	100.0%

United Kingdom	Age in three categories, 18 to 29, 30 to 64, 65 to 80, column percentage				Age in three categories, 18 to 29, 30 to 64, 65 to 80, row percentage			
	18 to 29	30 to 64	65 to 80	Total	18 to 29	30 to 64	65 to 80	Total
No intention or activity	80.4%	79.3%	93.4%	82.1%	21.2%	58.4%	20.4%	100.0%
Intenders	9.1%	5.3%	0.3%	5.2%	37.6%	61.5%	1.0%	100.0%
Nascent	4.7%	3.3%	1.1%	3.2%	31.9%	61.8%	6.3%	100.0%
New	4.2%	3.8%	1.2%	3.4%	26.2%	67.7%	6.1%	100.0%
Established	1.6%	8.3%	4.1%	6.1%	5.6%	82.4%	12.0%	100.0%
	100.0%	100.0%	100.0%	100.0%	21.6%	60.5%	18.0%	100.0%

Table 3.2.2.2. Rates of intention or entrepreneurial activity along the entrepreneurial process in the South of Scotland, Scotland and the UK for 2018, by gender. (See Figure 1.1 in Section 1 for definitions of each stage.)

South of Scotland	Gender, column percentage			Gender , row percentage		
	Female	Male	Total	Female	Male	Total
No intention or activity	87.7%	80.4%	84.2%	53.6%	46.4%	100.0%
Intenders	2.8%	3.2%	3.0%	47.5%	52.5%	100.0%
Nascent	2.7%	2.9%	2.8%	49.8%	50.2%	100.0%
New	1.3%	2.5%	1.9%	34.5%	65.5%	100.0%
Established	5.6%	10.9%	8.2%	35.2%	64.8%	100.0%
Total	100.0%	100.0%	100.0%	51.4%	48.6%	100.0%

	Gender, column percentage			Gender , row percentage		
Scotland	Female	Male	Total	Female	Male	Total
No intention or activity	90.10%	79.90%	85.10%	54.3%	45.7%	100.0%
Intenders	2.60%	4.00%	3.30%	40.7%	59.3%	100.0%
Nascent	1.70%	3.40%	2.50%	33.6%	66.4%	100.0%
New	1.90%	3.10%	2.50%	39.0%	61.0%	100.0%
Established	3.80%	9.50%	6.60%	29.4%	70.6%	100.0%
Total	100.0%	100.0%	100.0%	50.7%	49.3%	100.0%

United Kingdom	Gender, column percentage			Gender , row percentage		
	Female	Male	Total	Female	Male	Total
No intention or activity	87.7%	76.3%	82.1%	53.9%	46.1%	100.0%
Intenders	3.9%	6.6%	5.2%	37.5%	62.5%	100.0%
Nascent	2.1%	4.3%	3.2%	33.6%	66.4%	100.0%
New	2.4%	4.5%	3.4%	35.6%	64.4%	100.0%
Established	3.8%	8.4%	6.1%	31.7%	68.3%	100.0%
Total	100.0%	100.0%	100.0%	50.4%	49.6%	100.0%

Table 3.2.2.3. Rates of intention or entrepreneurial activity along the entrepreneurial process in the South of Scotland, Scotland and the UK for 2018, by education. (See Figure 1.1 in Section 1 for definitions of each stage.)

South of Scotland	Education level, column percentage Not graduate	Graduate	Total	Education level, row percentage Not graduate	Graduate	Total
No intention or activity	84.0%	84.1%	84.1%	68.3%	31.7%	100.0%
Intenders	3.5%	2.0%	3.0%	79.3%	20.7%	100.0%
Nascent	2.5%	3.4%	2.8%	61.5%	38.5%	100.0%
New	1.7%	2.3%	1.9%	61.0%	39.0%	100.0%
Established	8.2%	8.2%	8.2%	68.4%	31.6%	100.0%
Total	100.0%	100.0%	100.0%	68.3%	31.7%	100.0%

Scotland	Education level, column percentage Not graduate	Graduate	Total	Education level, row percentage Not graduate	Graduate	Total
No intention or activity	85.9%	83.6%	85.0%	60.9%	39.1%	100.0%
Intenders	3.4%	3.2%	3.4%	61.5%	38.5%	100.0%
Nascent	2.1%	3.1%	2.5%	51.2%	48.8%	100.0%
New	2.0%	3.3%	2.5%	48.4%	51.6%	100.0%
Established	6.5%	6.8%	6.6%	59.1%	40.9%	100.0%
Total	100.0%	100.0%	100.0%	60.3%	39.7%	100.0%

United Kingdom	Education level, column percentage Not graduate	Graduate	Total	Education level, row percentage Not graduate	Graduate	Total
No intention or activity	84.0%	79.1%	81.9%	58.6%	41.4%	100.0%
Intenders	4.6%	6.2%	5.3%	49.8%	50.2%	100.0%
Nascent	2.3%	4.4%	3.2%	41.3%	58.7%	100.0%
New	2.7%	4.5%	3.5%	45.0%	55.0%	100.0%
Established	6.3%	5.8%	6.1%	59.1%	40.9%	100.0%
Total	100.0%	100.0%	100.0%	57.1%	42.9%	100.0%

Table 3.2.2.4. Rates of intention or entrepreneurial activity along the entrepreneurial process in the South of Scotland, Scotland and the UK for 2018, by migrant status. (See Figure 1.1 in Section 1 for definitions of each stage and Section 3.1 for definitions of migrant status.)

	South of Scotland		Scotland		United Kingdom	
	Non-migrants	Migrants	Non-migrants	Migrants	Non-migrants	Migrants
No intention or activity	86.1%	81.2%	87.1%	80.8%	83.3%	79.8%
Intenders	3.0%	3.2%	2.7%	4.6%	4.6%	6.4%
Nascent	2.9%	2.9%	2.0%	3.7%	3.6%	2.8%
New	1.5%	2.3%	1.8%	3.8%	3.3%	3.7%
Established	6.5%	10.5%	6.4%	7.1%	5.2%	7.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 3.2.2.5. Rates of intention or entrepreneurial activity along the entrepreneurial process in the South of Scotland, Scotland and the UK for 2018, by family business background. (See Figure 1.1 in Section 1 for definitions of each stage.)

	Family business Background, column percentage				Family business background, row percentage			
South of Scotland	No family business background	Did not work in family business	Worked in family business	Total	No family business background	Did not work in family business	Worked in family business	Total
No intention or activity	86.6%	81.2%	72.7%	84.2%	73.0%	18.3%	8.7%	100.0%
Intenders	2.7%	3.1%	5.2%	3.0%	63.3%	19.4%	17.3%	100.0%
Nascent	2.3%	3.7%	4.1%	2.8%	59.7%	25.5%	14.8%	100.0%
New	1.7%	2.4%	2.4%	1.9%	62.7%	24.5%	12.8%	100.0%
Established	6.7%	9.6%	15.6%	8.2%	58.5%	22.4%	19.1%	100.0%
Total	100.0%	100.0%	100.0%	100.0%	71.0%	19.0%	10.0%	100.0%
	Family business Background, column percentage				Family business background, row percentage			
Scotland	No family business background	Did not work in family business	Worked in family business	Total	No family business background	Did not work in family business	Worked in family business	Total
No intention or activity	88.6%	78.7%	69.0%	85.1%	77.5%	14.5%	8.0%	100.0%
Intenders	2.8%	3.5%	6.9%	3.3%	62.8%	16.6%	20.6%	100.0%
Nascent	1.6%	4.1%	6.8%	2.5%	48.1%	25.4%	26.5%	100.0%
New	1.9%	4.6%	3.6%	2.5%	57.0%	28.7%	14.3%	100.0%
Established	5.1%	9.2%	13.6%	6.6%	57.7%	21.9%	20.4%	100.0%
Total	100.0%	100.0%	100.0%	100.0%	74.4%	15.7%	9.8%	100.0%
	Family business Background, column percentage				Family business background, row percentage			
United Kingdom	No family business background	Did not work in family business	Worked in family business	Total	No family business background	Did not work in family business	Worked in family business	Total
No intention or activity	85.6%	78.3%	65.8%	82.1%	73.1%	18.4%	8.5%	100.0%
Intenders	4.0%	7.4%	9.8%	5.3%	53.2%	27.0%	19.8%	100.0%
Nascent	2.7%	3.5%	5.5%	3.2%	60.3%	21.2%	18.5%	100.0%
New	2.9%	4.1%	5.7%	3.4%	59.8%	22.8%	17.4%	100.0%
Established	4.8%	6.8%	13.2%	6.1%	55.3%	21.7%	23.1%	100.0%
Total	100.0%	100.0%	100.0%	100.0%	70.1%	19.3%	10.6%	100.0%

Table 3.2.3.1 Expected future business size by four categories for early-stage entrepreneurs (nascent plus new entrepreneurs) aged 18 to 80.

Expected number of jobs in 5 years' time	South of Scotland		Scotland		United Kingdom	
	% of TEA entrepreneurs	% of sample	% of TEA entrepreneurs	% of sample	% of TEA entrepreneurs	% of sample
No jobs	16.0	0.6	43.3	1.8	34.4	2.0
1-5 jobs	64.9	2.4	35.2	1.4	39.5	2.3
6-19 jobs	16.7	0.6	10.5	0.4	12.1	0.7
20+ jobs	2.3	0.1	11.0	0.5	14.0	0.8
Total	100.0	3.7	100.0	4.1	100.0	5.9

Source: UK GEM APS 2018

Table 3.2.3.2 of expected future business size by four categories for late-stage entrepreneurs (established business owner/managers) aged 18 to 80.

Expected number of jobs in 5 years' time	South of Scotland		Scotland		United Kingdom	
	% of established business owner-managers	% of sample	% of established business owner-managers	% of sample	% of established business owner-managers	% of sample
No jobs	50.6	3.6	41.2	2.4	35.3	1.9
1-5 jobs	29.2	2.1	38.7	2.3	37.6	2.0
6-19 jobs	13.0	0.9	14.0	0.8	14.6	0.8
20+ jobs	7.2	0.5	6.1	0.4	12.5	0.7
Total	100.0	7.1	100.0	5.8	100.0	5.3

Table 3.3.1 Rates of intention or entrepreneurial activity along the entrepreneurial process in the South of Scotland, benchmark regions, Scotland and the UK for the pooled 2003 to 2010 GEM APS data sample, by age group. (See Figure 1.1 in Section 1 for definitions of each stage.)

Ages 18 to 64	South of Scotland	Highlands and Islands	Devon and Cornwall	Cumbria and Northum-berland	East Wales	Shropshire and Hereford-shire	Scotland	United Kingdom
No intention or activity	80.3%	82.9%	80.9%	86.5%	84.2%	84.2%	86.9%	84.0%
Intenders	4.2%	3.6%	4.5%	3.2%	4.3%	5.6%	3.8%	5.0%
Nascent	2.8%	2.2%	2.8%	2.4%	2.6%	3.0%	2.2%	2.7%
New	4.0%	3.0%	4.1%	2.2%	3.1%	2.8%	2.3%	2.9%
Established	8.7%	8.3%	7.7%	5.7%	5.7%	4.5%	4.8%	5.4%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Ages 65 to 80	South of Scotland	Highlands and Islands	Devon and Cornwall	Cumbria and Northum-berland	East Wales	Shropshire and Hereford-shire	Scotland	United Kingdom
No intention or activity	96.5%	92.6%	94.5%	97.1%	95.7%	100.0%	96.8%	96.0%
Intenders		1.0%	0.1%		0.2%		0.5%	0.5%
Nascent	0.4%	0.5%	1.0%	0.7%	0.6%		0.2%	0.4%
New	0.4%	0.9%	0.7%	0.3%	0.5%		0.4%	0.3%
Established	2.8%	5.1%	3.5%	1.9%	3.1%		2.2%	2.8%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: 2003 to 2010 UK GEM APS

Table 3.3.2 Rates of intention or entrepreneurial activity along the entrepreneurial process in the South of Scotland, benchmark regions, Scotland and the UK for the pooled 2011 to 2018 GEM APS data sample, by age group. (See Figure 1.1 in Section 1 for definitions of each stage.)

Ages 18 to 64	South of Scotland	Highlands and Islands	Devon and Cornwall	Cumbria and Northum-berland	East Wales	Shropshire and Hereford-shire	Scotland	United Kingdom
No intention or activity	81.3%	79.5%	78.0%	80.5%	80.6%	80.0%	82.8%	79.0%
Intenders	3.9%	4.8%	4.9%	5.6%	6.3%	6.7%	5.4%	6.7%
Nascent	2.2%	3.4%	5.1%	3.2%	4.0%	5.4%	3.3%	4.3%
New	3.9%	3.9%	3.5%	3.1%	2.9%	3.0%	3.1%	3.7%
Established	8.6%	8.5%	8.6%	7.6%	6.2%	4.8%	5.5%	6.3%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Ages 65 to 80	South of Scotland	Highlands and Islands	Devon and Cornwall	Cumbria and Northum-berland	East Wales	Shropshire and Hereford-shire	Scotland	United Kingdom
No intention or activity	92.0%	86.9%	92.4%	89.7%	93.8%	98.2%	93.8%	93.3%
Intenders		1.3%	0.7%	1.0%	0.5%		0.5%	0.9%
Nascent		1.3%	0.7%	2.2%	0.6%		0.5%	0.8%
New	2.1%	0.7%	0.6%		0.7%		0.7%	0.8%
Established	5.9%	9.9%	5.7%	7.0%	4.4%	1.8%	4.4%	4.3%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: 2011 to 2018 UK GEM APS

Table 3.3.3 Prevalence of early-stage entrepreneurs aged 18 to 64 in the South of Scotland, benchmark regions, Scotland and the UK for the pooled 2003 to 2010 and 2011 to 2018 GEM APS data sample, by level of expected number of employees in five years

2003 to 2010	South of Scotland	Highlands and Islands	Devon and Cornwall	Cumbria and Northum-berland	East Wales	Shropshire and Hereford-shire	Scotland	United Kingdom
TEA rate (nascent, new)	7.1%	5.6%	7.2%	4.9%	6.0%	5.8%	4.7%	5.8%
TEA expect 2+jobs in 5 yrs	3.3%	2.6%	3.9%	2.1%	3.4%	3.0%	2.6%	3.3%
TEA expect 5+jobs in 5 yrs	2.0%	1.2%	2.3%	1.1%	2.0%	2.0%	1.6%	2.1%
TEA expect 10+ jobs in 5 yrs	1.0%	0.5%	1.3%	0.9%	1.2%	0.6%	1.0%	1.3%
2011 to 2018	South of Scotland	Highlands and Islands	Devon and Cornwall	Cumbria and Northum-berland	East Wales	Shropshire and Hereford-shire	Scotland	United Kingdom
TEA rate (nascent, new)	6.4%	7.7%	9.4%	6.8%	7.1%	8.8%	6.5%	8.2%
TEA expect 2+jobs in 5 yrs	2.7%	2.9%	3.7%	2.9%	3.8%	2.6%	3.1%	4.3%
TEA expect 5+jobs in 5 yrs	1.3%	1.4%	1.4%	2.4%	2.3%	1.8%	2.0%	2.9%
TEA expect 10+ jobs in 5 yrs	0.8%	0.6%	0.2%	1.3%	1.3%	0.9%	1.3%	1.8%

Source: 2003 to 2010 and 2011 to 2018 UK GEM APS

Table 4.2.1 Enterprise Research Centre estimates of High Growth Firm rates and Small Firm Growth rates for the 2015 to 2018 period for the South of Scotland and benchmark regions.

	South of Scotland	Highlands and Islands	Devon	Cornwall and Isles of Scilly	Cumbria	The Marches	Scotland	UK
High Growth Firm Rate (%)	4.5	4.7	4.7	5.5	4.7	6.5	5.2	6.2
Small High Growth Firm Rate (%)	0.85	n.a.	1.16	1.4	0.9	1.2	1.2	1.3

Source: Enterprise Research Centre estimates based on ONS data.

Table 4.3.1. Births of New Enterprises expressed as a percentage of all Active Enterprises for 2014 to 2019

	South of Scotland	Highlands and Islands	Devon and Cornwall	Cumbria and Northum-berland	East Wales*	Shropshire and Hereford-shire	Scotland	United Kingdom
2014	9.9	9.9	10.7	11.5	11.4	10.3	12.7	13.7
2015	8.6	9.5	10.8	10.4	11.3	10.4	12.6	14.3
2016	8.7	9.5	10.9	10.2	11.5	10.1	12.5	14.6
2017	7.7	9.0	10.2	9.3	14.6	9.7	11.5	12.9
2018	8.0	8.4	9.8	9.5	11.5	9.4	11.4	12.7
2019	8.1	8.8	10.2	9.3	10.7	11.1	11.8	13.0
Average	8.5	9.2	10.4	10.0	11.8	10.2	12.1	13.5
SoS as % of benchmark		92%	81%	84%	72%	84%	70%	63%

*excluding Cardiff and Vale of Glamorgan

Source: Business demography, UK: 2019, ONS, 17 November 2020 https://www.ons.gov.uk/businessindustryandtrade/business/activitysizeandlocation/datasets/businessdemographyreferencetable Release of 7 December 2020

Table 4.3.2. Births of New Enterprises expressed as a percentage of the population for 2014 to 2019

	South of Scotland	Highlands and Islands	Devon and Cornwall	Cumbria and Northum-berland	East Wales*	Shropshire and Hereford-shire	Scotland	United Kingdom
2014	3.3	3.9	3.9	4.2	3.9	4.0	4.0	5.4
2015	2.9	3.8	4.0	3.8	3.9	4.1	4.0	5.9
2016	2.9	3.8	4.1	3.9	4.1	4.0	4.1	6.3
2017	2.6	3.6	3.8	3.5	5.5	3.9	3.8	5.7
2018	2.6	3.3	3.7	3.5	4.3	3.7	3.8	5.6
2019	2.7	3.5	3.8	3.5	4.1	4.5	4.0	5.8
Average	2.8	3.7	3.9	3.7	4.3	4.1	4.0	5.8
SoS as % of benchmark		78%	73%	76%	66%	70%	72%	49%

*excluding Cardiff and Vale of Glamorgan

Source: Business demography, UK: 2019, ONS, 17 November 2020 and CSO mid-year population estimates.https://www.ons.gov.uk/businessindustryandtrade/business/activitysizeandlocation/datasets/businessdemographyreferencetable Release of 7 December 2020

Table 4.3.3 High growth Enterprise rates for 2017, 2018 and 2019 (corresponding to base years 2014, 2015 and 2016 for growth rate measurement) for the South of Scotland and benchmark regions, expressed as a percentage of enterprises employing at least 10 people in the base year.

Base year	South of Scotland	Highlands and Islands	Devon and Cornwall	Cumbria and Northum-berland	East Wales*	Shropshire and Hereford-shire	Scotland	United Kingdom
2017	3.0%	3.8%	4.2%	3.7%	5.4%	4.7%	4.3%	5.0%
2018	4.0%	4.3%	4.4%	4.0%	5.4%	4.7%	4.5%	5.2%
2019	3.0%	4.3%	4.0%	3.8%	4.6%	4.0%	4.0%	4.6%
Average	3.3%	4.2%	4.2%	3.9%	5.1%	4.5%	4.3%	4.9%

*excluding Cardiff and Vale of Glamorgan

Source: Business demography, UK: 2019, ONS, 17 November 2020 Rates are based on ONS estimates of "high growth enterprises" in year x+3 and "ten plus enterprises" in year x, taken from IDBR database.

https://www.ons.gov.uk/businessindustryandtrade/business/activitysizeandlocation/datasets/businessdemographyreferencetable Release of 7 December 2020

Table 4.3.4. High Growth Enterprise rates expressed as a percentage of the population for 2014 to 2019

	South of Scotland	Highlands and Islands	Devon and Cornwall	Cumbria and Northum-berland	East Wales*	Shropshire and Hereford-shire	Scotland	United Kingdom
2014	1.3	2.2	2.0	1.8	1.6	1.9	1.8	2.2
2015	1.3	1.8	1.8	1.7	1.4	1.5	1.5	1.9
2016	1.1	1.9	2.0	1.8	1.7	1.9	1.7	2.1
2017	1.1	1.8	1.8	1.5	1.9	1.9	1.6	2.0
2018	1.5	2.0	1.8	1.6	1.9	2.0	1.7	2.1
2019	1.1	2.0	1.7	1.6	1.6	1.7	1.5	1.9
Average	1.3	1.9	1.9	1.7	1.7	1.8	1.6	2.0

Source: Business demography, UK: 2019, ONS, and CSO mid-year population estimates. Rates are based on ONS estimates of "high growth enterprises" in year x+3 and "ten plus enterprises" in year x, taken from IDBR database.

https://www.ons.gov.uk/businessindustryandtrade/business/activitysizeandlocation/datasets/businessdemographyreferencetable Release of 7 December 2020

Table 4.3.5 One to five year survival rates of new enterprises born in 2014

	South of Scotland	Highlands and Islands	Devon and Cornwall	Cumbria and Northum-berland	East Wales*	Shropshire and Hereford-shire	Scotland	United Kingdom
1-year survival	92%	93%	92%	95%	94%	94%	92%	92%
2-year survival	75%	78%	76%	79%	78%	79%	76%	76%
3-year survival	60%	65%	62%	64%	63%	65%	60%	61%
4-year survival	49%	54%	51%	53%	51%	55%	49%	49%
5-year survival	44%	47%	45%	45%	44%	48%	42%	42%

*excluding Cardiff and Vale of Glamorgan

Source: Business demography, UK: 2019, ONS, 17 November 2020 https://www.ons.gov.uk/businessindustryandtrade/business/activitysizeandlocation/datasets/businessdemographyreferencetable Release of 7 December 2020

Table 4.3.1 Correlation between regional (NUTS2) level characteristics and early-stage entrepreneurial activity in the UK by growth aspiration (pooled 2013 to 2017 estimates)

	TEA	TEA, expect 10+ jobs in five years	TEA, expect 20+ jobs in five years
Gross Disposable Household Income per capita, 2013	0.61	0.61	0.50
Growth in GDHI per capita, 2013	0.42	0.50	0.34
Gross Valued Added per capita, 2013	0.51	0.70	0.67
Growth in GVA per capita, 2013	0.07	-0.12	-0.03
Gross Value Added per hour worked, 2013	0.50	0.51	0.50
Growth in Gross Value Added per hour worked, 2013	0.17	-0.08	-0.00
Percentage of foreign-born, 2011 census	0.55	0.75	0.71

Source: GEM UK database, ONS estimates

Table 5.1: The state of demand elements in the South of Scotland

Label	Variable/ Question	Score
D	Demand pillar overall score	6.36
D6	It is easy to access markets outside of the region	7.03
D2	Customers prefer, if possible, to buy goods and services which are produced by local firms	6.72
D4	Consumers are open to new and innovative products and services	6.52
D5	The first customers of many new firms are located in this region	6.27
D3	Most new and growing firms can sell their goods and services locally	6.19
D1	In the next six months, will there be good opportunities for starting a business in the area where you live?	5.20

Table 5.2: Entrepreneurial culture in the South of Scotland

Label	Variable/ Question	Score
C	Culture pillar overall score	5.73
C3	Those successful at starting a new business have a high level of status and respect	8.34
C5	Most people in the South of Scotland are supportive of individuals who are interested in becoming entrepreneurs (for nascent entrepreneurs)	6.84
C10	Most people are supportive of individuals who are interested in becoming entrepreneurs	6.63
C6	Most people in the South of Scotland are supportive of individuals who are interested in becoming entrepreneurs (for new and established owner-managers)	6.60
C2	Most people consider starting a new business a desirable career choice	5.74
C9	New and growing firms can enter markets without being unfairly blocked by established firms	5.72
C1	Fear of failure would (not) prevent you from starting a business (reversed variable)	5.62
C7	Large established firms are supportive of high-growth start-ups, pursuing a long-term interest or investment rather than hostile or short-term motives (takeover to shut down, dismantling, etc.)	5.31
C4	Share of respondents who answered YES to: Are you, alone or with others, expecting to start a new business, including any type of self-employment, within the next three years? This share is then compared regional and national averages and results grouped into 3 possible scores for the ES.	3.33
C8	There are many events for start-up entrepreneurs, such as meet-ups, pitch days, start-up weekends, boot camps, hackathons and competitions.	3.12

Table 5.3: Talent for enterprises in the South of Scotland

Label	Variable/ Question	Score
T	Talent pillar overall score	5.05
T6	You can afford to hire the employees you need for your business locally (for new and established owner-managers)	6.98
T4	You are satisfied that the skill levels of people in the South of Scotland are sufficient for your business needs (for nascent entrepreneurs)	6.70
T5	There is shortage of the types of employees you need for your business in your region (for new and established owner-managers) (reversed variable showing degree of disagreement with the proposed statement)	5.92
T3	You can afford to hire the employees you need for your business locally (for nascent entrepreneurs)	5.88
T2	There is a shortage of the types of employees you need for your business in your region (for nascent entrepreneurs) (reversed variable showing degree of disagreement with the proposed statement)	5.86
T7	You are satisfied that the skill levels in the South of Scotland are sufficient for your business needs (for new and established owner-managers)	5.30
T12	The South of Scotland is an attractive location to move to for people with the skills needed by new and growing firms	5.20
T1	You have the knowledge, skills and experience required to start a new business	4.36
T9	In the South of Scotland, higher education institutions ensure the workforce for new and growing firms is sufficient in quality	3.72
T10	In the South of Scotland, higher education institutions ensure the workforce for new and growing firms is sufficient in quantity	3.72
T11	In the South of Scotland, highly qualified young people tend to stay within the region	3.52
T8	In the South of Scotland a broad array of highly skilled workers is available for new and growing firms	3.48

Table 5.5: Entrepreneurial Knowledge in the South of Scotland

Label	Variable/ Question	Score
K	Knowledge pillar overall score	5.03
K2	Your business is built on the result of something you learned from a person or organization in your region (for new and established owner-managers)	6.48
K1	Your business is built on the result of something you learned from a person or organization in your region (for nascent entrepreneurs)	5.78
K4	New knowledge developed by large businesses in the South of Scotland is an important source of ideas for new and growing firms within the South of Scotland	4.89
K5	New knowledge about doing business flows freely between entrepreneurs in the South of Scotland	4.09
K3	There are many examples of new and growing firms that use new technology, science, and other knowledge developed in local universities and public research institutions	3.89

Table 5.6: Physical infrastructure for entrepreneurship in the South of Scotland

Label	Variable/ Question	Score
P	Physical infrastructure pillar overall score	5.01
P2	Telecommunications, Internet access and speed (for nascent entrepreneurs)	6.22
P3	Price and availability of additional physical space to grow your business (for nascent entrepreneurs)	5.74
P5	Telecommunications, Internet access and speed (for new and established owner-managers)	5.56
P8	It is not too expensive for a new or growing firm to get good access to communications (phone, Internet, etc.)	5.52
P10	New or growing firm have access to affordable office space	5.51
P4	Transport infrastructure (for example, roads, parking space, traffic flow) (for new and established owner-managers)	5.06
P1	Transport infrastructure (for example, roads, parking space, traffic flow) (for nascent entrepreneurs)	4.84
P6	Price and availability of additional physical space to grow your business (for new and established owner-managers)	4.78
P7	The general physical infrastructure, like roads, utilities and waste disposal, provides good support for new and growing firms	3.47
P9	New or growing firms have access to state-of-the-art Internet connection speed	3.40

Table 5.6: Entrepreneurial networking in the South of Scotland

Label	Variable/ Question	Score
N	Networking pillar overall score	5.01
N1	Easy to get in touch with other owner-managers of young businesses personally (for nascent entrepreneurs)	7.50
N4	How often do you attend local business networking events? (for nascent entrepreneurs)	6.72
N5	Easy to get in touch with other owner-managers of young businesses personally (for new and established owner-managers)	6.38
N9	Per cent of population that thinks that media favour entrepreneur's activities	6.12
N2	You can easily find the right people through your network for help/advice (for nascent entrepreneurs)	5.92
N11	Private organizations or members of the start-up community run start-up events with sufficient frequency to support new and growing businesses	5.15
N6	You can easily find the right people through your network for help/advice (for new and established owner-managers)	5.02
N8	How often do you attend local business networking events? (for owner- managers)	4.92
N10	Public organizations run start-up events with sufficient frequency to support new and growing businesses effectively	4.56
N12	There are examples of well-connected start-ups with active investors, advisors, etc.	4.52
N3	Most owner-managers in the same industry/region participate in at least one local business network for nascent entrepreneurs	4.06
N15	Per cent of individuals that know other entrepreneurs	3.87
N13	In the region: start-up community networks are well known and accessible	3.73
N14	Different local organizations often jointly organize events to foster regional entrepreneurship activity	3.33
N7	Most owner-managers in same industry/region participate in at least one local business network (for new and established owner-managers)	3.32

Table 5.4: Formal institutions and entrepreneurship in the South of Scotland

Label	Variable/ Question	Score
G	Formal institutions pillar	4.63
G2	Bureaucracy and regulations you encountered during the founding of your business are NOT a serious problem (for new and established owner- managers)	6.00
G5	Support for new and growing firms is a high priority for Chambers (of Craft, of Commerce, of Industry, etc.).	5.86
G9	Government programs aimed at supporting new and growing firms are significantly improving the chances of survival and success of those firms	5.37
G1	Bureaucracy and regulations you encounter during the founding of your business are NOT a serious problem (for nascent entrepreneurs)	5.34
G6	Support for new and growing firms is a high priority for educational institutions	4.44
G8	Almost anyone who needs help from a government program for a new or growing business can find what they need	4.02
G4	Support for new and growing firms is a high priority for the local government	4.01
G7	It is extremely easy for new and growing firms to cope with government bureaucracy, regulations and licensing requirements	3.52
G3	Government policies (e.g., public procurement) consistently consider new and growing firms	3.11

Table 5.5: Enterprise Finance in the South of Scotland

Label	Variable/ Question	Score
F	Finance pillar overall score	4.01
F2	You feel there are adequate sources of external start-up funding in your region (for nascent entrepreneurs)	4.96
F3	You feel there are adequate sources of external start-up funding in your region (for new and established owner-managers)	4.80
F7	In the South of Scotland, new and growing firms have sufficient access to funding from business angels	4.50
F6	In the South of Scotland, new and growing firms have sufficient access to government subsidies	4.17
F4	In the South of Scotland, new and growing firms have sufficient access to equity funding	3.87
F11	In the South of Scotland, entrepreneurs have sufficient access to funding for business growth	3.80
F10	In the South of Scotland, entrepreneurs have sufficient access to funding for their start-up phase	3.79
F8	In the South of Scotland, new and growing firms have sufficient access to funding from venture capitalists	3.67
F9	In the South of Scotland, entrepreneurs have sufficient access to pre-start-up funding	3.63
F5	In the South of Scotland, new and growing firms have sufficient access to debt funding	3.61
F1	Relative rate of informal investment; assigns a code depending on the value of the regional rate of informal investors/national rate of informal investors	3.33

Table 5.6: Entrepreneurial Ecosystem Leadership in the South of Scotland

Label	Variable/ Question	Score
L	Leadership pillar overall score	4.28
L5	How often do you give advice in the form of mentoring to new business owner- managers? (for new and established owner-managers)	5.28
L10	In my region, the development of the ecosystem is not constrained due to a single public or private organization or actor having too much power (reversed variable)	5.09
L7	In the South of Scotland, at least one strong entrepreneurial group or individual with high economic impact is a visible part of an entrepreneurial community	4.61
L3	Your decision to start your own business was strongly inspired by a start-up or business from your region (for nascent entrepreneurs)	4.50
L8	In my region, there is a broad pool of well-respected mentors and advisors offering support for new and growing firms, acting for the long term rather than pursuing short term financial gain	4.48
L6	Your decision to start your own business was strongly inspired by a start-up or business from your region (for new and established owner-managers)	4.32
L1	How often do you receive advice for your new business in the form of mentoring from established business founders in your region? (for nascent entrepreneurs)	4.08
L9	In my region, public and private organizations cooperate with each other to enhance entrepreneurship in the region	3.84
L2	How often do you give advice in the form of mentoring to new business owner-managers? (for nascent entrepreneurs)	3.40
L4	How often did you receive advice for your new business in the form of mentoring from established business founders in your region? (for new and established owner- managers)	3.18

Table 5.7: Entrepreneurial Support Services and Intermediaries in the South of Scotland

Label	Variable/ Question	Score
S	Support services pillar overall score	4.32
S2	How strongly is your new business supported by a program in your region which is aimed at business start-ups (for nascent entrepreneurs)	6.18
S8	An impartial agency exists as first contact point for entrepreneurs, helping them to find the optimal sources of support for their specific needs	4.72
S6	New and growing firms can afford the cost of local subcontractors, suppliers, and consultants	4.66
S5	There are enough high-quality subcontractors, suppliers, and consultants to support new and growing firms	4.48
S10	Regional agencies efficiently enable access to national and international support programs for new and growing businesses	4.40
S4	How strongly was your new business supported by a program in your region which is aimed at business start-ups (e.g., an accelerator or incubator program) (for new and established owner-managers)	4.20
S7	A wide range of government assistance for new and growing firms can be obtained through contact with a single agency	4.16
S1	There are, in general, enough workshops and other training opportunities accessible within your region for accounting, tax and legal issues, business planning, etc. which are usable for your type of start-up (for nascent entrepreneurs)	3.66
S9	Government programs for new and growing businesses are sufficiently tailored to regional needs	3.44
S3	There are, in general, enough workshops and other training opportunities accessible within the South of Scotland to learn the business skills you need for your business (for new and established owner-managers)	3.26

Table 5.8: Correlations between ecosystem pillars

	N	L	F	T	K	S	G	C	P	D
N	1	.679*	.795**	.788**	.763**	.703*	0.459	.781**	.697*	0.347
L		1	.767**	0.384	.643*	.875**	.727**	.832**	0.499	.806**
F			1	0.493	.707*	.776**	.581*	.747**	0.414	.640*
T				1	.771**	0.448	0.236	0.433	0.462	0.024
K					1	.690*	0.516	.634*	0.464	0.488
S						1	.919**	.695*	.605*	.722**
G							1	0.498	0.376	.688*
C								1	0.518	.698*
P									1	0.202
D										1

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

8 Appendix 2: List of Abbreviations

APS	Adult Population Survey
BLS	Bureau of Labor Statistics (US)
BSD	Business Structure Database
ERC	Enterprise Research Centre
ESI	Entrepreneurial Ecosystem Index
GEM	Global Entrepreneurship Monitor
GVA	Gross Value Added
HGF	High Growth Firm
IDBR	Inter Departmental Business Register
LEP	Local Enterprise Partnership
NUTS2	Nomenclature of Territorial Units for Statistics level 2
OECD	Organisation for Economic Cooperation and Development
ONS	Office of National Statistics
PAYE	Pay As You Earn
RDA	Regional Development Agency
RES	Regional Expert Survey
SHGF	Small High Growth Firm
SOSE	South of Scotland Enterprise
TEA	Total early-stage Entrepreneurial Activity
VAT	Value Added Tax