

Institution: University of Strathclyde		
Unit of Assessment: C17 Business and Management Studies		
Title of case study: Enhancing entrepreneurial policy, ecosystems and firm growth		
Period when the underpinning research was undertaken: 2000 - 2018		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Jonathan Levie	Professor	01/05/1999 – 31/12/2018
Eleanor Shaw	Professor	30/01/2001 – present
Sara Dodd	Professor	01/08/2014 – present
Nigel Lockett	Professor	01/01/2019 – present
Period when the claimed impact occurred: August 2013 – December 2020		
Is this case study continued from a case study submitted in 2014? No		
<p>1. Summary of the impact</p> <p>Research undertaken by Strathclyde's Hunter Centre for Entrepreneurship (HCE) has informed entrepreneurial policy, improved Scotland's entrepreneurial ecosystem and supported the growth of entrepreneurial ventures. Through collaboration with the Scottish Government, regional enterprise support organisations and membership organisations, this research has: informed the development of a policy framework to accelerate Scotland's entrepreneurial ecosystem (Scotland CAN DO); contributed to raising the global profile of Scotland's entrepreneurial ecosystem from 13th to 5th in the Global Entrepreneurship Development Index (GEDI) of innovation-driven nations; and informed the design of a suite of entrepreneurship leadership programmes focused on scaling high potential ventures, including the ScaleUp Institute-endorsed Growth Advantage Programme.</p>		
<p>2. Underpinning research</p> <p>While the UK and Scotland have a strong tradition of business start-ups, their track record of growing businesses compares less favourably with other prosperous economies including the Group of Eight (G8) highly industrialised nations. Under-developed entrepreneurial ecosystems (EE) is a key reason for this, with new firms often lacking access to the resources, talent, infrastructure, markets and other forms of support needed to grow. This is despite the UK's well-educated and diverse workforce, strong science and engineering base, 'business-friendly' regulations and investment in research. Evidence from economies with vibrant EE shows that firms that grow make significant contributions to job creation, productivity and the Gross Value Added (GVA) of the goods and services produced. Recognising this, Strathclyde's Hunter Centre for Entrepreneurship has engaged in a sustained programme of research to: better understand EEs; identify policy interventions which can improve Scotland's EE; and investigate entrepreneurial practices that help firms grow.</p> <p>Entrepreneurial Ecosystems (EE)</p> <p>Between 2000 and 2018, Professor Levie played a lead role in the Global Entrepreneurship Monitor (GEM) which provides annual comparative assessments of national entrepreneurial activity rates across a networked consortium of now 115 countries. GEM collects and analyses survey data across this consortium to: identify levels of entrepreneurial activity; uncover factors leading to appropriate levels of entrepreneurship; and suggest policies to enhance national levels of entrepreneurial activity through improvements to EEs. Since 2000, Strathclyde has managed the GEM UK project in partnership with Aston Business School and taken sole responsibility for reporting on Scotland. In parallel, Levie provided a theory-grounded examination of the GEM model and tested the effect of education and training for entrepreneurship (an identified Entrepreneurial Framework Condition) on the allocation of effort into venture creation. He found a positive relationship between post-secondary education and increased entrepreneurial activity, especially in high-income economies [R1]. GEM data was subsequently used in a number of investigations, notably the Massachusetts Institute of Technology (MIT) Regional Entrepreneurship Acceleration Program (REAP Scotland). Between 2012 and 2014, as the only</p>		

academic member of REAP Scotland, Levie contributed to a detailed investigation to quantify Scotland's EE; benchmark this internationally using GEDI and engage in deep and broad stakeholder consultation across the EE. This analysis identified 5 actions to improve Scotland's EE including improvements in networking linkages, skills for growth and access to growth finance as well as leveraging university expertise and promoting innovation-driven entrepreneurship; Task Groups were then formed to progress these [R2]. Levie later undertook an empirical analysis of the outcomes of REAP which concluded that after almost 3 decades of a 'top down' market failure approach to entrepreneurial policy, an ecosystems management approach involving deep engagement with stakeholders was more effective in enhancing Scotland's EE.

Firm growth - the role of networking practices

Professors Shaw and Dodd have engaged in a sustained body of research investigating firm growth across diverse contexts including female, graduate, creative, craft, and Black, Asian and minority ethnic (BAME) entrepreneurs. Their analysis of entrepreneurial growth has drawn heavily from sociological theoretical perspectives including Social Network Theory and Bourdieu's work on 'Capital theory' and his concept of 'Habitus', to identify and understand those entrepreneurial practices that help firms grow. For example, Shaw's qualitative study of small firm networks [R3] identified the benefits of networking for firm sustainability and growth and provided insights into entrepreneurs' motivations for networking and the networking practices they employ. Subsequent research, examining the lived experiences of 10 craft entrepreneurs, revealed previously unidentified forms of capital conversions, demonstrated that the conversion process can involve multiple forms of capital and showed that such entrepreneurs give no primacy to economic capital [R4]. Alongside this, analysis of graduate entrepreneurs' networking practices [R5] identified distinct patterns which impacted their ability to access resources contained in networks. This body of research recommended policy interventions flexible enough to unlock the entrepreneurial potential of different groups of entrepreneurs through tailored leadership development, introductions to role models and advice on how to build both strong and diverse networks. This research also identified that 'growth' is defined by entrepreneurs in different ways and recommended that alternative approaches to analysing the impact of interventions on growth should be developed. Complementary to this, Professor Lockett's recent 3-country study of entrepreneurial learning found that both formal and non-formal learning remain important foundations for the development of entrepreneurial competences. Through in-depth analysis of 18 life stories, focusing on self-identified critical incidents to identify ways in which graduate entrepreneurs develop entrepreneurial competence while at university, this research highlighted the particular importance of informal learning through networks, especially mentor supported socialised learning [R6].

3. References to the research (Strathclyde-affiliated researchers in bold)

- R1** J. Levie, E. Autio (2008). A theoretical grounding and test of the GEM Model, *Small Business Economics*, 31, pp.235-263 <https://doi.org/10.1007/s11187-008-9136-8> [REF2 in 2014]
- R2** D. Chisholm, S. Grey, I. Ritchie, **J. Levie**, J. Harris, C. Reeves (2014). *Increasing innovation-driven Entrepreneurship in Scotland through Collective Impact*, MIT Regional Entrepreneurship Acceleration Program (REAP) report, <https://bit.ly/3b5GWek>
- R3** **E. Shaw** (2006) Small firm networking: an insight into contents and motivating factors, *International Small Business Journal*, 24(1): 5-29 <https://doi.org/10.1177%2F0266242606059777>
- R4** **T. Pret**, **E. Shaw**, **S.D. Dodd** (2016) Painting the full picture: The conversion of economic, cultural, social and symbolic capital, *International Small Business Journal: Researching Entrepreneurship*, 34(8): 1004-1027 <https://doi.org/10.1177%2F0266242615595450>
- R5** R. Lee, **E. Shaw** (2016) Bourdieu's non-material forms of capital: implications for start-up policy, *Environment and Planning C: Government and Policy*, 34(8): 1734-1758 <https://doi.org/10.1177%2F0263774X16638850>
- R6** K.W. Middleton, A. Padilla-Meléndez, **N. Lockett**, C. Quesada-Pallarès, S. Jack (2020) The university as an entrepreneurial learning space: the role of socialized learning in developing entrepreneurial competence, *International Journal of Entrepreneurial Behavior & Research*, 26(5): 887-909 <http://doi.org/10.1108/IJEBR-04-2018-0263>

Notes on the quality of research: All articles and chapters have been peer-reviewed and are published in high-quality journals and books. The REAP report was also reviewed by stakeholders prior to publication. This research has been supported with competitively won funding totalling approximately GBP2,752,878. Key funders include the Economic and Social Research Council (e.g. Carter & Levie, ESRC Enterprise Centre, 01/01/13-31/01/18; GBP603,596) and UK Government (e.g. Levie, Department for Business, Energy and Industrial Strategy, Ambition and Growth, 01/09/14-31/12/15, GBP4,760).

4. Details of the impact

Through sustained engagement with policy makers and other key entrepreneurial bodies and institutions at Scottish and UK levels, since August 2013 research conducted by Strathclyde's Hunter Centre for Entrepreneurship (HCE) has:

- Informed Scottish Government policy and strengthened Scotland's entrepreneurial ecosystem by providing evidence-based recommendations for stakeholders; and
- Supported the growth of Scottish Small and Medium Size Enterprises (SMEs) through programmes designed to improve entrepreneurial leadership.

Informed Scottish Government policy and strengthened Scotland's entrepreneurial ecosystem

Research undertaken by Strathclyde's HCE informed the development of the Scottish Government's Scotland CAN DO (SCD) strategy (published November 2013) and subsequent action framework (published April 2014) [S1a]. Intended to drive business creation and growth through nurturing an entrepreneurial ecosystem which recognises the relationships between innovation and firm growth, SCD responds to the recommendation that an ecosystems management approach focused on deep engagement with stakeholders will be more effective than top down policy interventions [R2]. This influence on policy is acknowledged by the former Head of Entrepreneurship and Enterprise Support Policy for the Scottish Government (2012-19), who was heavily involved in the design and implementation of SCD:

'In set-up, scope and delivery, I collaborated extensively with academics from the Hunter Centre of Entrepreneurship (HCE), Strathclyde Business School. This research was essential in developing this ecosystem. I would note that the HCE is the 'go-to' academic institution to support the development of enterprise policy in Scotland and one of its most significant impacts is the contribution that HCE research has made to the Scotland CAN DO framework – the Scottish Government's core enterprise policy... the contribution of the HCE to the REAP project and its resulting published findings [R2] were fundamental for the Scottish Government and partners in developing the Scotland CAN DO agenda' [S1b].

Affirming this, the Chief Executive of the Entrepreneurial Scotland Foundation (ESF) notes, 'HCE's research and engagement with the entrepreneurial ecosystem and policy makers in Scotland has helped shaped Scottish government policy on entrepreneurship. HCE's REAP [R2] and GEM [R1] research created the foundations on which the Scottish Government developed and adopted the Scotland CAN DO framework' [S2a]. This is reflected in the CAN DO strategy itself, which cites Strathclyde's GEM research [S1a p.13]. As noted in an ESF briefing, which draws on Strathclyde's 2017 Global Entrepreneurship Development Index (GEDI) analysis commissioned by Scottish Enterprise, 'this approach – along with the combined efforts of the entrepreneurial community – has seen Scotland's support ecosystem ranked as the 5th most effective globally, up from 13th in 2013, and a doubling of the proportion of Scots actively trying to start a business' [S2b]. A key driver of this has been the Scottish EDGE fund, a competition aimed at identifying and supporting Scotland's entrepreneurial talent which 'embodies the CAN DO approach' [S3]. Now the biggest business funding competition in the UK, to date Scottish Edge has created 1858 jobs, supported 428 businesses, increased their turnover by GBP151,000,000 and leveraged GBP124,000,000 in additional investment [S4a]. According to an independent evaluation conducted in 2019, over the previous 5 years the competition generated gross value added (GVA) of GBP67,900,000 for the Scottish economy; this represents a return on investment of GBP7.30 to GBP8.50 in net additional GVA for every pound of public money spent on the fund [S4b].

As well as influencing government policy, Strathclyde has strengthened Scotland's entrepreneurial ecosystem by providing research-based advice to key stakeholders. Responding to the recommendation that impact analyses take account of the different ways in which 'growth' is

defined by entrepreneurs (R3-R5), an evaluation undertaken by HCE in 2015 for Archangels Investors Ltd (an Edinburgh-based angel syndicate investing in high-risk, early stage knowledge intensive companies with growth potential) employed a mixed-methods approach to capture the economic impact of the syndicate's activities as well as its commercial performance. As well as informing the company, this detailed evaluation supported the case for additional government funding [S5a]. Reflecting on the benefits, the Archangels' Managing Director observes:

'Thanks to methodology developed for the evaluation, we have improved the way we measure our impact and thus we are continuously enhancing our processes and activities with significant benefits for the SME ecosystem in Scotland. Secondly, as this research has become embedded in our practices, we have noticed a significant increase in the number of investors participating in the syndicate's activities and funding, as well as an increase in the number of SMEs being funded by our members' [S5b].

The report was also used by LINC Scotland, the national association for business angels in Scotland, to lobby the Scottish Government. According to LINC Scotland's Chief Executive:

'Research undertaken by the HCE, in particular the Archangels Impact Evaluation Report the launch of which the then Deputy First Minister John Swinney attended and spoke at, has helped make the case to the Scottish Government to replace the funding lost for the region since 2019 when the European Regional Development Fund stopped. This research demonstrated the significant return on investment accrued through investing in innovation-driven enterprises and we welcomed the announcement of the additional GBP100,000,000 to be provided by the Scottish Government through the Scottish Growth Scheme' [S6].

Supported growth of Scottish Small and Medium Size Enterprises (SMEs)

Alongside influencing policy and strengthening the ecosystem, Strathclyde's HCE has supported the growth of Scottish SMEs by shaping the design and delivery of a suite of leadership development programmes for entrepreneurs. Underpinned by HCE research evidencing entrepreneurial practices and competencies that help firms grow [R3-R6], these programmes have focused on the sustained growth of established ventures as well as a bespoke accelerator programme for early stage, high potential firms to help scale their propositions. In doing so, HCE has responded to the REAP recommendations [R2] that Scotland's EE should be improved through better networking linkages, improved skills for growth and effective leveraging of university expertise to achieve these and promote innovation-driven entrepreneurship.

Established firms

Through its design and delivery of the Growth Advantage Programme (GAP), Strathclyde's HCE has had a positive impact on the growth outcomes of established firms. Piloted in 2015 with funding from Santander, GAP is now in its fifth cohort and has supported 83 founders in further growing their ventures. Partnerships with Scottish Enterprise (SE), Highlands and Islands Enterprise (HIE) and Glasgow City Council (GCC) have informed recruitment to ensure that participating entrepreneurs are well-placed to benefit from the programme. This is confirmed by SE's Head of Scaling Services, who notes, *'given the impact that GAP has had on the growth of participating ventures, we frequently recommend GAP to clients with ambition and potential to grow and to grow at scale' [S7].*

Evidence of impact is provided by an evaluation of GAP undertaken in 2020 using a methodology approved by the ScaleUp Institute (SUI) and Arup. As outlined by the Chief Executive of SUI, this established that (relative to a control group of SMEs which has not participated in a growth programme) the average turnover and growth in employees of GAP participant firms was statistically significantly higher [S8]. Further, the first cohort of participants experienced turnover growth of 17.6% one year after starting GAP with their cumulative turnover growth after 4 years rising to 70.7% [S8]. This evaluation *'established that participants upon completion of the programme had gained: improved management skills; increased confidence in leadership and decision making; motivation to grow the business further; liberation from every day-to-day management activities in order to lead the business more effectively [and]; a supportive network of peers [S8].* Undertaken during the Covid-19 pandemic, it also *'observed that the GAP programme had impacted the participants' response to the pandemic and their ability to recover'*, with the key benefits being *'forward thinking, strategic thinking, capability to use business planning tools [and]*

access to support network' [S8]. As a direct result of this impact evaluation, GAP received the full endorsement of SUI making it one of only two UK entrepreneurial leadership development programmes informed by academic research and designed and delivered by a university.

Based on evidence of the benefits of GAP, Be the Business (an independent charity established in 2017 to boost the productivity of small businesses) invited Strathclyde's HCE to help develop and deliver its leadership programme. According to the charity's Chief Executive, through the work of Professors Lockett, Shaw and Anderson, HCE has *'been critical to the roll out of our 'Productivity through People Programme'; a mini-MBA for leaders of small businesses to develop their leadership and management capabilities'* [S9a]. To date, Strathclyde has engaged with 39 participants across two cohorts and recently helped with the rapid creation of our 'Rebuild Programme'; a resource for small businesses to support their recovery from the economic impact of the Covid-19 pandemic' [S9a]. Alongside this, HCE research also informed Be the Business's *'recommendation to the UK Government, leading to investment in the Small Business Leadership Programme and Peers Network in 2020'* [S9a]. As reported by the Department for Business, Energy and Industrial Strategy (BEIS), these *'2 schemes represent a GBP20,000,000 investment by BEIS...to enhance resilience and recovery from the impact of COVID-19 and enable SME's to develop their potential for future growth and productivity'* [S9b].

Early-stage, high potential firms

Using evidence showing that entrepreneurs at different stages require different types of leadership development and support [R3-R6], HCE worked with Glasgow City Council and Highlands and Islands Enterprise to design leadership development engagements for high potential innovation-driven entrepreneurs. Outlining the details of the GCC's programme, the Group Manager for Business Growth notes: *'Building on the impact of GAP on the growth of more established ventures, DRG have worked with HCE researchers, principally Professor Eleanor Shaw and Dr John Anderson to ask them to draw upon their research to design and deliver a similar programme but targeted at early-stage innovation driven enterprises. The resulting programme, iGAP@Tontine, was piloted in 2018 and our resulting impact evaluation of the programme evidenced that it was successful in providing participating entrepreneurs with access to a research-informed, peer to peer learning experience which specifically improved key objectives of the programme'* [S10].

5. Sources to corroborate the impact

- S1 a.** Scottish Government, Scotland CAN DO [Strategy](#) (2013) and [Action Framework](#) (2014).
b. Factual statement from Former Head of Entrepreneurship & Enterprise Support Policy, Scottish Government (2012-19), dated 22 February 2021.
- S2 a.** Factual statement from Chief Executive, The Entrepreneurial Scotland Foundation, dated 24 February 2021 **b.** Entrepreneurial Scotland Foundation, Scotland CAN DO – summary of journey, dated 24 February 2021.
- S3** Scottish Government, [Economic Action Plan 2019-20: Driving Entrepreneurship](#).
- S4 a.** Scottish Edge website, ['Who we are'](#) [accessed 14 March 2021] **b.** Scottish Edge (2020) [EKOS Impact Report Executive Summary](#), p.13.
- S5 a.** HCE (2015) [Archangels: Impact evaluation of activities, 1992-2015](#) **b.** Factual Statement from Managing Director, Archangels Investors Ltd, dated 5 March 2021.
- S6** Factual statement from Chief Executive, LINC Scotland, The Scottish Angel Capital Association, dated 19 February 2021.
- S7** Factual statement from Head of Scaling Services, Scottish Enterprise, dated 19 February 2021
- S8** Factual statement, Chief Executive, ScaleUp Institute, dated 2 March 2021.
- S9 a.** Factual statement from Chief Executive, Be the Business, dated 26 February 2021.
b. BEIS, ['Guidance: Small business support schemes: Small Business Leadership Programme and Peer Networks'](#), 3 August 2020.
- S10** Factual statement from Group Manager – Business Growth, Development and Regeneration Services, Glasgow City Council, dated 22 February 2021.