



Scottish Government
Riaghaltas na h-Alba

Pathways: A New Approach for Women in Entrepreneurship

An independent review commissioned by the
Scottish Government

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Foreword

The background of the page features a large, abstract geometric design. It consists of several overlapping circles in different shades of green. A prominent diagonal line splits the lower half of the page. The area above the diagonal is a solid dark green, while the area below is a lighter green with a large, semi-transparent circle overlapping it. A thin white horizontal line is located near the bottom of the page.

This report seeks to change how we think about the under-participation of women in entrepreneurship, to more rapidly and effectively move our society away from its current extreme gender imbalance in this field of endeavour.

The report presents concrete recommendations for how dramatically better participation rates can be achieved. These recommendations are not exhaustive; there is further work to be done if we are to fully complete the journey from extreme under-participation to balanced participation in entrepreneurship. But, taken together, we believe that these recommendations place us firmly on the right path towards that goal.

We make two requests of our readers. The first is to be open to considering the causality of under-participation from the perspective presented here, even though, for some readers, your first reaction may be to feel challenged by that perspective, or to reject it.

Most investigations into under-participation in entrepreneurship constrain themselves to the proximate causes of that under-participation, that is to say, the most immediate and visible causes. The present report goes beyond this level, following the chain of cause-and-effect through to its underlying root causes. We believe that to do otherwise is to render remedies to under-participation ineffectual and/or temporary. Therefore, our recommendations follow a portfolio-based approach, targeting both the most visible and the underlying causes of under-participation.

On such a journey, we inevitably confront an uneasy truth along the way, which is that our society is, to a degree, sexist, and not just at its extremes, and that this has a considerable bearing on participation levels in entrepreneurship, amongst many other fields. To make genuinely meaningful progress in addressing under-participation requires us to accept that reality, and its consequence.

This consequence is that most – and probably all - stakeholder groups within the entrepreneurial sector make decisions with some level of, at least, unconscious sexism operating upon their decision processes. Even partial acceptance of this assertion requires that we take a more active and profound policy position on the issue of under-participation than is normally adopted.

Doing so results in a different expression of solutions than the alternative, passive approach of assuming that society is inherently non-sexist, that the problem rests with the entrepreneurial capabilities of women themselves, and accordingly placing the burden of behavioural change upon them. It is certainly easier and less challenging to think this way, but it has not proven particularly effective in bringing about equal per-capita participation rates in entrepreneurship.

Our second request is to embrace, not only the recommendations themselves, but also the policy direction of travel expressed in the report. If the recommendations contained here are implemented but the direction lost, then we will collectively fall short of our goal of full participation in entrepreneurship.

Why should it matter anyway that entrepreneurial participation rates are so skewed away from women and other under-represented groups? In economic terms, the status-quo amounts to a continuous removal of entrepreneurial talent from the nation's economy, year after year, decade after decade, amplifying and normalising prejudices. It would surely be foolish to continue this way. In societal terms, that same status-quo denies opportunity to citizens on an industrial scale. We should not be comfortable with that state of affairs.

For these two reasons, the findings of this report are important. They are challenging to our sense of ourselves. But they also represent an opportunity for Scotland to take a leading position in addressing under-participation and, in doing so, to reap the consequent economic and societal benefits.

The report is not a lamentation; instead, most of its pages are dedicated to positive actions that can be practically implemented to put Scotland into that leadership position. Nor does the report seek to, or need to, divide. Its recommendations are intended to benefit all entrepreneurs regardless of gender, whilst ensuring that female entrepreneurs are also seen, that they are also heard, that they also have access to the same opportunities as men, and to the same degree.

Ana Stewart Mark Logan

About the Authors:



Ana Stewart

Ana is a successful tech entrepreneur. She founded i-design in 1995, and was CEO of the fintech business, listing it on the AIM exchange in 2007 and was awarded the Emerging Entrepreneur of the Year award by Entrepreneurial Scotland. In 2013, she joined the Executive Committee of NASDAQ listed ATM Services company Cardtronics when it acquired i-design. She joined the seed investment firm Eos in 2019, where she is an investment partner, with £30m of investments under management. She also holds several non-executive director positions including at pet wellness business Bella & Duke and the Scottish FA, and she is an active angel investor. Ana was appointed by Kate Forbes in 2022 to chair and lead the overall review leading to this report.



Mark Logan

Mark is the Chief Entrepreneurial Advisor to the Scottish Government, advising the government on policy development and implementation, and is the author of the *Scottish Technology Ecosystem Review*. He is also a professor of Computing Science in the University of Glasgow, a Senior Enterprise Fellow at University of Strathclyde, an investor and non-executive director. He has over 25 years' experience as a senior executive in the technology start-up and scale-up sector, including as COO of Skyscanner, one of Europe's most successful technology companies. In 2014, the Institute of Directors named him Director of the Year and in 2016 he won the UK Digital Masters award for Excellence in General Management. In 2019, he was conferred the Honorary Degree of Doctor of Science by the University of Glasgow and was made a Fellow of the Royal Society of Edinburgh in 2022.

We are indebted to the many contributors to this report, who gave freely of their time and expertise. We are particularly grateful to Judy Wagner, Jackie Waring and Gemma Hamilton, who each led major research streams as part of the overall research conducted for the report; and to John Cushing of mnAI and Eleanor Shaw, of the University of Strathclyde, who gave many hours of their time to the disaggregated data analysis of Scotland's entrepreneurial landscape.

Executive Summary



1 in 5

of Scotland's
entrepreneurs
are women

In March 2022, Ana Stewart was commissioned by Kate Forbes, Cabinet Secretary for Finance and the Economy, to chair an independent review into female entrepreneurship in Scotland. This report is the culmination of that review. Its recommendations are concerned with dramatically raising the participation level of women in the entrepreneurial economy, thereby increasing Scotland's entrepreneurial capacity and improving its economic performance.

The impetus for the review lies in the fact that, despite more than half of Scotland's population being female, currently one in five of Scotland's entrepreneurs are women, while start-ups founded by women in Scotland receive only 2% of overall investment capital¹. This is despite copious evidence that the entrepreneurial and related capabilities of women are equal to those of men². This state of affairs represents both an enormous loss of talent from Scotland's start-up economy and a denial of opportunity on, literally, an industrial scale. At the same time, it also presents a compelling case for Scotland to leverage this untapped pool of talent to drive and grow the entrepreneurial economy.

2%

of institutional
investment goes
to women-led
companies in
Scotland

In conducting this review, we are conscious that this participation rate has remained more or less constant over many decades. Despite various prior, high-calibre reports on the topic already having been produced and the many positive initiatives already in place, structural progress has been stubbornly slow.

1 See [Appendix A: mnAI Data Analysis of Scotland's Incorporations 2022](#)

2 See [The Authority Gap](#), Mary Ann Sieghart

This reality drove the method used to develop our recommendations in the present review. It is a novel and an ambitious approach, which extends its scope beyond the proximate causes of under-participation to also include their underlying root causes, in an effort to fundamentally transform female participation rates in entrepreneurship.

Such an approach enables a portfolio of interventions to be developed which, in combination, endeavour to address the full chain of cause-and-effect leading to today's current under-participation of women in Scotland's entrepreneurial ecosystem. Without such an approach, attempted solutions to under-participation are frequently undermined by deeper root-causes, which result in proximate causes being continuously re-established, such solutions consequently serving as a 'band-aid' rather than a cure.

The report was commissioned to consider the under-participation of women in entrepreneurship, but the recommendations have wider applicability. This is because many of the root-cause issues affecting entrepreneurial under-participation as regards gender also affect other under-represented groups. For example, from the research conducted for this report, it was clear that some of the factors that undermine the participation of women in entrepreneurship also apply to demographics such as recent migrant groups, rural entrepreneurs and those located within disadvantaged urban areas, and that they are further amplified at their intersection. Accordingly, it is likely that, in some instances, the recommendations made in this report will also have utility in raising participation rates within these other demographics. However, it is beyond the scope of this report to fully explore all under-participating demographics, and we recommend that follow-on work is performed in these areas.

For this review, we conducted over 200 direct interviews with organisations and individuals. To further inform and stimulate our thinking, we surveyed wider entrepreneurial sentiment through roundtable events, focus-groups and online surveys, and we cross-referenced our findings with analogous profiles from comparable economies.

In common with many other economies, there is a long-established absence of gender-disaggregated data in Scotland's entrepreneurial domain which greatly obscures the measurability of applied improvement initiatives. We addressed this problem by working with the data specialist mnAI³ and the University of Strathclyde to perform a gender-disaggregated analysis of Scotland's current start-up ecosystem, in a format suitable for on-going benchmarking.

3 See <https://www.mnai.tech/>

Using this blended research approach, we have identified five major proximate causes of under-participation in entrepreneurialism. These causes are listed below.

For each of the causes below, we have then analysed the full chain of cause-and-effect associated with these areas. This analysis, and the recommendations resulting from them, constitute the majority of the report.

- **Relative to men, women are often more logistically constrained, making participation in entrepreneurship difficult.** Society commonly assigns the primary-carer role and the home-manager role to women, and then doesn't provide sufficient balancing support. This state of affairs isn't compatible with the intensive demands of an entrepreneurial career-path.
- **Women frequently have a sense of “not belonging” in entrepreneurship, which affects their confidence and self-belief.** The sparsity of women founders in entrepreneurship establishes a vicious circle leading others to conclude that entrepreneurship isn't a natural environment for them, which then further drives this sparsity.
- **Formally-defined pathways into entrepreneurship are unclear, while informal pathways and networks underserve women.** Developing an understanding of how to become involved in entrepreneurship and how to successfully move through its various stages largely relies on informal networks which are heavily orientated towards men. Formal support is correspondingly less well organized, disproportionately affecting women and other under represented groups.
- **General education and normalisation of entrepreneurship as a valid career path is largely not present in the education system.** This point naturally affects all demographics, but its impact is greater for women in the presence of the other proximate causes listed here.
- **Women receive far less investment than men at all stages of the entrepreneurial journey from venture capital firms and related sources.** For example, of the companies that received external investment in 2022, 12% were female-led and 73% were male-led. Overall, there was a 6:1 ratio of male-founded to female-founded companies that received investment. Over the past five years only 2% of institutional investment went to female-led businesses.⁴

4 See [Appendix A](#): mnAI Data Analysis of Scotland's Incorporations 2022

The review conducts a detailed analysis of each of these areas. It then presents a blended portfolio of interventions, combining those that provide near-term improvements in participation levels with others designed to permanently improve long-term participation rates in the entrepreneurial ecosystem.

It is important that the full portfolio of interventions identified in this report be implemented in its entirety. This is because the interventions identified are mutually reinforcing. Implementing one or two isolated recommendations yields incremental outcomes only, whereas what is actually required – and what is achievable – is a transformation in participation levels. Indeed, we assert that the recommendations developed for this review have the potential to make Scotland a leading nation in increasing entrepreneurial participation. And they also have the potential to amplify the effectiveness of initiatives already in place.

In all, we present 31 specific and directly actionable recommendations. The major recommendations can be categorised and summarised as follows:

→ **Bringing start-up incubation, education and support to where primary carers are.**

In current society, the primary carer role usually falls to women.⁵ The significant additional burden on primary carers means that, for many, they are time-poor and location-constrained. The home, workplace, school, nursery, shopping centre, surgery, etc., need to be close enough to each other to be accessible within the time constraints in which primary carers typically operate. Therefore, all are generally located at the same radial distance from urban centres, for example. To attempt to deviate much from this radial journey is to considerably exacerbate the time constraint, reducing available working time and adding to the mental burden through increased time-driven anxiety. These factors act to reduce the accessibility of start-up incubation and entrepreneurial education services for primary carers.

To address the geographical and time constraints acting upon entrepreneurs in primary carer and home manager roles, we recommend that the Pre-Scaler network concept as defined in *Scotland's National Strategy for Economic Transformation*⁶ be extended as follows: firstly, Pre-Scalers should be renamed to Pre-Start centres, which more accurately reflects the stage of businesses accessing their services. Secondly, the Pre-starts network should also operate as a mobile Pop-up Pre-starts (or PUPS) model, travelling to the places near to where people in primary carer roles are most often located.

5 See [Scotgov National Care Service - adult social care: equality evidence review, June 2022](#)

6 See <https://www.gov.scot/publications/scotlands-national-strategy-economic-transformation/>

Such a model maximises target audience reach, cost-effectiveness and the use of scarce mentoring resources. It significantly increases access for women and other under-represented groups. Although we are analysing this focal area from the perspective of women (because women are most often subject to its effects), our proposals naturally should provide the same potential for everyone engaged in primary carer and home manager roles.

Pop-up locations must be where primary carers already are, and could, for example, utilise empty retail spaces, and similar. The current ecosystem already boasts good examples of this approach, though in an isolated and siloed fashion.

Pop-ups and Pre-Start centres provide a start-up incubation space, business and related services, access to founder education resources, business mentors, technical expertise, including digital marketing and web skills and a peer-learning and community environment. They also provide access to resources such as a 3D printing capability.

A Pop-Up would remain at a given location for anything from a few days to a month, depending on demand and other factors, and it would return to that location frequently and predictably.

The model also has applicability well beyond the needs of primary carers. It makes support available to all groups with time and/or location constraints. And the mobility and coverage offered by the Pop-up model would contribute to supporting entrepreneurial development in rural areas as well as in disadvantaged urban and suburban areas.

To further address the time constraints and the additional financial burden acting upon entrepreneurs in primary carer and home manager roles, the Pre-starts network (including PUPS) should provide up to one full year of financial assistance towards extended childcare costs (i.e., from 3:00pm-6:00pm, weekdays) for full members of the network. Mechanisms to manage costs predictably are presented in the body of this report.

The overall effect of the above recommendations is to establish within Scotland an integrated nationwide entrepreneurial incubation, education and support platform, and one that is properly adapted to the needs of under-represented demographics. To ensure that we stay true to these goals during implementation and beyond, we recommend that the design and development of this platform includes regular input and consultation with a panel of founders from under-represented demographics.

→ **Supporting under-represented founders through the Concept and Journey Funds.**

Scotland should create two new types of business support grant and tightly integrate them with the enhanced incubation services described above.

A critical drop off in the number of female entrepreneurs occurs from the nascent concept stage through the pre-scaling and scaling start-up stages. This is evidenced in the extremely low number of women-led start-ups receiving funding from angel syndicates and other finance sources. Even when turning to so-called friends-and-family funding, only 14% of the businesses receiving this funding are female-led compared with 65% male-led⁷. This situation is exacerbated by existing background factors such as the current phenomenon of angel capital migrating from earlier to relatively later stage investments, and the on-going lack of availability of traditional debt funding facilities to early stage, high-risk start-ups.

The Concept Fund is a micro-funding scheme available to participants within the Pre-starts network, including PUPS (i.e. the pop-up variant). It is intended to encourage and support very early-stage founders in developing and testing nascent business ideas and concepts. The Concept Fund would provide small grants of up to £1000 for this purpose to members of the Pre-Starts network, with minimum associated bureaucracy. The Fund would be managed by the central operator of the Pre-starts network. Founders could make multiple applications to the fund during the course of developing and testing a concept.

The proposed *Journey Fund* is designed to support under-represented founders whose business ideas are more developed. Some of these founders may have 'graduated' from the Concept Fund stage. The Journey Fund would make grants to qualifying founders in these under-represented demographics of up to £50,000. The intention is to provide a greater runway for product concept development and business growth readiness before requiring access to private funding.⁸ We expect that this fund would be operated by Scotland's enterprise agencies in partnership with the private investment sector.⁹ and would act as a springboard for promising early-stage start-ups as their business moves into the more traditional investment ecosystem.

These two funds, working in tandem, will increase female entrepreneurial participation. This, in turn, will increase the pipeline of founders successfully scaling their businesses and, consequently, will accelerate their participation rates across all later development stages.

7 See [Appendix A: mnAI Data Analysis of Scotland's Incorporations 2022](#)

8 See <https://www.investni.com/support-for-business/proof-of-concept-techstart>

9 A similar partnership model was successfully deployed in 2020, during the Covid crisis.

→ **Encouraging better representation during “selection events” within the entrepreneurial journey**

One of the challenges faced by female founders occurs when facing “selection events” on their entrepreneurial journey. For example, selection for investment, or for entry into an accelerator programme, incubator, etc. There is a well-established human tendency to bias in favour of selecting those people who are most like us. Investment organisations and selection panels, reflecting wider industrial demographics, tend to be heavily male-dominated, (and strongly skewed towards the country’s majority ethnicity¹⁰). Therefore, the following recommendations use government-funding participation to encourage better representation within both the selected *and* the selectors, at these critical points.

Government and enterprise agency funding to programmes operated by Ecosystem Builders¹¹, such as accelerator and incubation programmes, founder development programmes, scale-up programmes, business networks etc., should become formally contingent on both the selected participants and selection panels themselves including minimum levels of female participation.

Funding to programmes operated by Ecosystem Builders should also be formally contingent on the organisation having in place robust processes for providing detailed, transparent feedback to founders rejected from participation as a result of a selection process.

The Scottish Government directly, or through its various agencies, frequently invests alongside private investment organisations, such as venture capital (VC) firms and investment syndicates. We recommend that co-investment formally becomes contingent on participating VCs having at least a minimum threshold level of women in senior-investment roles, while allowing for an adaptation period. The same consideration should apply to fund managers where the Scottish Government invests as a limited partner. These thresholds, which are subject to a grace period and other terms, are discussed in more detail in the body of this report.

Where the Scottish National Investment Bank acts as a Limited Partner to “cornerstone” a fund, such participation should be contingent on the fund manager operating to the same requirement.

10 See https://www.bvca.co.uk/Portals/0/Documents/Research/2019%20Reports/UK_VC_and_Female_Founders_Report_British_Business_Bank.pdf

11 See glossary.

Co-investment models operated by Scotland's enterprise agencies should routinely invest a greater percentage amount in start-ups with at least one female founder. We discuss possible mechanisms for this approach in the body of the report.

Taken together, these recommendations, although potentially controversial, are intended to finally impel progress towards an investment environment more orientated towards investing in diverse demographics, by encouraging diversity within the selection mechanisms themselves.

→ **Integrating entrepreneurial education within Scotland's education system**

Given that entrepreneurialism is a critically important discipline in the development of the nation's economy, it is imperative that we normalise the activity within society and better equip our entrepreneurs for success. This is especially important for those in under-represented groups who are otherwise somewhat excluded from the informal mechanisms that support and encourage entrepreneurship. But, of course, improvements in this area would significantly benefit all demographics.

It's important to the success of initiatives in this area that more emphasis is generally placed on experiential learning achievements rather than simply grade-attainment, with greater credit accorded to extra-curricular and vocational activities than is currently the case.

Accordingly, Scotland should integrate programmes that expose young people to entrepreneurial experiences and techniques into its school and further education system. Young Enterprise Scotland¹² (YES) is already active in some of Scotland's schools, providing pupils with exposure to entrepreneurial ideas through various programmes. Scotland should build on this foundation, expanding programmes such as these to all secondary schools in Scotland.

By Secondary 3, optional project-based activities, such as experiential entrepreneurship programmes are squeezed by the pressure for pupils to acquire formal qualifications such as National 5 and Scottish Higher awards.

Therefore, we also recommend that the syllabuses of most subjects are adjusted to place greater emphasis on entrepreneurial technique than is currently the case and that this is manifest through experiential, project-based work. These changes should then be reflected in the attainment qualifications of school leavers and subsequently recognised by employers and further education organisations. For example, this change programme could start with Business Studies initially, for learning and feedback purposes, then proceed through science and engineering subjects, etc.

12 See <https://yes.org.uk/>

Further developing this experiential approach, a Scottish Start-up Summer School should be instigated, providing the opportunity for senior school students to gain exposure to the start-up experience. Each participating pupil start-up team would receive a small bursary to support their idea, with the best start-up ideas, and/or execution of those ideas, being publicly recognised at the end of the programme.

We emphasise the need for the Summer School to be genuinely inclusive, and available to all pupils, regardless of race, gender or family financial situation. One consequence of this goal is that consideration must be given to ensuring that support is provided such that pupils from disadvantaged backgrounds are able, in practice, to participate.

The Entrepreneurial Campus definition, first proposed in the *Scottish Technology Ecosystem Review*¹³ and developed further in *Scotland's National Strategy for Economic Transformation*¹⁴ should be fully implemented without delay. Amongst other goals, this ensures that students across a wide variety of disciplines are exposed to entrepreneurialism and have an opportunity to develop an entrepreneurial skillset.

→ **Establishing Scotland as a leading nation in Femtech**

Femtech is a term that refers to diagnostic tools, products, services, wearables and software that use technology to address women's health issues. Femtech companies also provide products that encompass general health conditions that affect more women than men or affect them differently than they affect men, such as osteoporosis and heart disease.

We recommend that Scotland acts strategically to establish the country as a global centre for Femtech start-ups. Femtech start-ups already include both female and male founders, with a skew towards the former. The fund would support start-ups with high growth potential. Therefore, such an approach, if successful, would not only enable Scotland to exploit a market with vast potential - an estimated \$50bn globally¹⁵ - it would also help to normalise investment in female founders. Moreover, this focal area continues Scotland's proud heritage as a leader in life sciences and healthcare innovation. With Femtech, this leadership takes the form of recognising that the vast majority of existing medical research and development activity significantly under-focuses on women's health¹⁶.

13 See <https://www.gov.scot/publications/scottish-technology-ecosystem-review/>

14 See <https://www.gov.scot/publications/scotlands-national-strategy-economic-transformation/>

15 See <https://www.gendereconomy.org/the-rise-of-femtech/>

16 See Invisible Women by Caroline Criado Perez

Accordingly, the government should leverage ecosystem assets under its influence in a coordinated fashion to encourage Femtech start-ups to locate in the country, and to encourage investment in them.

For example, SNIB and Scotland's enterprise agencies should work together to cornerstone a Femtech fund, the Tech Scaler network should establish a Femtech specialisation within the network, and the Scottish Technology Ecosystem Fund should allocate a portion of its budget to supporting Femtech events.

→ Addressing the underlying sexism at the heart of under-participation

At the root of under-participation in entrepreneurship and many other fields is a continuous process of role stereotyping within our society. Our society has a degree of sexism embedded within it, and these prejudices are transferred from generation to generation. They manifest in the ecosystem as pay gaps,¹⁷ digital gaps,¹⁸ data gaps,¹⁹ chore gaps²⁰ and authority gaps.²¹ These biases influence attitudes towards suitability for entrepreneurship amongst stakeholders within the entrepreneurial ecosystem. Where an ecosystem is populated predominantly by one demographic it follows that bias will exist both unconsciously and consciously. Scotland needs to face this reality more actively, and more intensively address it.

For example, too often we are guilty of *lazy sexism* or *lazy racism*, where we witness conscious or unconscious sexism or racism but fail to “call it out”, relying on members of the affected demographic to do so instead. Or we default to all-male (often from a specific background) or all-white participants during selection processes because it just feels easier and quicker than seeking out greater diversity²².

We must move away from a position of assuming that under-participation is the fault of the under-represented, towards the reality that under-participation is the fault of society. We should also embrace the benefits of parity and meritocracy, which, for example are illustrated in diverse executive leadership teams consistently outperforming their less diverse peers.²³

17 See <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/bulletins/genderpaygapintheuk/2022#:~:text=Among%20full%2Dtime%20employees%20the,at%20the%20longer%2Dterm%20trend.>

18 See <https://www.oecd.org/digital/bridging-the-digital-gender-divide.pdf>

19 See Invisible Women, Caroline Criado Perez

20 See

<https://www.theguardian.com/inequality/2018/feb/17/dirty-secret-why-housework-gender-gap>

21 See The Authority Gap, Mary Ann Sieghart

22 See <https://theconversation.com/whats-wrong-with-manels-and-what-can-we-do-about-them-148068>

23 See Diversity wins: How inclusion matters, McKinsey Report, May 2020 Diversity

All university and college courses should include mandatory, credit-bearing diversity and equality education as part of the first-year syllabus. This shouldn't be the tick-box type, but, rather, should be tailored appropriately to illuminate each applicable subject's under-participation origins and on-going exclusionary factors, in addition to more general diversity and equality education.²⁴ It should include peer-to-peer discussion in addition to instructor-led teaching.

Diversity and equality education should also be included in foundational courses taught at secondary school level, in a similar fashion.

All organisations receiving financial support from the government for contributing services to the entrepreneurial ecosystem should demonstrate that a programme is in place to provide all staff with mandatory diversity and equality training. Examples include incubators, accelerators, conferences, scale-up programmes.

Attempting to change the role stereotypes associated with women is a useless endeavour if we don't, in parallel, change those stereotypes that attach to men. Prospective female entrepreneurs will make little progress if their male partners must meanwhile adhere to the primary-breadwinner stereotype inside their workplaces, for fear of otherwise being penalised in their careers.

In this respect, it is therefore imperative that employers also adjust their attitudes. Although the right to shared parental leave was introduced in the UK several years ago, the vast majority of men still take only a fraction of their entitlement.²⁵ Men are often regarded as "less committed to the business" if they take on a greater proportion of the carer role or if they take more than a couple of weeks of parental leave. This perpetuates both the male and female stereotypes.

We propose that a *Fair Society Champion* accreditation is introduced in Scotland, awarded to those employers that actively encourage a fairer society²⁶. For example, where an employer actively encourages men to take up their full parental leave, actively encourages men as well as women to take on carer responsibilities, provides flexibility with regards to working hours pattern and location, regularly educates employees with regard to the home manager and primary carer burden, instigates processes and training to reduce the likelihood that carers, including men, are penalised or regarded as "not committed".

24 See [Gender Equality In Education, Scottish Youth Parliament Research, Published October 2022](#)

25 See <https://www.bbc.com/worklife/article/20210712-paternity-leave-the-hidden-barriers-keeping-men-at-work>

26 This accreditation would operate as part of Scotland's Fair Work Convention. See <https://www.fairworkconvention.scot/>

To encourage uptake of this accreditation, suppliers to government would be required to hold this accreditation or be working towards doing so in a defined time-period, to continue working on government-awarded contracts and to receive grant support. This is consistent with the approach taken as regards the other principles of the Fair Work Framework.

We can think of sexism as a spectrum, along which various degrees of severity are located, from relatively mild to more extreme. The presence of any one type of sexism acts to reinforce and legitimise the others. To meaningfully reduce sexism, we must therefore strategically act upon all three types, and especially upon extreme sexism, or misogyny. For example, women are 27 *times* more likely than men to be harassed online, a third of such content being threats of violence.²⁷ It seems obvious that a society that tolerates such aggressive, hate-filled posts on social media directed at women, simply because they are women, will tolerate less-extreme forms of the practice too.

There is currently no existing law in Scotland directed against misogyny. However, the Misogyny and Criminal Justice Working Group published the excellent report [Misogyny: a human rights issue in March 2022](#)²⁸. At the time of writing, these recommendations have encouragingly been accepted in principle by the Scottish Government, but not yet implemented. A timetable for completion of the detailed review of these recommendations, and their implementation, should be published by the Scottish Government.

→ Clarifying Access Pathways into Entrepreneurship

Existing pathways into and within entrepreneurship largely operate on an informal, network-based support model, with largely male-dominated informal networks. It can be difficult for under-represented groups to access these networks. Because the entrepreneurial ecosystem relies on these informal networks, alternative, formalised access pathways for women are under-developed, under-coordinated and under-scaled.

The early-stage start-up space is a cluttered environment, consisting of literally hundreds of organisations, including support groups, government agencies, accelerator hubs, mentoring groups, training programmes, incubators, members associations, chambers of commerce, etc.

27 https://www.womenlobby.org/IMG/pdf/hernetherights_resource_pack_2017_web_version.pdf
The Ripple Effect Online Abuse During COVID, Sept-2020

28 See <https://www.gov.scot/publications/misogyny-human-rights-issue/>

The combination of their sheer number, the informality of their operating models, their geographical location and the degree of overlap between them is confusing and often intimidating for entrepreneurs, who report finding it difficult to parse these options or to navigate the entrepreneurial pathways available to them.

Therefore, a centralised resource should be created, with clearly defined pathways for entrepreneurs at various stages of their individual journeys, in each case making clear all of the relevant follow-on support and mentoring options available to them. Of course, the value of such a resource would not be limited only to women – all participating demographics would benefit. However, given that the present situation is particularly unsuited to women, this demographic should be prioritised in the development of the resource. We'll refer to this resource with the working title of *Entrepreneurial Pathfinder*.

We envision the Entrepreneurial Pathfinder being delivered as a digital platform that can properly locate entrepreneurs at the right point within the support map, based on information supplied by the user. In essence, each entrepreneur is presented with their own journey based on their current circumstances, connecting the dots and creating a “golden-thread” through the potential support options available to them, whether it be nascent, start-up or scale-up stage.

Entrepreneurial Pathfinder must contain all credible support resources, both public and privately owned. To ensure that this is the case, it must be developed and maintained by an impartial entity, with digital expertise at its core. Such an organisation could, for example, be selected through a tender process, with impartiality a demonstrable condition of contract²⁹. Otherwise, the tendency to bias towards an organisation's own offerings and to deprecate others will, over time, be too great.

The responsible organisation for Entrepreneurial Pathfinder must actively maintain the currency and completeness of entrepreneurial support information within the service from the nascent start-up stage to high growth potential stage. It will also deliver a light touch governance framework within which resource suppliers operate. This solution would not only provide customised, relevant guidance to individual founders, it should also eventually form part of a wider national start-up ecosystem digital platform. Many countries already operate such a platform, bi-directionally connecting all start-ups in the country with the investment organisations and grant bodies etc.³⁰

29 See https://discovery.dundee.ac.uk/ws/portalfiles/portal/67137325/SB_21_73.pdf

30 <https://finder.startupnationcentral.org/>
https://www.scaleup.nz/?utm_source=callaghaninnovation.govt.nz&utm_medium=scaleup%20page&utm_campaign=callaghan%20innovation%20website

We also recommend that public funding for entrepreneurial support organisations should be contingent on active engagement with the Entrepreneurial Pathfinder operating team, ensuring that information remains current.

→ **Establishing a comprehensive database for tracking progress towards full representation in entrepreneurship**

The measurement and data sets employed in Scotland's entrepreneurial ecosystem are neither accurate enough nor sophisticated enough to properly inform entrepreneurial participation rates and to support improvement strategies. With this in mind we recommend that a gender- and ethnicity-disaggregated common database be made accessible to all stakeholders within the entrepreneurial ecosystem. The database should combine both public and private sector entrepreneurship/start-up statistics and be capable of disaggregating data, at least by gender and ethnicity dimensions.

The government should make it compulsory that any applicable entrepreneurial organisations receiving financial assistance and those in co-participation arrangements involving public money should make their relevant data available to this platform in an anonymised fashion. The government should publish an annual analysis of entrepreneurship participation trends, disaggregated by gender and ethnicity dimensions. This process should be integrated into the government's Wellbeing Economy Monitor reporting cycle

The remainder of this report is structured as follows. We recommend reading the report in the order presented, in order to fully understand the rationale of the report's recommendations.

[Chapter 2](#) explains the approach we have taken to diagnosing the causes of under-participation, while [Chapter 3](#) summarises the proximate causes of under-participation resulting from that analysis. [Chapters 4-9](#) then expand the cause-and-effect chains for each of these proximate causes and discuss solutions for them. [Chapter 10](#) distils these proposed solutions into a concrete set of directly implementable recommendations.

Appendices

A summary of our research approach and data is provided in [Appendix A](#) while [Appendix B](#) presents the full map of cause-and-effect relationships discussed in the report, for reference. A glossary of terms used in this document is provided in [Appendix C](#). Our fellow contributors to the creation of this report are listed in [Appendix D](#). [Appendix E](#) provides an extract from the Entrepreneurial Voice survey conducted as part of the research work supporting the report. Finally, a list of all references is provided in [Appendix F](#).

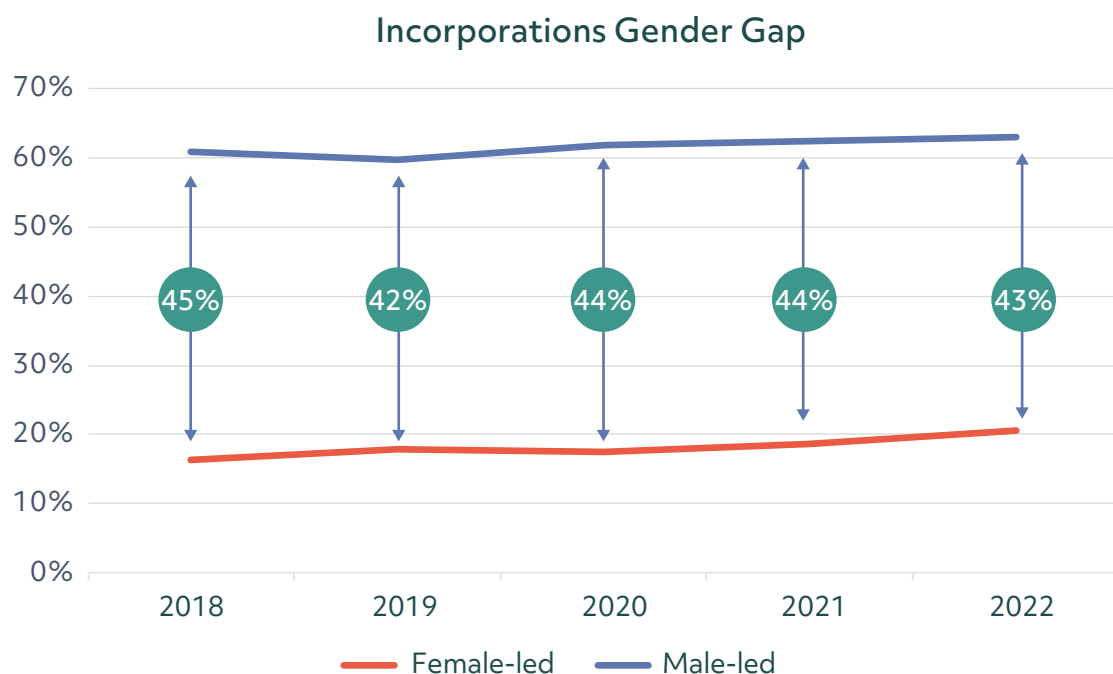
02.

Approach and Rationale



Before commencing our analysis into imbalances in entrepreneurship participation, we'll first explain the approach that we have adopted to conduct that analysis. We explore why these imbalances have persisted over many years, despite multiple prior attempts to address them. From this discussion, we highlight four pitfalls that help to illuminate the reasons why such prior efforts have not had the intended scale of impact. Finally, we define an approach intended to avoid these pitfalls and, therefore, to result in more impactful recommendations.

Severe imbalances in gender representation have persisted over the long term across many domains, and not least in the field of entrepreneurial activity. The chart below illustrates the recent and current situation. During the worst of the Covid-19 crisis, this gender gap even increased slightly.³¹



Source mnAI Data Analysis for Scotland's Incorporations, 2022

These imbalances exist despite numerous endeavours intended to address them. Such progress that is made remains incremental in nature, while the general imbalances still persist at scale and to largely the same degree of severity as before.

31 See <https://discovery.dundee.ac.uk/en/publications/the-impact-of-covid-19-on-scotlands-women-entrepreneurs>

“

Whilst there might be modest growth in the numbers of women led firms being incorporated in recent years this, I do not think, will translate into transformational change as the structural and system-wide inhibitors that continue to exist in the labour market are absolutely mirrored, and possibly amplified in the field of entrepreneurship.”

Professor Eleanor Shaw, Strathclyde University

To make interventions that sufficiently improve gender representation in entrepreneurship and related fields, we must first understand why we haven't made meaningful progress to date, despite those prior efforts. We can then adapt our approach as a result of that understanding. Otherwise, the same approach will yield the same, underwhelming results.

Below, we have identified four pitfalls often present in approaches intended to improve participation rates. These typically act together to inadvertently compromise the ambition of recommended actions:

- Normalisation of extremes and the influence of anchoring effects
- Focussing only on proximate causes instead of root causes
- Adding to broken systems instead of fixing them
- Favouring tokenism over scaled solutions

We next discuss each of these pitfalls in turn. From that discussion, we'll distil a set of guiding principles and a recommendations framework to assist us in avoiding them.

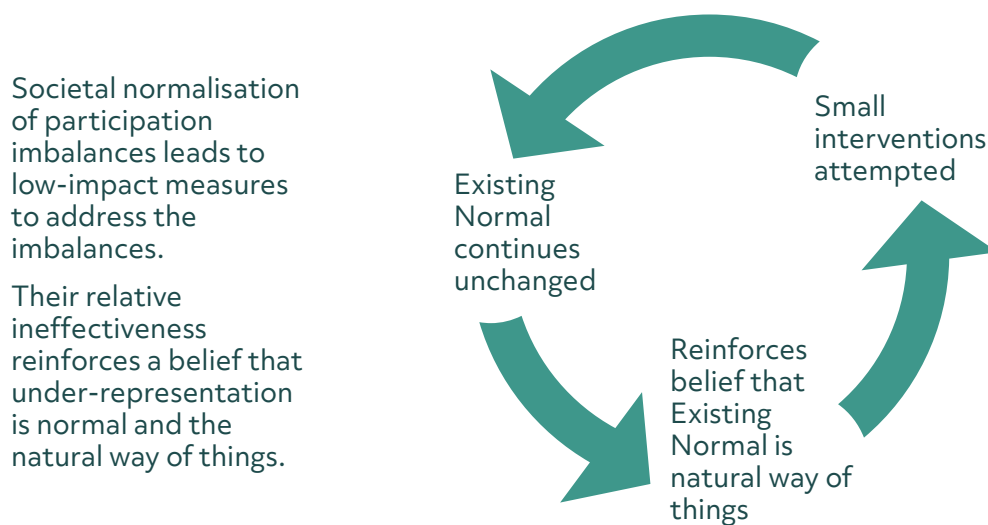
Normalisation of extremes and the influence of anchoring effects

Through ongoing societal conditioning and reinforcement mechanisms, there exists a strong tendency to normalise participation imbalances and to become psychologically anchored by them when discussing improvements.

A consequence of this tendency is to reduce the boldness and ambition of endeavours aimed at improving under-participation within a given demographic. After all, if society considers a particular state of affairs to be “normal”, it is unlikely to invest the energy, money and time required to significantly alter that normal. Instead, relatively minor measures are prescribed, which pass the twin tests of being uncontroversial and easy to implement.

But such an approach acts only to *strengthen* the existing normalisation process. Because such measures result in only limited or no change to the target imbalances, they reinforce the mistaken belief that the status-quo is the *natural way of things* (otherwise, the argument goes, participation rates would have adjusted in response to those interventions).

Thus, a reinforcing loop comes into effect, which serves to harden existing attitudes against change:



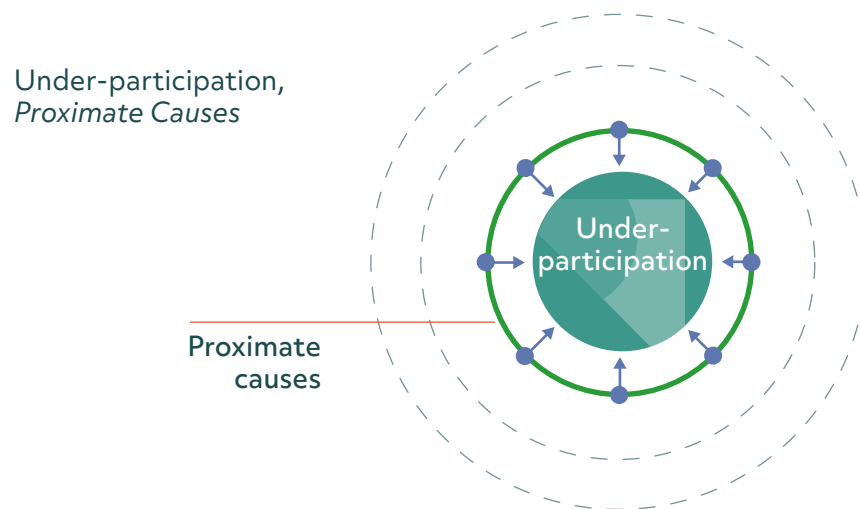
We must consciously break out of this reinforcing loop when designing interventions, and the will to do so may lead to very different solutions than would otherwise have emerged. By analogy, consider the different responses needed to meet a goal of achieving either a 10% improvement or a 10X improvement in some system. A completely different approach is required in each case.

This is the philosophy that we attempt to adopt in this report. At policy level, our goal is to make participation rates 10X better, not 10% better. The starting point for achieving that goal is to reset our anchoring point. Instead of asking how we can raise participation rates from the current level by some degree, we instead ask: what prevents *equal* per-capita participation levels?

Focussing only on Proximate Causes instead of Root Causes

Under-participation of women in entrepreneurship and other fields is not only a problem in itself, but also a symptom of other, deeper problems. These deeper problems must also be exposed and addressed if we are to meaningfully rebalance participation rates.

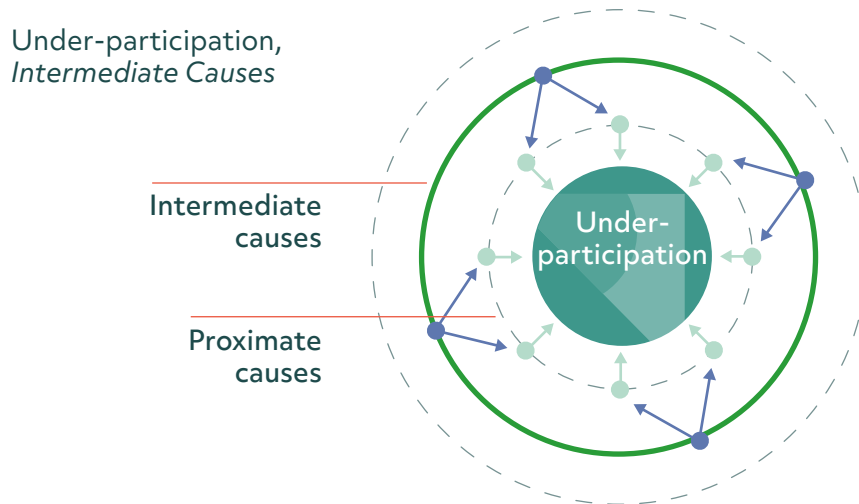
When considering under-participation in a given field, it is common to focus largely on finding solutions to the *proximate causes* of the problem. But this is only effective if we *also* act upon the problem's deeper, underlying causes.



Proximate causes are those that most immediately and directly lead to a visible manifestation of under-participation. Focussing exclusively on proximate causes naturally tends to result in solutions being identified and directly applied to those proximate causes. But the deeper, background causes remain. Left unaddressed, these deeper causes will continuously act to reinstate the proximate causes and, hence, their consequential symptoms (extreme under-participation rates).

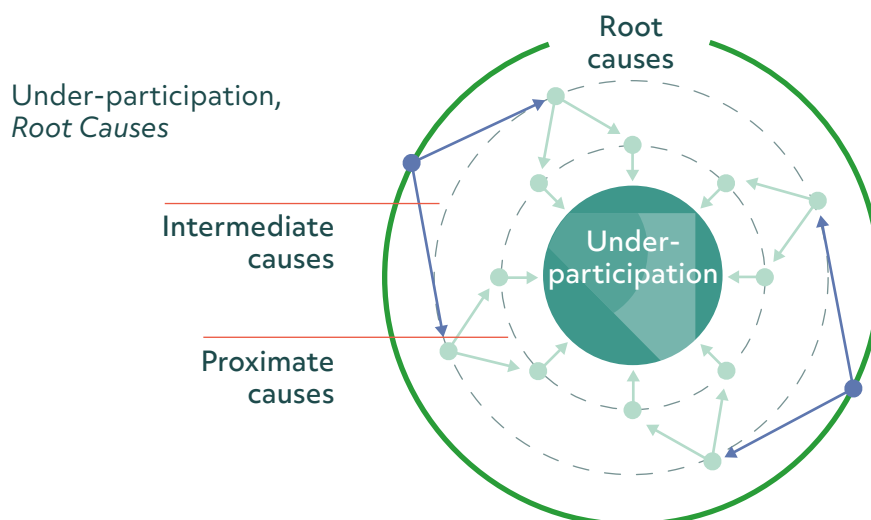
For example, one of the proximate causes of women under-participating in certain kinds of entrepreneurship is that female founders receive considerably less funding per-capita than men. One solution to that proximate cause is therefore to create a special fund that invests only in women founders. While such an intervention is useful as a *mitigation*, it is not in itself a *sufficient* solution; on its own, it is neither scalable (i.e., it won't fully mitigate the wider industry's under-investment in women) nor sustainable over the long term (i.e., the deeper causes will persist at scale and will regularly act to re-assert the proximate cause, for example, once the funding for this solution is eventually wound down).

Mitigating proximate causes, as in the example above, is certainly one of the tools available to us. But, if we are to make scaled and *permanent* progress on any given type of symptomatic under-participation, we must also go deeper, recognizing that proximate causes themselves have causes. In this report, we refer to these as *intermediate causes*:



Such intermediate causes will work to undermine solutions that we apply directly to the proximate causes discussed above. And they will constrain those solutions from spontaneously scaling. It's clear that we must therefore also address these intermediate causes, if we are to permanently address the proximate causes and, ultimately, under-participation itself.

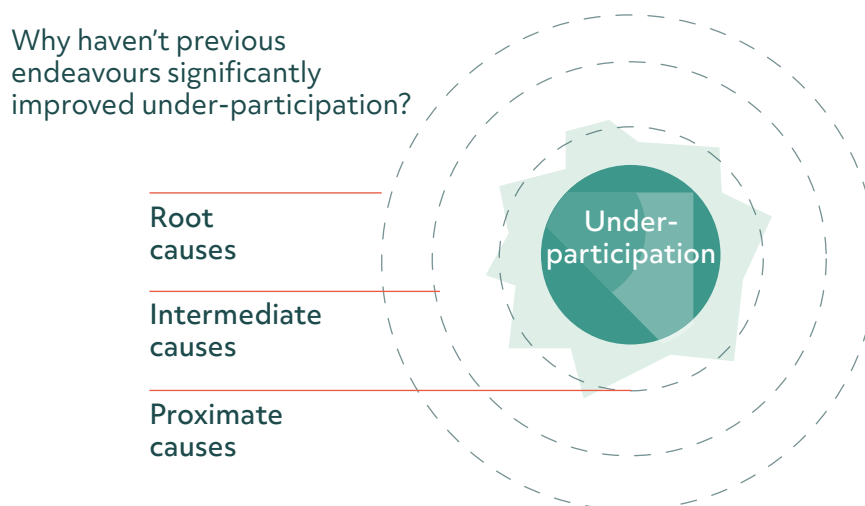
We can do this in two ways. As before, we can *mitigate* the intermediate causes with solutions designed to directly address them, and we can move one step further and acknowledge that, often, many intermediate causes themselves exist as result of a set of *root causes*:



In the context of our report, these root causes are often expressed in terms of the societal beliefs, norms, attitudes and prejudices that continuously re-instate the intermediate causes. These, in turn, then act to constrain and undermine the solutions being applied directly to proximate causes.

To bring about lasting and significant change, it is critically important that, whatever else we do, we must also address these root causes, even as we mitigate their consequential effects described above.

The above analysis helps to illuminate why most initiatives don't bring about lasting and significant change to the problem of under-participation. Their remit often focus on solutions to largely proximate causes. This is understandable - proximate causes are both more identifiable and generally more convenient to address than their underlying causes. And they may temporarily return visible results more quickly, albeit in only limited ways, which can be politically attractive.



But focussing *only* on the proximate causes of under-participation contributes to the normalisation and anchoring issues discussed earlier and has a *worse than neutral effect* on the issue. Proximate solutions tend to be limited in both scale and scope and are undermined by deeper causal effects. Their consequent relative ineffectiveness contributes to the normalisation of under-participation described [earlier](#).

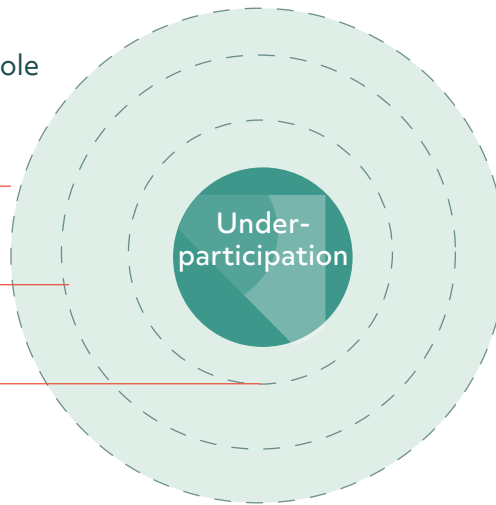
Of course, everyone likes quick results, which makes solutions to proximate causes attractive. But most people also like lasting, impactful and scaled outcomes. That is why this report takes a portfolio-based approach, that aims to cover all radii of the problem space, combining near-term mitigations with longer-term measures that address the root causes of under-participation.

A portfolio approach is required, addressing the whole problem space

Root causes

Intermediate causes

Proximate causes



Proximate Solutions tend to deliver results quickly (*high responsiveness*) but with limited long-term impact (*low permanence and scale*). And, because they don't challenge core societal or industry norms and behaviours, they tend not to cause controversy (*low outrage*), hence are easier to implement.

Solutions to Root Cause issues have the opposite characteristics. They don't yield immediate results (*low responsiveness*), but their impact is much greater (*high permanence and scale*). Implementing them requires much wider societal or industry change, in terms of attitudes and behaviours (*high outrage*) making them harder to implement.

To balance early progress with permanent change in outcomes, a portfolio approach is therefore essential.

This is also why some of our recommendations initially seem to be placed far from our target in temporal terms whereas, in reality, they lie in close *causal* proximity. A further consequence of this connectedness is that recommendations in this report cannot easily be "cherry-picked" for expediency without significantly reducing their overall effectiveness.

Adding to broken systems instead of fixing them

A broken machine will continue to produce the wrong outputs as long as it remains broken. Faced with such a situation, we have a choice: we can attempt to manage, with special measures, the various individual issues arising from that malfunction, or we can fix the machine.

Consider, for example, the engine in a family car. We could address an oil leak by suspending a bucket from beneath the car's chassis, under the site of the leak. Or we could manage a sudden unpleasant grinding sound by installing noise cancellation. Obviously, these solutions wouldn't succeed for very long. It's much better to fix the engine.

The entrepreneurial ecosystem is broken too. This is apparent in its chronic failure to enable female entrepreneurs to thrive in the same way as it supports others to do so. As with our broken engine analogy, the ecosystem signals its breakdown in various ways; for example, in chronic, acute underfunding female founders, in under-participation in STEM subjects, in the lack of representation at leadership and CEO levels in companies, to name but three.

We don't successfully fix such a system by "hanging a bucket under the chassis". Nor, for that matter, by attempting to constrain those for whom the system currently works well. Rather, we fix it by engineering an ecosystem that works well for *all* demographics, for everyone.

For example, if women founders feel under-supported or unwelcome in a start-up incubator should we start a special incubator for women or should we instead make incubators in general work for everyone? The former is an example of adding on top of a broken system. The latter approach is certainly more difficult but ultimately more powerful. It has inherent scale, and is more cost-effective. It is also far more likely that this approach, if properly implemented, will benefit all under-participating demographics rather than just one.

This choice is an example of the *Proximate/Intermediate/Root Cause* model from our preceding section. We give it particular attention in this report, because the practice of adding to a broken system in this way is widespread.

Favouring tokenism over scaled solutions

Under-participation is a universal issue, which makes it a highly scaled problem³². Highly scaled problems require correspondingly scaled solutions. But, without widespread societal agreement and a corresponding sense of urgency, such change is inertial at best.

32 i.e., a problem that exists at large scale; for example, affecting many people across the country.

Recognition of this inertia often results in token, point solutions that are relatively easy to implement but that don't match the scale of the problem. They are likely well-intentioned, seeking to act as "pathfinders" for what could be achieved in future. But, at other times, they may only serve political expediency ("something must be done, this is something"). They are frequently counterproductive to our goals because their existence causes concern over the original issue to be stood down.

Note that this pitfall is different to the case where a solution is trialled in one or two areas before being scaled. But here we must be careful. Often, token solutions that start out as trials of future scaled rollouts never move beyond the trial stage, even when trial results indicate that they should. Agendas change, people forget.

Consequently, recommended interventions need to include the process of developing a wide-spread societal intolerance of the current extremely imbalanced participation rates in entrepreneurialism. Only by doing so can we enlist the scaled support needed to fully develop, implement and sustain scaled solutions.

From the foregoing discussion, we can derive a set of principles to guide the recommendations made in this report and an associated recommendations framework within which those principles can be applied.

Key Principles of our Approach

We will use the following principles when setting recommendations to counter the pitfalls discussed above:

Principle 1: The existing anchoring point for defining tolerable participation rates should be consciously disregarded. We must anchor our definition of "good enough" in the territory of equal gender participation rates.

Principle 2: A balanced portfolio of interventions is required, blending near-term benefits with longer-term initiatives that bring about a permanent change in attitudes. This portfolio should reflect the cause-and-effect relationships between issues acting to limit equal participation rates.

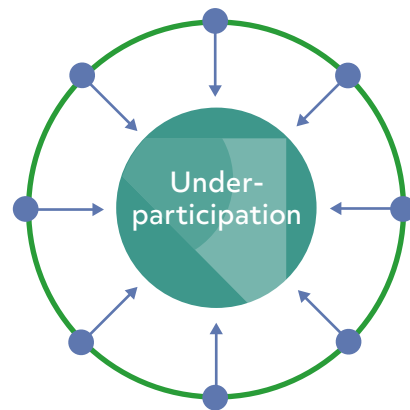
Principle 3: Recommendations should be biased towards making the ecosystem inherently work for everyone, rather than mitigating its inequalities through point solutions built on top of broken systems.

Principle 4: Practical scalability must be designed-in to interventions and societal/industry participation must *a priori* be addressed as part of delivering that scale.

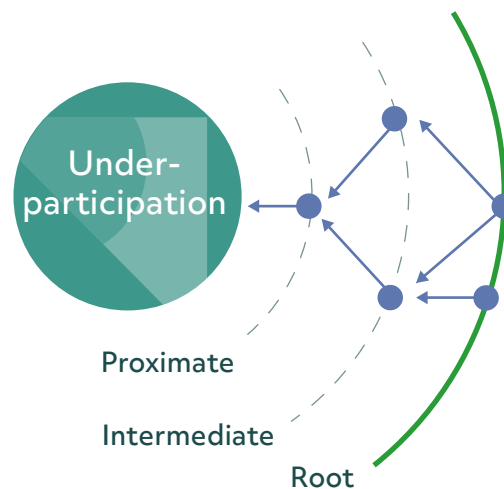
Recommendations Framework

The foregoing analysis suggests a framework to support the development of recommendations. Firstly, we identify a set of *proximate causes of under-participation*. These will serve as our focal areas for the remainder of the report:

Proximate Causes
(Focal areas of report)



For each of these focal areas, we can then derive its corresponding *cause-and-effect tree*. This will reveal a set of intermediate and root causes of the issue.



In the next chapter of this report, we identify these proximate causes of under-participation. These are the key focal areas of the rest of the report. In subsequent chapters, each focal area is then developed according to this framework. General beneficial interventions are identified, guided by our four principles identified earlier. In [Chapter 10](#), these general intervention options are distilled and integrated into specific, concrete recommendations.

03.

Under- Participation: Overview of Causes

We now begin to apply the model described in [Chapter 2](#) to the problem under investigation in this report, namely, why does our society exhibit such extreme differences in entrepreneurship participation rates?

In this chapter, we first identify and describe the proximate causes of under-participation in entrepreneurship³³. Based on our analysis, we next assert that all of these proximate causes ultimately originate from a small number of root causes. In the chapters that follow, we consider each proximate cause in turn and map its chain of cause-and-effect.

Exposing this anatomy of cause-and-effect then enables us to identify interventions that simultaneously directly address the root causes of under-participation and mitigate their effects in the shorter and medium term.

In stating the proximate causes below, we are referring to the majority experience, or mainline case. Naturally, participants in an ecosystem will have a range of experiences, which approximately follow a normal distribution. This analysis positions itself towards the centre of that distribution, whilst recognising that some participants will still become successful entrepreneurs even when confronted by an entrepreneurial ecosystem that does not adequately support their particular demographic. Of course, we celebrate such individuals, but our present task is to create an entrepreneurial ecosystem in which many more people have a fair opportunity to be successful entrepreneurs because of that ecosystem rather than despite it, where women are not immediately at a disadvantage at the outset or must rely on exceptional personal circumstances and support in order to succeed.

From our research, there are five major proximate causes of under-participation in entrepreneurship:

- **Relative to men, women are often more logistically constrained, making participation in entrepreneurship difficult.** Society commonly assigns the primary-carer role and the home-manager role to women, and then doesn't provide sufficient balancing support. This state of affairs isn't compatible with the intensive demands of an entrepreneurial career-path.
- **Women frequently have a sense of “not belonging” in entrepreneurship, which affects their confidence and self-belief.** The sparsity of women in entrepreneurship establishes a vicious circle leading others to conclude that entrepreneurship isn't a natural environment for them, which then further drives this sparsity.

33 These have been derived from both existing research and additional research carried out for this report. That work is summarised in [Appendix A](#).

- **Formally-defined pathways into entrepreneurship are unclear, while informal pathways and networks underserve women.** Developing an understanding of how to become involved in entrepreneurship and how to successfully move through its various stages largely relies on informal networks which are heavily orientated towards men. Formal support is correspondingly less well organized, disproportionately affecting women.
- **General education and the normalisation of entrepreneurship as a valid career path is largely not present in the education system.** This point naturally affects all demographics, but its impact is greater for women in the presence of the other proximate causes.
- **Women receive far less investment than men at all stages of the entrepreneurial journey from the investment community.** For example, firms led solely by women receive less than 2p for every £1 of total external investment.³⁴ Of the Scottish companies that received external investment in 2022, 12% were female-led and 73% were male-led.³⁵ Even in the university spinout sector – which is often perceived to exhibit better female participation rates - only 12% of university spinouts that successfully secure funding include female founders, with only 4% boasting all-female founders (compared to 75% for all male founders).³⁶

Having identified these proximate causes of under-participation in entrepreneurship, it would be tempting to immediately move to proposing various mitigations that could be applied to alleviate their worst effects. But, as discussed in the previous chapter, this approach would, on its own, only have a temporary and somewhat limp impact upon under-participation. This is because these proximate causes each have their own causes. Left unaddressed, this tree of deeper causes would continually act to re-establish the proximate causes.

34 See <https://www.british-business-bank.co.uk/wp-content/uploads/2022/06/small-business-equity-tracker-2022.pdf>

35 See [Appendix A: mnAI Data Analysis of Scotland's Incorporations 2022](#)

36 See <https://raeng.org.uk/media/cdvj3jjv/spotlight-on-spinouts-2022-uk-academic-spinout-trends-v2.pdf>

Therefore, in the chapters that follow, we will also examine the intermediate and, ultimately, the root causes of each of the above proximate causes, and we will demonstrate the relationships between them. But for now, let us simply state that it is essential, within a set of recommended interventions, that we include those that directly address the root causes of under-participation.

In the following analysis, it will probably already be obvious to many readers that the root causes we identify lie behind extreme under-participation in entrepreneurship, and other fields for that matter. But they are rarely to be found in reports intended to improve these imbalances. Certainly, to discuss them is to make many of us uncomfortable. And to address them is inconvenient. Much easier is to identify some mitigations to our proximate causes, to tell women that, for example, they need to be more confident and so on, and turn the page. But, if we want to permanently change the imbalances under discussion here, there is no other way but to include these root causes in our considerations.

We will next examine in chapters 4 through 8, each of our proximate causes in turn³⁷. In each case, we'll walk the cause-and-effect tree, surfacing various intermediate causes and, ultimately, their root causes. In each case, we will then explore what category interventions could be applied to address these causes. These will ultimately inform the report's concrete recommendations.

We also consider, in [Chapter 9](#), the further issue that there is an insufficiency of consistent and detailed dynamic data into participation rates in entrepreneurship. This deficiency both obscures a proper investigation into under-participation and undermines efforts to measure progress. For the purposes of the present exercise, we combined several research methods and sources, to build a detailed understanding of current participation rates. These are detailed in [Appendix A](#).

37 [Appendix B](#) contains the full cause-and-effect tree in its entirety. In chapters 4 through 8 we take each subsection of this tree and consider it in detail.

04.

Women are often
logistically more
constrained

In this chapter, we explore the following proximate cause of female under-participation in entrepreneurship:

Relative to men, women are often more logistically constrained, making participation in entrepreneurship difficult.

What are the root causes of the logistical constraints acting upon women, which make equal participation in entrepreneurship difficult?³⁸

Firstly, from birth onwards, we experience **intensive societal conditioning on what constitutes “normal” gender roles**. The second is that the **education programmes – from birth to adulthood – required to intensively counter and correct this conditioning, are largely absent** from our society.

In the context of our present focal area, these root causes combine to create three intermediate causes. Firstly, **women are expected to be the primary carer**. Secondly, **women are expected to be the household and family manager**. Finally, **society doesn’t provide adequate support to either of these roles** sufficient for women, on average, to operate in business with the same freedoms that men, on average, enjoy.

“

Women do not need special support, they need different support to suit their environment, it is a case for elevating equity but more importantly it is an economic case to have more women create and grow their own businesses.”

**Professor Norin
Arshed, University of
Dundee**

38 This root-cause analysis is presented in graphical form on [page 41](#).

“

The odds are stacked against women succeeding in entrepreneurship because the current system has not evolved to support them.”

Tim Allan,
Founder, Tricorn
Capital

For example, being the primary carer severely restricts working time, working flexibility and location.³⁹ In addition, being the household manager whilst working full time carries a significant cognitive burden in managing the rest of the family's and the home's logistics.⁴⁰ Because society traditionally (and, currently, still largely) considers that these roles are naturally the preserve of women, with men playing that of the primary bread winner within the family unit, it doesn't seem necessary to level this playing field to any great extent. So, many of our state nurseries close at 3:00pm, women are expected to take the great bulk of parental leave, and so on. In single-parent families, of which women make up 92%⁴¹, these roles are, of course, even more concentrated.

Such pressures in turn create further intermediate effects. For example, they produce an impetus for women to seek careers and locations with greater flexibility, less risk, more accessible services and less cognitively demanding work. While not all women will respond to these intermediate causes in the same way, and will have varying personal circumstances, these combined effects overall act to reduce participation-rates in entrepreneurship for women.

Interestingly, in our interviews, the majority of the most successful and well-established female entrepreneurs reported being well supported by partners and/or their families⁴² in either or both of the home manager and primary carer roles, often fully sharing responsibilities with them.

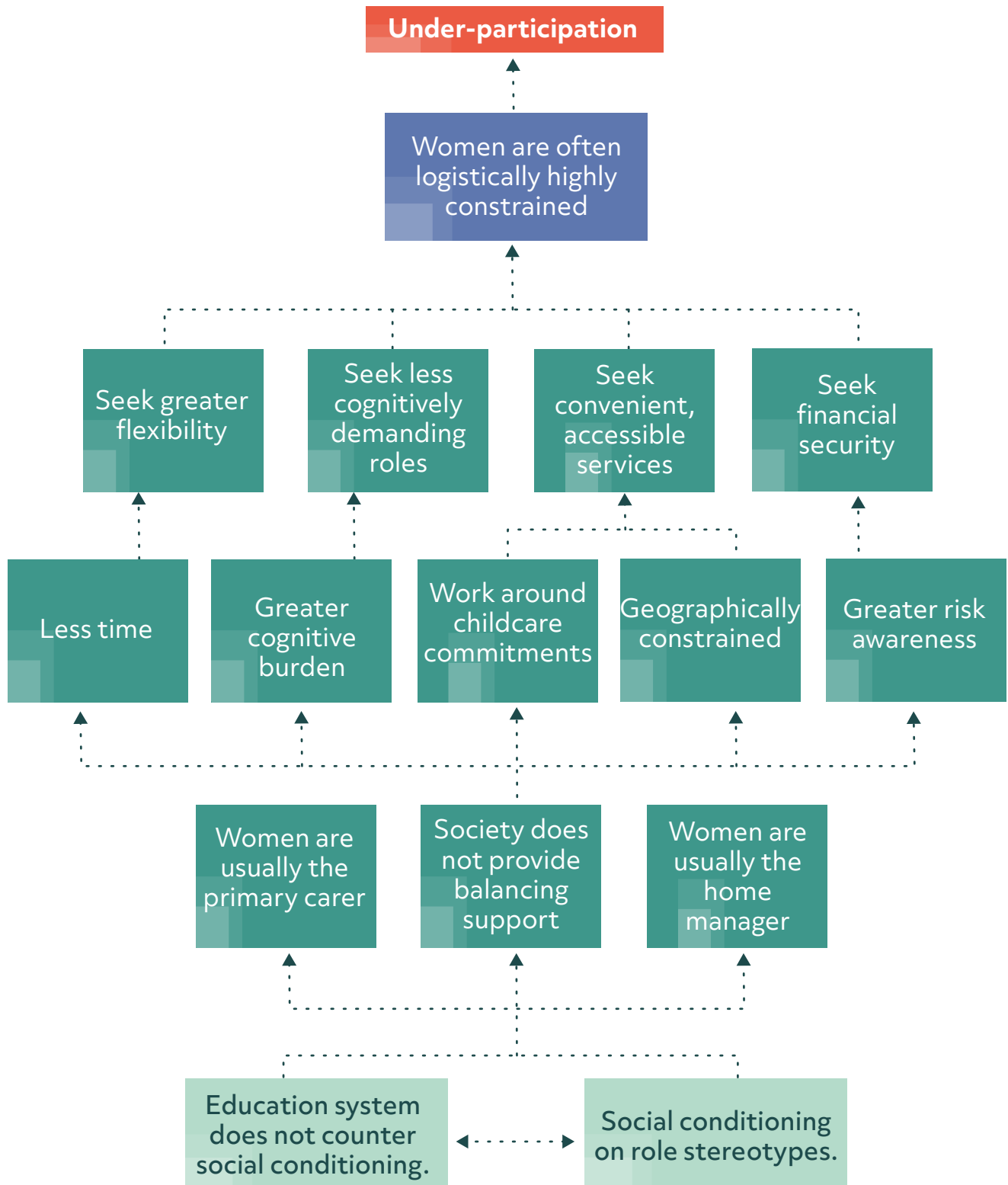
39 See https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/784324/RoseReview_Digital_FINAL.PDF

40 See “You Should've Asked”, by “Emma”

41 See <https://www.vhscotland.org.uk/wp-content/uploads/2016/12/SINGLE-MOTHERS-HEALTH-AND-INEQUALITIES.doc.pdf>

42 In interviews conducted with over 30 women considered to be successful entrepreneurs.

We can summarise the cause-and-effect relationships between these various mechanisms as follows (reading from bottom to top):



Addressing the Causes

Reducing the strength of above cause-and-effect relationships requires us to act in two areas. We must address the root causes that result in women overwhelmingly occupying the home manager and primary carer roles. And, recognizing that such actions are long-term in nature, we must also act to reduce the current consequential effects that the constraints of this allocation have upon entrepreneurial participation. We acknowledge that, although we are analysing this focal area from the perspective of women (because women are most often subject to its effects), our proposals naturally should provide the same potential for everyone engaged in primary carer and home manager roles.

From our cause-and effect tree above, we can summarise the effects resulting from the home manager and primary carer roles as: (mainly) women are constrained both in time and geography. And they carry a cognitive burden from these roles that reduces their available capacity for other activities and that heightens their general risk awareness.

A well-established starting point for encouraging early entrepreneurial activity is an incubation and education space of one form or another, in which founders can locate their fledgling start-ups for a period and/or receive regular mentoring and network support. *The Scottish Technology Ecosystem Review*⁴³ develops this concept into a network of “Tech-Scalers” across several city-centre locations, providing long-term incubation, high-quality, intensive founder education and a peer-learning and support environment, amongst other features, for tech start-ups.

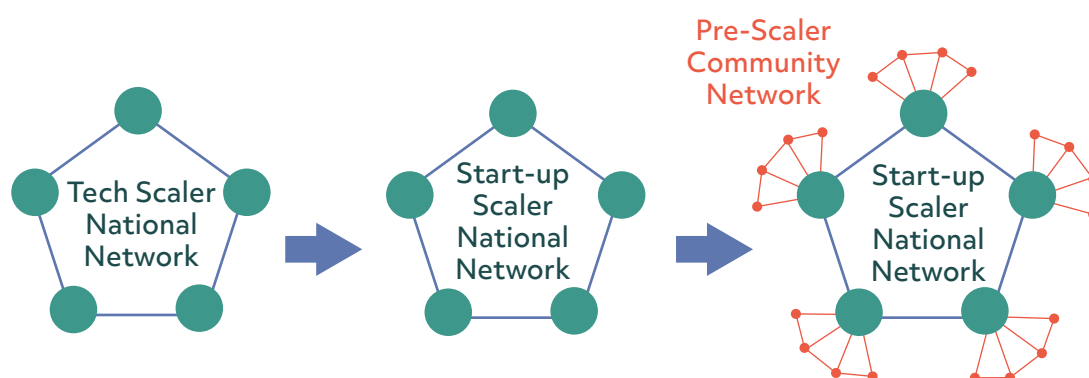
“

Entrepreneurs with primary care responsibilities have to overcome a massive, often prohibitive, energy barrier that others do not. This is very challenging when trying to start or scale a business”.

Caroline Barelle, CEO & Founder, Elasmogen

43 See <https://www.gov.scot/publications/scottish-technology-ecosystem-review/>

The later paper *Scotland's National Strategy for Economic Transformation*⁴⁴ proposes to evolve the Tech-Scaler network in two ways. The first is to generalise the network into a Start-up Scaler Network, supporting start-ups regardless of whether they are considered to be technology companies. The second is to extend the network into the wider community, with a larger network of smaller Pre-Scalers, providing very early-stage start-ups with incubation support, access to similar educational materials as in the Start-up Scalers, and a pathway into the Start-up Scaler network.



Start-ups ultimately may graduate from Pre-Scalers in different ways. Those qualifying as high-growth potential start-ups would likely move to the Start-up Scaler network, while some may access other existing support services.

Could these concepts serve as the basis for part of a solution to the constraints under examination here? The answer is yes, provided that we adapt the concept in line with the principles guiding this report's recommendations.

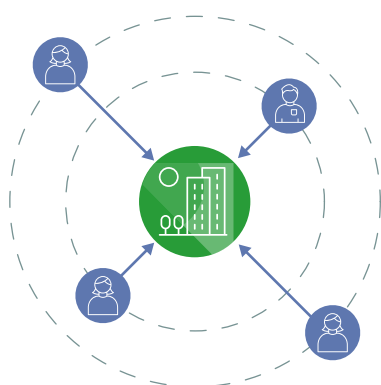
Recapping, **Principle 3** requires that solutions work for everyone rather than being add-ons to ill-adapted solutions. **Principle 4** requires that solutions can be properly and practically expanded so as to be real solutions at the scale required. With these points in mind, let's now consider how to develop the Pre-Scaler concept to be practically useful in the context of the logistical constraints placed on potential founders who also occupy the home manager and/or primary carer roles.

44 See <https://www.gov.scot/publications/scotlands-national-strategy-economic-transformation/>

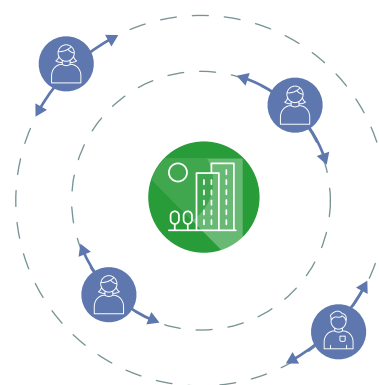
From Pre-Scaler to Pop-up Pre-starts (PUPS)

The significant additional burden placed upon primary carers means that, for many, they are time-poor and location-constrained. They require to move radially around urban centres, or within rural areas, in a “trip-chained” manner⁴⁵. They generally don’t have the time to travel to major urban centres and back again. The home, workplace, school, nursery, shopping centre, surgery, etc. need to be close enough to each other to be accessible within the time constraints in which primary carers typically operate. Therefore, all are generally located at the same radial distance from the urban centre, for example. To attempt to deviate much from this radial journey is to considerably exacerbate the time constraint, reducing available working time and adding to the mental burden through increased time-driven anxiety. In our interviews with female entrepreneurs, the childcare burden was regularly highlighted as a particularly challenging constraint. These factors act to reduce the accessibility of start-up incubation and entrepreneurial education services for primary carers.

Urban design assumes people travel to major centres



Primary carers are geo-constrained. They move radially



Thus, the Pre-Scaler concept is helpful here because Pre-Scalers can be located at various radial distances from the urban centre. But it is problematic to deliver the number of Pre-Scalers required to satisfy potential demand from primary carers for access to incubation resources whilst still allowing them to move radially. Not only must we grapple with the considerable delivery cost involved at scale, but it is also very difficult to provide quality mentoring support to a large number of Pre-Scalers.

45 See Invisible Women, Caroline Criado-Perez

These problems can be overcome by extending the Pre-Scaler concept from a fixed location to a mobile, pop-up format, and this is what we recommend in this report. Pre-Scalars should be delivered both as fixed locations (as previously discussed in NSET⁴⁶) and also in a pop-up format from the outset. Pop-up locations must be *where primary carers already are*, for example, utilising empty retail spaces in shopping centres, community colleges, schools, libraries and similar locations.⁴⁷

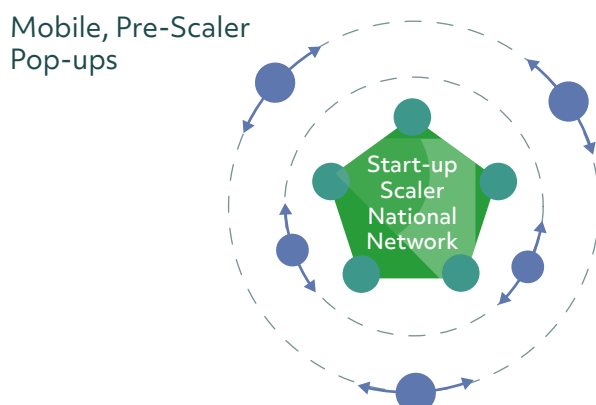
We also note that the term *Pre-Scaler* is not properly descriptive of the types of early-stage businesses that would likely use them. Certainly, some of the companies that are supported in their early stages in this environment will go on to significant scale. But many others, though collectively very important to the nation's economy, will not. Indeed, for that reason, the term *Pre-Scaler* may dissuade many early-stage founders from approaching the service in the first place. Therefore, we propose to change the name *Pre-Scaler* to *Pre-Start centres* (or, *Pre-starts*, for short). The Pop-up variant, which is the main focus of this discussion, will therefore be referred to as Pop-up Pre-starts (or *PUPS*). And, when we refer to Pre-start centres and Pop-up Pre-starts collectively, we'll use the term *Pre-starts network*.

A PUPS would remain at a given location for anything from a couple of days to a week to a month, depending on demand and other factors, and it would return to that location frequently and predictably. The PUPS would provide an incubation environment for developing a start-up concept with both general business mentoring support and access to digital marketing expertise (for example website building, search engine optimisation⁴⁸, social media advertising advice, etc.) and related areas.. It would provide a networking and confidence-building peer-learning opportunity. And it would provide shared virtual access to resources such as 3D printing machines, and similar design tools.

46 National Strategy for Economic Transformation, <https://www.gov.scot/publications/scotlands-national-strategy-economic-transformation/pages/4/>

47 For example, see https://discovery.dundee.ac.uk/ws/portalfiles/portal/67137325/SB_21_73.pdf

48 Search Engine Optimisation (SEO). Techniques for improving a website's relative position in the search results pages of search engines.



Such an approach, which is an extension of a concept pioneered by [Elevator's successful E3 initiative](#), carries several advantages. The model makes efficient use of funding and our limited number of capable mentors and other required personnel in delivering the service to the greatest number of participants. Locations that work can be easily identified through direct, learned experience. Where a particular location is especially popular over a sustained period, it can be considered for conversion to a permanent Pre-start centre. Utilising retail locations and other under-used spaces would bring a little more life back to our local retail areas.

This model has applicability well beyond the needs of primary carers. It makes support available to all groups with time and location constraints. For the same reason, the concept is ideally suited to supporting rural entrepreneurship.

The above proposal is helpful in addressing the geographical constraint and, as a consequence, helps to some extent with the time constraint issue too. But we can also further address the time constraint problem by building upon the Pre-starts/PUPS model so far outlined.

The time constraint is mainly a consequence of the primary carer role. For example, in the case of caring for children, many of our state nurseries and our schools close at 3:00pm or thereabouts. Contrast with France, for example, where the school day runs from 8:30am until 4:30pm. Meanwhile, paid childcare in the UK is the most expensive in Europe⁴⁹. The relatively short-duration state-provided childcare provision and the relatively high cost of extended private childcare act together to severely time-constrain women living below a certain income level.

49 See [Net childcare costs in EU countries, Impact on family incomes and work incentives, 2019](#), OECD

We therefore propose that the Pre-starts network (comprising fixed-location Pre-Start centres and PUPS) provides limited financial childcare support to entrepreneurs in the primary carer role as follows:

There are two available levels of membership in the Pre-starts network. Associate membership is the default membership. Anyone can come to the Pre-Start centre or PUPS for presentations, events, networking days, mentoring sessions and the like. This ensures that the tentative, the apprehensive and the curious have a relatively low bar to exploring and developing their interest and confidence.

A subset of associate members will move to Full Membership, this membership level being re-assessed on an annual basis. Full Members are Associate Members whose start-up concept or stage of development is considered by the Pre-start centre or PUPS operator to be promising enough to merit full entry to the network. Full Membership carries benefits, including access to some of the more advanced Start-up Scaler training programmes. And it also includes a grant intended to meet the costs of several hours per week of extended childcare, for up to a period of one year. To ensure that budgeting is predictable, the central operator (see below) is responsible for ranking in order all start-up concepts across the network and allocating Full Memberships according to this ranking and available budget limits in any given year.

For delivery purposes, we propose a model whereby there exists a *Central Operator* of the overall Pre-starts network, including the Pop-up variant. The Central Operator would then work with *Franchise Operators* around the country to deliver the network. We envisage that the Franchise Operators would be largely drawn from existing organisations, who would adapt their services to meet the requirements of the Pre-starts network - Scotland currently has a variety of organisations providing variations on subsets of this concept. In selecting Franchise Operators, it is important not to specify their operating models with excessive rigour, or otherwise

“

Scotland should be supporting women, especially mothers, to combine raising children with running a business. In Germany it costs less than £250 per month to have a child in full-time care.”

**Petra Wetzel, Founder
West Brewery**

overly-constrain them, as most are successful precisely because of their ability to adapt to local conditions and priorities. It is sufficient to ensure that Franchise Operators deliver a minimum-specified service footprint within their wider service mix.

This Central Operator/Franchise Operator model encourages a more collaborative approach between existing organisations in delivering the benefits of the Pre-starts network. It utilises their energy and experience across the country whilst ensuring consistency and minimum standards of delivery. The Central Operator would also be responsible for managing central processes (such as Full Membership processes) and resources (such as 3D printer access, digital marketing expertise, etc.).

Together, Central and Franchise Operators are responsible for actively reaching out to under-represented demographics, and for working to tightly integrate the network with existing central and regional entrepreneurial resources and partner offerings.

To Scale-Up or to Scale-Deep?

What if we didn't implement the pop-up model proposed here or, for that matter, the fixed-location Pre-starts network?

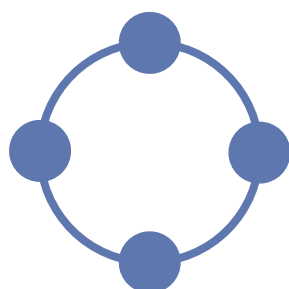
For many years, there has existed a policy debate in Scotland as to whether to focus on creating more unicorn companies (*to scale-up*), or instead on local and community entrepreneurship (*to scale-deep*). Over decades, industrial policy has favoured one or other of these positions, but not both.

The authors' view is that both forms of entrepreneurship have a symbiotic dependency, and that to focus on only one of them is detrimental to our ambitions for the other. It is a myopia that renders our national strategy for entrepreneurship incomplete and incoherent. It's akin to attempting to grow Giant Redwoods without also nurturing the forest floor that brings them forth.

High-growth start-ups will emerge more often in a country that exhibits a general culture of entrepreneurship and that is at ease within that culture. They will rarely emerge from an otherwise sterile entrepreneurial landscape. To create such a fertile entrepreneurial environment, the nation must continually build-out and strengthen its entrepreneurial support network.

We can think of that network as consisting of three (connected) subnetworks, or layers. The first is the *Central* Entrepreneurial Network (CEN). It combines our existing incubation, founder-education and other support frameworks, both government-backed and private. These are largely located in the centres of cities or large towns. It's from these environments that scale-ups and unicorns are most likely to ultimately emerge.

*Central
Entrepreneurial
Network*

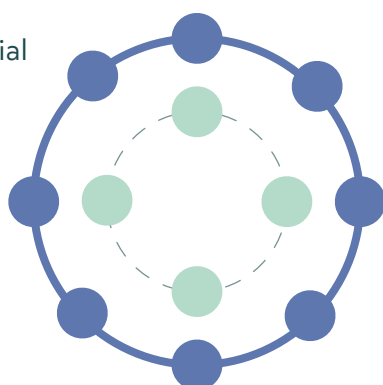


Examples:

Start-up Scalers
/Tech Scalers
Accelerators,
Incubators

The second network is the *Regional Entrepreneurial Network (REN)*. This extends the above capabilities into suburban and, to some extent, semi-rural areas. In this layer, we are beginning to reach an entrepreneurial constituency that is a combination of future Scale-up founders and Scale-Deep founders.

*Regional
Entrepreneurial
Network*



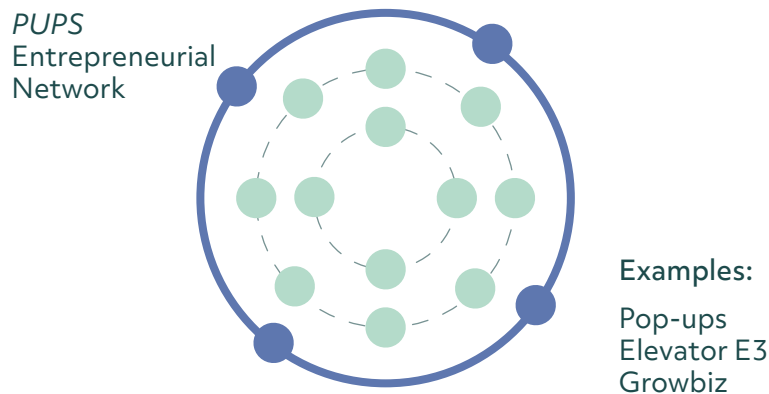
Examples:

Pre-Scalers
Can do Places
Halo Centres
Local Business
Gateways
Small Incubators

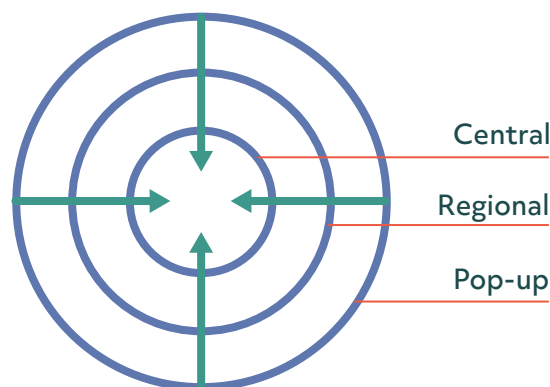
The overall entrepreneurial network is completed by the *Pop-up Entrepreneurial Network*. This layer includes the Pop-up Pre-starts model proposed in this section as well as similar existing mobile services, such as Elevator's E3⁵⁰ initiative, and the work done by Growbiz⁵¹ (in supporting rural entrepreneurship). This layer enables us to cost-effectively enfranchise more of the population in entrepreneurial opportunity, including primary carers, as discussed above.

50 See <https://www.e3hub.org/>

51 See <https://www.growbiz.co.uk/>



The symbiosis between *Scale-ups* and *Scale-Deeps* operates as follows: by expressing the full entrepreneurial network in this way, we encourage far more people into the field, making it more likely that we will discover founder talent, including those with scale-up potential. And businesses can be nurtured in the outer *Scale Deep* network layers, with an appropriate subset proceeding towards the more *Scale-Up* oriented support provided in the central layer.



Meanwhile, more headline *Scale-Up* entrepreneurial success stories create belief and excitement within the entrepreneurial ecosystem as a whole, which encourages more people to become entrepreneurs.

But nurturing the *Scale-Deep* category of businesses also conveys other significant benefits to society. The product or service provided by a *Scale-Deep* business almost always provides a direct economic or societal benefit to the location in which the business is situated. This same is only sometimes true of *Scale-Ups* (their main societal benefits being employment and tax revenues).

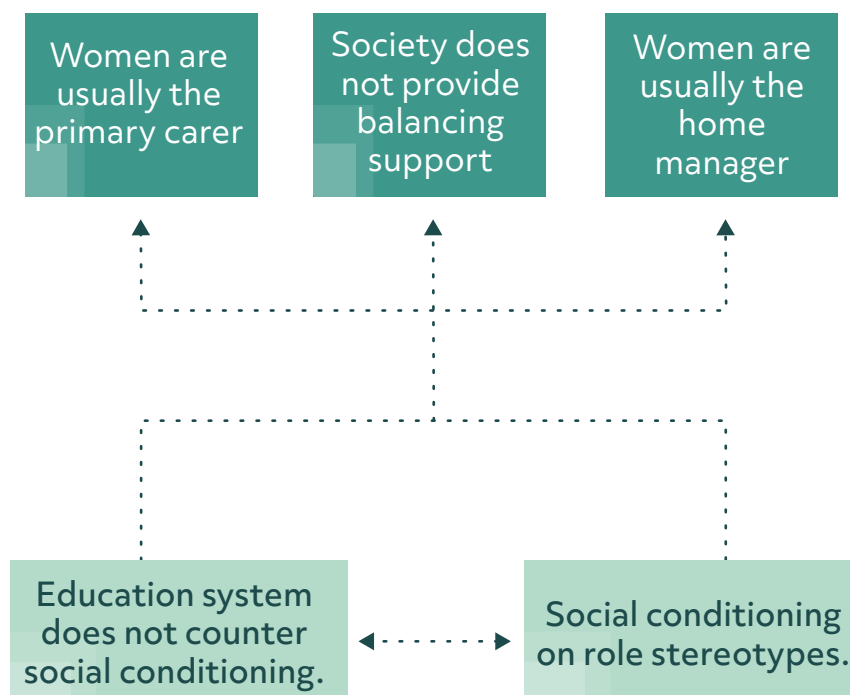
And *Scale-Deeps* almost always create jobs within distributed communities, including rural areas across Scotland, whereas *Scale-Ups* usually only do so within large population centres, notwithstanding recent hybrid working models.

In short, *Scale-Deeps* directly raise the country's wellbeing index and reduce its social security bill. They are an integral part of a functioning, successful society. The Pop-Up proposal presented here simply enfranchises more of our citizens within the country's entrepreneurial ecosystem, which both improves the economic performance and individual opportunity.

The overall effect of the above recommendations is to establish in Scotland an integrated nationwide entrepreneurial incubation, education and support platform, and one that is properly adapted to the needs of under-represented demographics. To ensure that we stay true to these goals during implementation and beyond, we recommend that the design and development of this platform includes regular input and consultation with a panel of founders from under-represented demographics.

Addressing the Root Causes

The foregoing discussion addresses the 'consequences' of the home manager and primary carer roles typically being assigned to women. But what about the *causes* of that assignment? The following is an extract from our earlier cause-and-effect tree in this chapter, depicting only the bottom of the tree.



The interventions discussed above can mitigate the constraints of time and geography to only a limited extent, while the cognitive burden resulting from them remains largely unchanged.

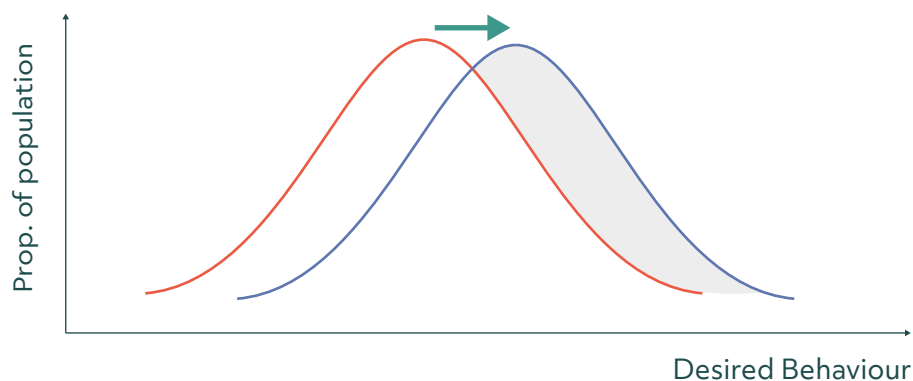
Further improvement requires that society dismantle its own role stereotypes associated with the primary carer and home manager role. Of course, the rewards to doing so extend far beyond the entrepreneurial field, into general industry and society as a whole.

Such a change requires an intensive educational/awareness programme continuing over many years, targeted not only at children, but at adults and businesses too. This multi-pronged approach is very important. There is limited utility in teaching children at school about shared carer and home manager responsibilities if they return home to see role stereotypes being reinforced by parents or carers. Nor is much gained if enlightened parents discover that their employers frown upon men who “take too much parental leave”.

An educational programme can be integrated relatively easily at school level, within existing personal development curriculum slots. Such programmes obviously must include on-going, training for teachers in topics such as anti-sexist and anti-racist approaches.

A continuous, multi-channel public information campaign should be developed, educating its audience on the concept of the mental load borne by those acting in the home manager role and primary carer roles.

Of course, it is entirely unlikely that such an approach, even sustained over years, will change *everyone's* attitudes and consequent behaviour. But this isn't the goal. If the centre of the distribution of attitudes can be shifted, this represents a considerable improvement across society as a whole (equal to the shaded area on the chart, below).



It's obvious that attempting to change the role stereotypes associated with women is a useless endeavour if we don't, in parallel, change those stereotypes that attach to men. Prospective female entrepreneurs will make little progress if their male partners must meanwhile adhere to the primary-breadwinner stereotype inside their workplaces, for fear of otherwise being penalised in their careers.

In this respect, it is therefore imperative that employers also adjust their attitudes. Although the right to shared parental leave was introduced in the UK several years ago, the vast majority of men still take only a fraction of their entitlement. Men are often regarded as “less committed to the business” if they take on a greater proportion of the carer role or if they take more than a couple of weeks of parental leave.

The government naturally does not control the culture inside organisations, while tax-based incentivisation is a somewhat clumsy influencing method at this relatively fine level of cultural granularity. Instead, we propose to build upon the Scottish Government’s existing Fair Work Framework, that promotes a fair working environment within the nation’s businesses, currently guided by five focal areas.⁵²

Our proposed extension recognises that employers not only shape the culture of their own organisations, they also influence wider society through the effect that workplace culture has on those with whom an employee has relationships. For example, in a heterosexual couple, the level of tolerance/encouragement that a business demonstrates towards a male employee who wishes to use his shared paternity entitlement directly influences the scope that his partner has to pursue her own career goals, including, of course, any entrepreneurial ambitions that she may have.

We propose that a *Fair Society Champion* accreditation is introduced in Scotland, awarded to those employers that actively encourage a fairer society. For example, the employer:

- Actively encourages men to take up their full parental leave.
- Actively encourages men as well as women to take on carer responsibilities, providing flexibility with regards to working hours pattern and location.
- Regularly educates employees with regard to the home manager and primary carer burden.
- Instigates processes and training to reduce the likelihood that primary carers, including men, are penalised or regarded as “not committed”.

To encourage uptake of this accreditation, suppliers to government would be required to hold this accreditation, or be working towards doing so within a limited time-period, if they wish to continue working on government-awarded contracts. This is consistent with the approach taken as regards the other principles of the Fair Work Framework.



The above proposals are presented as specific recommendations in
Chapter 10: Consolidated Recommendations.

52 <https://www.healthyworkinglives.scot/workplace-guidance/fair-treatment/good-and-fair-work/Pages/scotlands-recognition-of-good-work-the-fair-work-framework.aspx>

05.

A sense of “not-
belonging” in
entrepreneurship

In this chapter, we explore the following proximate cause of female under-participation in entrepreneurship:

Women frequently have a sense of “not belonging” in entrepreneurship, which affects their confidence and self-belief.

The following elements combine to directly create a sense of not belonging in the field of entrepreneurship for women⁵³:

Firstly, and most obviously, **the field of entrepreneurial activity is dominated by men**, and lacks sufficient female exemplars to properly counter this monoculture. When a group is under-represented and lacks exemplars, all participants – both those who are under-represented and those who are not – consciously or unconsciously seek a plausible way to explain this imbalance. They frequently conclude that a given group is under-represented because it *should* be, that the system is operating properly in selecting out those demographics because they are not suited to the field for some good, if unspecified, reason.

Such beliefs are obviously comforting to majority participants. After all, the system selected them *in*, which was evidently the right decision. To doubt the system’s selection methods is to doubt one’s own validity as a participant.

“

I was once advised in an investment meeting to take a male colleague to future meetings to make my tech business more ‘credible’. I spent the next few days thinking of where I might pick up a man to do this. It was both funny and depressing in equal measure.”

Leah Hutcheon, CEO & Founder, Appointedd.

53 This root-cause analysis is presented in graphical form on page 58.

Meanwhile the same beliefs create friction for members of under-represented demographics and lead them to doubt whether they should proceed in the field or even enter in the first place. In our interviews, several female founders reported that they felt that they bear **the pressure of carrying the hopes of an entire demographic, and the increased scrutiny of peers and observers.**

Naturally, many will choose to avoid these pressures entirely, through non-participation. Thus, a reinforcing loop operates, removing potential participants from the entrepreneurial ecosystem which, in turn, makes participation more difficult for those remaining.

Women who successfully overcome these challenges are considered to be “exceptional”, and therefore potentially legitimate. But, as they progress, many will still **frequently experience prejudice and sexism** to varying degrees, both conscious and unconscious, to remind them that perhaps they don’t belong after all. In our research, 87% of respondents to the Entrepreneurial Voice survey said that they had experienced varying degrees of sexism, racism or both during their careers. This pressure removes still more members of under-represented demographics from the entrepreneurial ecosystem.

Of the established female entrepreneurs interviewed as part of this review many cited barriers that existed for them that did not exist for their male counterparts and reported that they had made progress despite these by adapting their behaviour to the only available system. From our many interviews, the following comments were typical of many: “I had adapted to behave more like a man in order to overcome ... some of the barriers.” or “I didn’t call out blatant discriminatory comments for fear of it compromising my career.”

Should we expect female entrepreneurs to need to adapt to an environment that is not fit for purpose for them, or that actively places such constraints upon them?

There are insufficient counterbalances to these effects. Our **education system, at all levels, does not educate and encourage female entrepreneurship** (indeed, it hardly encourages entrepreneurship at all, as we will discuss in [Chapter 7](#)), **nor is equality and diversity education sufficiently embedded** across the curricula of our schools, colleges and universities.

“

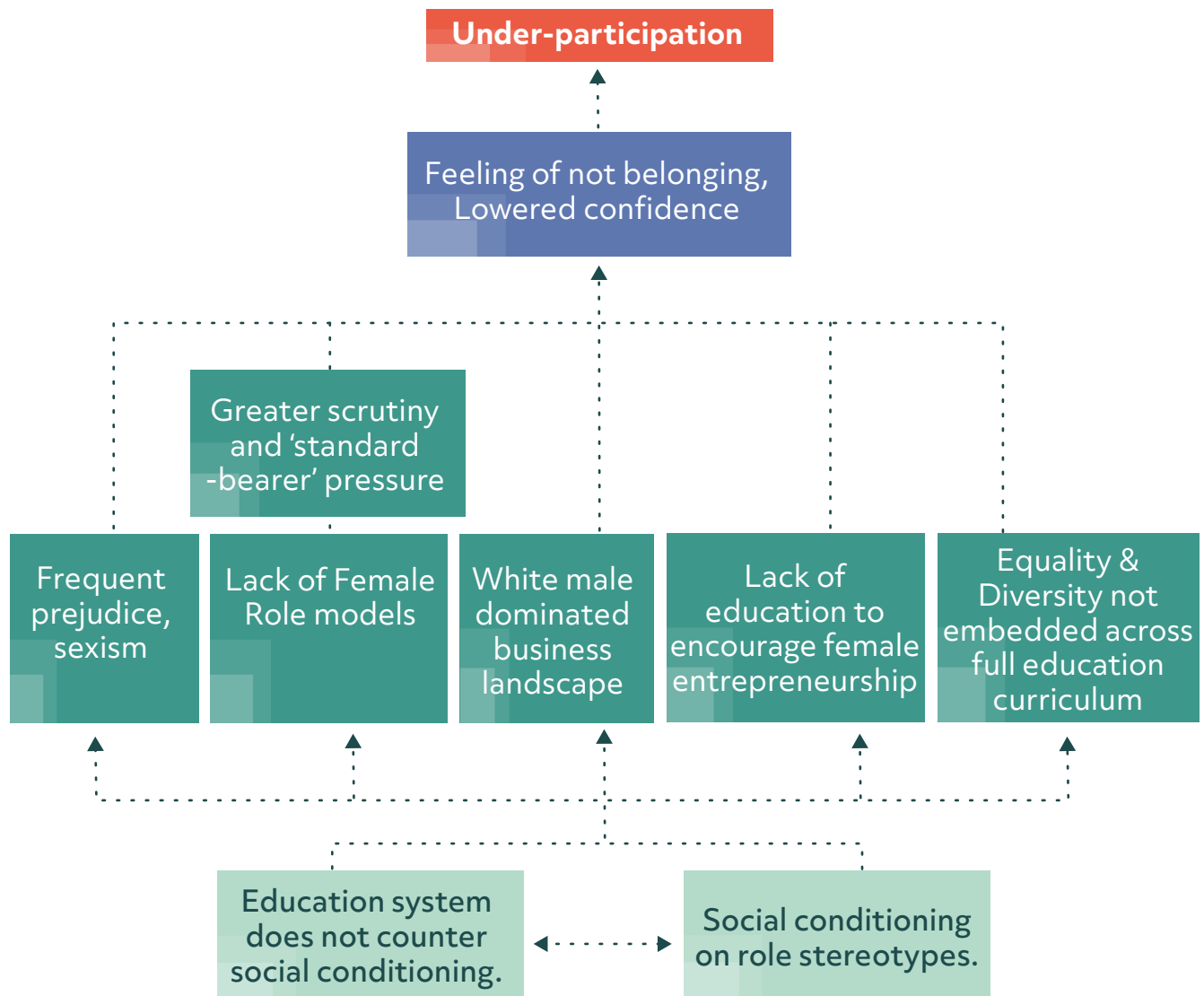
The further you are from the white male middle-class characteristic the bigger the barriers and obstacles in an endeavor such as entrepreneurship”

**Mary Ann Sieghart,
Journalist & Author**

These considerations lead us to the *root causes* of the above intermediate causes. Not surprisingly, these are the same two root causes already described in [Chapter 4](#). Recapping, from the earliest age, we experience **intensive societal conditioning on what constitutes “normal” gender roles**. And the **education programmes – from birth to adulthood – required to intensively counter and correct this conditioning**, are largely absent from our society.

These root causes combine to create a distorted context wherein absurdities such as those just described seem rational and normal from inside the system. Our entrepreneurial ecosystem does indeed believe that gender innately influences suitability for entrepreneurship because society as a whole believes it.

We can depict this cause-and-effect anatomy as follows. Proceeding from the bottom of the diagram to the top, just two root causes are responsible for creating a set of factors that act to make entrepreneurship what psychologists call a “hostile environment” for women.



Addressing the Causes

Reducing the strength of the above cause-and-effect relationships again requires us to act in two areas. We've already discussed, in [Chapter 4](#), an approach that could start to address the underlying root causes identified above. In this chapter, we'll therefore focus on actions that mitigate the issues resulting from them. In summary, from our diagram above, these are:

- Male dominated business landscape, lack of female role models
- Greater scrutiny and "standard-bearer" pressure
- Lack of education to encourage female entrepreneurship, while equality and diversity is also not embedded across full educational curriculum
- Frequent prejudice, sexism

We'll now take each of these points in turn, and discuss what practical actions we might take to mitigate them to a meaningful extent:

Male dominated business landscape/Lack of female role models

A lack of role models in a given demographic is one of the greatest discouragements to others in that demographic. Conversely, when a "critical-mass" of exemplars is established, then participation is normalised, biases decrease still further, and entry-friction reduces.

In order to reach that tipping point, it is therefore important to actively reduce the friction frequently experienced by female entrepreneurs, such friction existing in the first place because their participation *isn't* yet normalised.

The friction occurs in two forms. The first is continuous, background discrimination. It arises from the root causes discussed earlier, and manifests in an unconscious or conscious belief that a particular demographic is not as suited as the majority demographic to a particular endeavour. Various actions described throughout this report are targeted towards this form of discrimination.

The second form of friction occurs during "selection events"; those points in the entrepreneurial journey where the entrepreneur is either selected into or excluded from participation in some activity, such activity acting as a gateway to the next level of development or opportunity.

Examples of selection events include participation in accelerator and incubation programmes, founder development programmes and entry into business networks; we'll refer to the organisations that operate such services as Ecosystem Builders in the text that follows.

“

As an entrepreneur from an under-represented group myself, I know it's not often the entrepreneurial aspiration but the access to the resources and support from role models that holds back this group from releasing the potential and contributing to society.”

**Paramjit Uppal,
Founder & CEO, AND
Digital**

The other major category of selection event is investment decisions, largely operated by venture capital firms, investment syndicates and individual investors. This is the subject of [Chapter 8](#), and we'll therefore defer discussion of this point for the time being.

As regards Ecosystem Builders, in many cases the government contributes funding through various channels. We recommend that such funding formally becomes contingent on both the selected participants and the selection panels themselves exhibiting greater gender diversity.

Consider the experience of a woman who has been rejected from entry into a programme as a result of such a selection event. How the Ecosystem Builder manages this rejection process can make the world of difference to the on-going motivation of the founder in question. The difference depends on the quality of the explanation given to that founder as to why she was unsuccessful in her application, pitch, etc. In the absence of high-quality (or any) feedback, the founder is left wondering whether she was rejected because her chosen business domain is not considered relevant to this particular Ecosystem Builder's focal area, or alternatively whether it's just that her idea or execution is lacking within an otherwise valid chosen domain. Or was it simply sexism?

Detailed, thoughtful feedback can motivate the founder to improve and learn, while a lack of quality feedback can feed suspicions, and may result in founders discontinuing their entrepreneurial activity completely.

We therefore recommend that all Ecosystem Builders provide detailed, transparent feedback to all rejected applicants, and particularly so for female founders. They should also collect and publish acceptance/rejection statistics, dis-aggregated by gender and ethnicity. Such a process should be a pre-requisite of receiving government and development agency funding.

We also recommend that Ecosystem Builders seek feedback from rejected founders from under-represented demographics on the selection process operated by the organisation, and have procedures in place to actively consider this feedback, making changes to process where appropriate.

Greater scrutiny and “standard-bearer” pressure

As discussed earlier, women and others from under-participating demographics who are considering an entrepreneurial path often feel additional performance pressures due to the increased visibility and scrutiny that comes from being an exception within a population. For example, potential founders report feeling that they are carrying the hopes of the entire demographic that they represent. In other cases, the pressure takes the form of needing to “single-handedly” prove wrong the expectations from prejudiced observers that they will fail as entrepreneurs simply because they are members of a particular demographic.

This phenomenon tends to dissuade would-be founders in these demographics from participating as entrepreneurs. Incorporating a company or social enterprise is a somewhat visible step in such circumstances and provides little private space in which to attempt to develop an entrepreneurial idea, or to fail in the attempt, and learn from the experience.

Potential entrepreneurs in these circumstances need small amounts of capital to test ideas, and to build early entrepreneurial experience away from that visibility.

We therefore propose to attach a *Concept Fund* to each Pop-up Pre-start and each Pre-start centre (see [Chapter 4](#) for more on these). The Concept Fund would provide micro-grants (of around £1000) to associate members of the Pre-starts network to support specific proof-of-concept expenditure. Associate members wouldn’t need to have incorporated a business or social enterprise in order to apply for the awards. The Franchise Operator of the network would be responsible for ascertaining whether the application was relevant to the intention of the fund. Founders could receive grants from the Concept Fund more than once.

This resource would provide help for very early stage, potential start-up founders to establish proof-of-concepts, following the well-established *Fail Fast/Lean-Start-up* methodology⁵⁴.

The Concept Fund is intended to work alongside the *Journey Fund*, discussed in [Chapter 8](#).

54 For example, see <https://www.agile-academy.com/en/agile-dictionary/fail-fast/>

Lack of education to encourage female entrepreneurship, equality & diversity not embedded across full educational curriculum

As discussed above, because society has normalised under-participation of women in entrepreneurship, it hasn't previously been considered necessary either to encourage this participation, nor to train general participants in the importance of diversity and equality.

The recommendations below are over-and-above the foundational need to improve general entrepreneurial education, which we cover in [Chapter 7](#).

We recommend that all school and university courses include mandatory diversity and equality education as part of the first-year syllabus. This shouldn't be the tick-box type, but, rather, should be tailored appropriately to illuminate each applicable subject's under-participation origins, on-going exclusionary factors, in addition to more general diversity and equality best-practice education.

For example, in considering current participation rates in STEM subjects, most Computing Science pupils and students probably don't know that programming was performed almost entirely by women in its infancy because it was considered to be an unimportant secretarial task. Later, when the importance and power of software became more apparent, men took more of these roles, and salaries rose. Women were then gradually excluded from the profession because society effectively determined that such work, being now considered important, was cognitively too demanding for women⁵⁵. Most science students likely aren't aware that it was once forbidden for women to publish in science journals, or to even practice science at all⁵⁶, and so on. These stories set the background to today's gender imbalances in STEM subjects, and should be taught as part of correcting existing biases.

All Ecosystem Builders (defined above) receiving financial support from the government should demonstrate, as a pre-requisite to receiving that support, that a programme is in place to provide all staff with mandatory diversity and equality training.

55 See <https://www.womenintech.co.uk/the-history-of-women-in-tech>

56 The Gendered Brain, Gina Rippon, Invisible Women, Caroline Criado-Perez

Frequent Prejudice, Sexism

We can think of sexism as a spectrum, along which varies degrees of the practice are located:



To some extent, the presence of any one type of sexism reinforces and legitimises the others. To meaningfully reduce sexism, we must therefore strategically act upon all three types.

To the extent that sexism contributes to under-participation, our aim in this report, bluntly put, is to raise unconscious sexism to the conscious level, when reasonable people can then reconsider their formerly implicit views in the context of the arguments made herein, and elsewhere. Many of the recommendations in this report are intended to operate in this way.

But what about conscious, extreme sexism, or misogyny? It seems obvious that a society tolerating, for example, aggressive, hate-filled posts on social media directed at women simply because they are women, that such a society will tolerate less-extreme forms of the practice too.

There is currently no existing law in Scotland directed against misogyny. However, the Misogyny and Criminal Justice Working Group published the excellent report [Misogyny: a human rights issue in March 2022](#). The report recommends:

- a new statutory aggravation to relate to misogynistic conduct where a crime such as assault, criminal damage/vandalism or threatening or abusive behaviour is aggravated by misogyny
- a new offence of stirring up hatred against women
- a new offence of public sexual harassment of women, and
- a new offence of issuing threats of, or invoking, rape or sexual assault or disfigurement of women and girls online and offline

At the time of writing, these recommendations have been accepted in principle by the Scottish Government, but not yet implemented.

A timetable for completion of the detailed review of these recommendations, and their implementation, should be published by the Scottish Government.

 The above proposals are presented as specific recommendations in [Chapter 10: Consolidated Recommendations](#).

06.

Pathways into
entrepreneurship
are unclear or
unavailable

“

As a female founder I do not feel ‘plugged in’ to the informal networks that may exist, nor have much visibility of such networks”

Caroline Barelle, CEO & Founder, Elasmogen

In this chapter, we explore the following proximate cause of female under-participation in entrepreneurship:

Formally defined pathways into entrepreneurship are unclear, while informal pathways and networks underserve women.

Existing pathways into and within entrepreneurship largely operate on an informal, network-based support model. These provide advice, expertise, introductions to investors and more. Of course, such networks have been shaped by the same root causes described earlier; intensive societal conditioning on what constitutes “normal” gender roles and the fact that the education programmes – from birth to adulthood – required to intensively counter and correct this conditioning, are largely absent from our society.

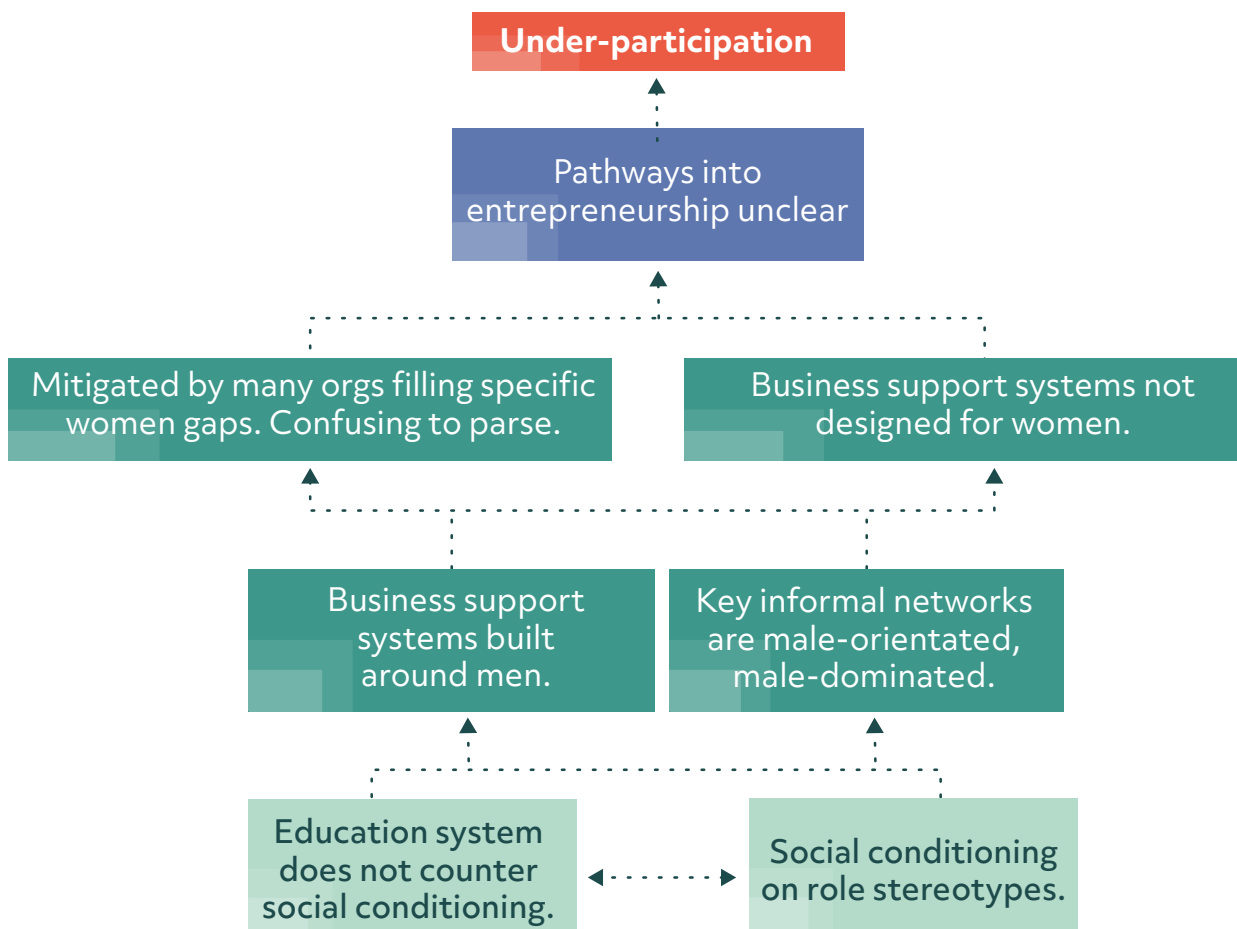
These have the effect of producing largely **male-dominated informal networks**, which suffer from the proximate cause described in [Chapter 5](#) (*a sense of not belonging for women*), which reduces their availability to women. And, because the entrepreneurial ecosystem relies on these informal networks, **alternative support mechanisms for women are under-invested in, under-coordinated and under-scaled.**

Other support systems aren’t configured to support the specific needs of women (see [Chapter 4](#), *women are logistically highly constrained*). For example, access-points into entrepreneurship, incubators etc., are often located in urban centres, which is problematic for primary-carers.

In reaction to this general situation, various point mitigations have been introduced; for example, support groups for women entrepreneurs, women-only incubators, women-oriented investment funds, etc. These individual endeavours are not well coordinated, in recognition of the others' existence. More generally, the early-stage start-up space is a cluttered environment, consisting of literally hundreds of organisations, including support groups, government agencies, accelerator hubs, mentoring groups, training programmes, incubators, members associations, chambers of commerce, etc. The combination of their sheer number, the informality of their operating models and the degree of overlap between them is confusing and often intimidating for entrepreneurs, who report finding it **difficult to parse these options or to navigate the entrepreneurial pathways** available to them.

In our Entrepreneurial Voice Survey, approximately 77% of respondents stated that there was a lack of signposting and clear pathways for their entrepreneurial journey. Of those interviewed, many felt that they were being passed between multiple organisations, before eventually ending up where they started. One described a sense of being “on a merry go round that isn’t going anywhere”, unable to unlock the door to the next stage of the entrepreneurial journey.

We can summarise the cause-and-effect relationships between these various mechanisms as follows (reading from bottom to top):



“

When I first started my Starling journey I was not aware of the Angel or early stage entrepreneurial community. It was neither visible nor easy to navigate. Strong and cohesive signposting that makes this environment more accessible to more entrepreneurs can only be a good thing.”

Anne Boden, Founder & CEO, Starling Bank

“

Stronger supply chains, collaboration and structured on-going support and pathways are essential to help female start-ups.”

Jackie Brierton, Founder Growbiz

Addressing the Causes

No comprehensive, overall entrepreneurial pathways framework and journey mapping currently exists⁵⁷. Instead, various public and privately funded organisations provide partial journey maps⁵⁸, with little coordination existing between them.

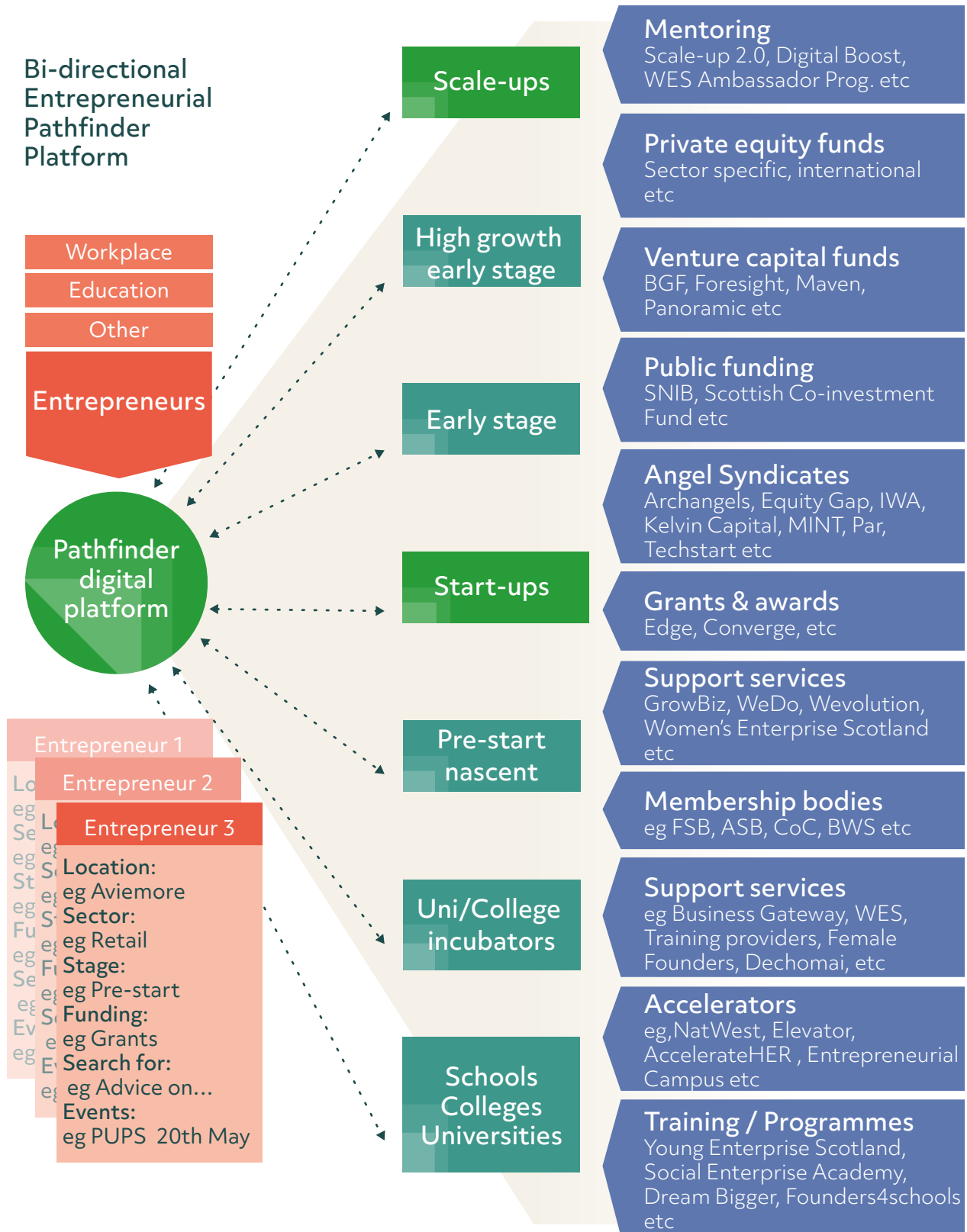
Therefore, the obvious action is to create a centralised resource with clearly defined pathways for entrepreneurs at various stages of their individual journeys, in each case making clear the follow-on support and mentoring options available to them. Of course, the value of such a resource would not be limited only to female founders – all participating demographics would benefit. However, given that the present situation is particularly unsuited to women (because their access to informal entrepreneurial knowledge-network is more limited), supporting women should be prioritised in the development of this resource. For the remainder of this discussion, we’ll refer to this resource with the working title of *Entrepreneurial Pathfinder*.

For such an endeavour to work, we must take account of several important considerations. For example, given the sheer number of supporting organisations, and the resulting pathways, Entrepreneurial Pathfinder should be context-sensitive rather than presenting all available pathways and expecting entrepreneurs to locate themselves correctly within the map. The latter approach would defeat the purpose of the exercise. Instead, we envision Entrepreneurial Pathfinder being delivered as a digital platform that can properly locate entrepreneurs at the right point within the support map, based on information supplied by the user. In essence, each entrepreneur is presented with their own journey based on their current circumstances, providing a “golden-thread” through the potential support options available to them.

57 See The Rose Review, 2019

58 See www.iithub.com and womensbusinesscentre.com

The figure below depicts a (not complete) view of the support available to founders, reinforcing this need to make parsing this landscape easier.



Entrepreneurial Pathfinder must contain all credible support resources, both public and privately owned. To ensure that this is the case, it must be developed and maintained by an impartial entity, with digital expertise at its core. Such an organisation could, for example, be selected through a tender process, with impartiality a demonstrable condition of contract⁵⁹. Otherwise, the tendency to bias towards one's own offerings and deprecate others will, over time, be too great. The responsible organisation for Entrepreneurial Pathfinder must actively maintain the currency and completeness of entrepreneurial support information within the service from the nascent start-up stage to high growth potential stage.

“

Many organisations in the women's early stage business support space do not work together and they are all fighting for funding.”

Pheona Matovu
Founder, Radiant & Brighter

This solution would not only provide customised, relevant guidance to individual founders, it should also eventually form part of a wider national start-up ecosystem digital platform, spanning applicable Scottish and UK-wide resources and services. Some countries already operate key components of such a platform, bi-directionally connecting all start-ups in the country with all angel investors grant bodies etc.

For example, Israel is already providing centralised access to entrepreneurs and Investors through its Start-Up Nation platform⁶⁰. New Zealand has launched a similar solution⁶¹ and Canada's Women's Entrepreneurship strategy includes a centralised collaborative digital knowledge hub which connects women with support services at a local level⁶². It may be no coincidence that these three countries lead the world in female entrepreneurship⁶³.

59 See https://discovery.dundee.ac.uk/ws/portalfiles/portal/67137325/SB_21_73.pdf

60 See <https://finder.startupnationcentral.org/>

61 See <https://www.forbes.com/sites/startupnationcentral/2019/04/17/israel-new-zealand-partner-on-startup-ecosystem-mapping-tool/?sh=5f32cc5f47fc>

62 See wekh.ca

63 <https://www.mastercard.com/news/media/phwevxc/the-mastercard-index-of-women-entrepreneurs.pdf>

We also recommend that any public funding provided to entrepreneurial support organisations is contingent on active engagement with the Entrepreneurial Pathfinder operating team, ensuring that information is up to date, etc.

For illustration of how the Entrepreneurial Pathfinder could support entrepreneurs, consider the following, typical scenario:

Jane Doe lives in Aviemore and is a single parent who has two young children. She works part-time but has a business idea that she thinks has potential. She downloads the Entrepreneurial Pathfinder app, which, through a chatbot conversation, discovers that Jane is a very early-stage entrepreneur living in Aviemore. It alerts her to the Pop-Up Pre-Start currently operating at her local school. When she drops her children at school, she drops in before she heads off to work, to find out more.

This is her first entry point into the entrepreneurial ecosystem. Resources already outlined in **Chapter 4** then become available to her. The blend of local physical and digital support and guidance gives her the courage to apply for a Concept Fund micro-grant to test her nascent idea. She is successful in her application.

She further uses the Entrepreneurial Pathfinder app to provide visibility of potential next steps for supporting her business, with future potential finance options as well as access to other key resources to help her understand what is involved. The information is customised for Jane, based on her specific business sector and location. The app links her to other existing organisations such as the local development agency, accelerators, networking group and local and private or public digital training initiatives that may help her to create her first product version. It also presents her with details of all the organisations and providers that are currently operating in her local ecosystem that may be relevant to her situation.

For example, as a recipient of the Concept Fund she is alerted to the follow-on Journey Fund and a list of relevant angel syndicates, as well as possible HIE grant support and other Award options such as Scottish Edge.

The Entrepreneurial Pathfinder will continue to adjust the guidance presented to Jane as her business develops through its early stages.

 The above proposals are presented as specific recommendations in **Chapter 10**.

07.

Entrepreneurship education is largely missing from the education system

In this chapter, we explore the following proximate cause of female under-participation in entrepreneurship:

General education and normalisation of entrepreneurship as a valid career path is largely not present in the education system.

This point naturally affects all demographics, but its impact is greater for women in the presence of the other proximate causes. Put more positively, improvements in this area benefit all demographics, and especially women.

This proximate cause follows directly from our root causes discussed earlier, but through a different expression of them⁶⁴. Although every job that exists today, whether public or private sector, exists because someone at some time started something, our society remains suspicious of entrepreneurship as a career path. The education system reflects that suspicion, preferring to prepare young people for apparently more stable careers.

As a result, we do not, in a scaled way, develop our children's entrepreneurial awareness and technique. Even as late as the university-stage of education, undergraduates studying technical or design degrees have, in general, very limited exposure to these concepts. 73% of respondents in our Entrepreneurial Voice Survey felt that their education had not helped their path into entrepreneurship. Data from the most recent Global Entrepreneurship Monitor⁶⁵ sees Scotland significantly underperforming in entrepreneurial education.

“

Major concerns surround adequate teaching about market economic principles, attention to entrepreneurship... as well as the general encouragement of creativity, self-sufficiency, and personal initiative at school.”

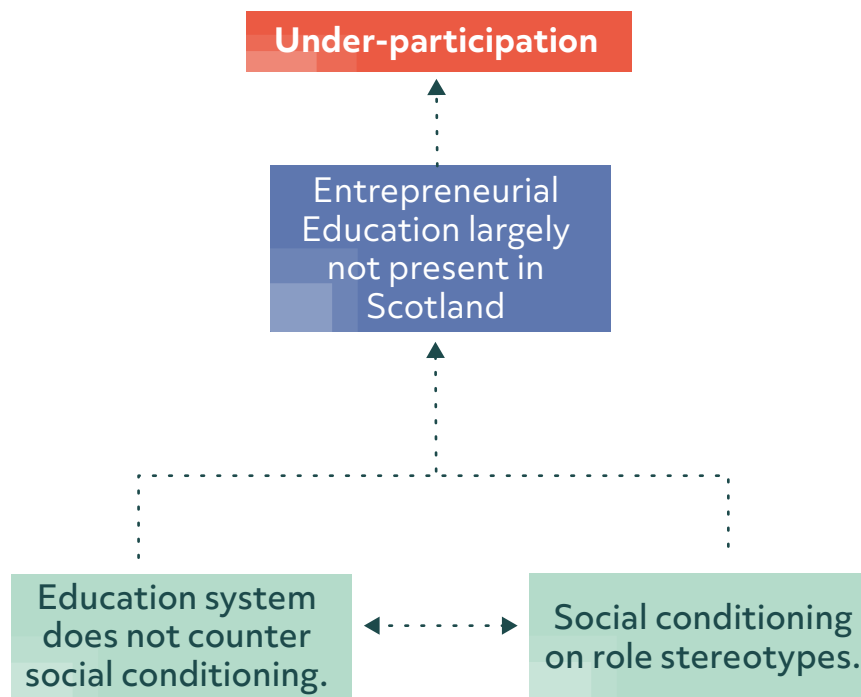
**Scotland GEM Report
2022**

64 This root-cause analysis is presented in graphical form on page 74.

65 See https://strathprints.strath.ac.uk/81609/7/Mwaura_etal_2022_Global_Entrepreneurship_Monitor_Scotland_2021_22.pdf

This situation acts to remove a large percentage of the population from entrepreneurial involvement. But it also means that those who do pursue an entrepreneurial path are less likely to be successful, especially in the context of international competition.

We can summarise the existing cause-and-effect relationships between these various mechanisms as follows (reading from bottom to top):



Addressing the Causes

In Scotland, it's common to hear people talk about a "lost culture" of entrepreneurialism, or that Scotland is "no longer an entrepreneurial nation." Such lamentations lead to a belief that it isn't possible to dramatically improve upon the current entrepreneurial performance of the nation.

But successful entrepreneurialism largely stems from a combination of mindset, technique and luck. Mindset – the appropriate mix of ambition, tenacity and belief – develops from a nation having many successful exemplars. The more we normalise entrepreneurship as a career option, and the more we arm our budding entrepreneurs with the right technique, the more exemplars we'll produce. As for luck, the greater the level of our technique, the luckier we will be. So, building entrepreneurial technique within our population is the place to start.

“

What is good for everyone is a stronger entrepreneurial workforce and education plays a critical role in achieving this.”

Chris van der Kuyl,
Entrepreneur

“

The gender gap in tech has widened, not narrowed, since I started my business many years ago. We must support and equip women and girls with the digital skillsets to encourage them to consider tech as a genuine career option”

Ann Budge, Tech
Entrepreneur

The obvious answer here, then, is to integrate courses and programmes that expose young people to entrepreneurial experiences and techniques into the school and further education system. It's important to the success of initiatives in this area that more emphasis is generally placed on experiential learning achievements rather than simply grade-attainment, with greater credit accorded to extra-curricular and vocational than is currently the case.

Young Enterprise Scotland⁶⁶ (YES) is already active in some of Scotland's schools, providing pupils with exposure to entrepreneurial ideas through various programmes. Scotland should build on this foundation, expanding programmes such as these to all secondary schools in Scotland.

However, by Secondary 3, such activities feel the squeeze from pressure for pupils to acquire formal qualifications such as National 5 and Scottish Higher awards. Therefore, we also recommend that the syllabuses of most subjects are adjusted to place greater emphasis on entrepreneurial technique than is currently the case and that this is manifest through experiential, project-based work. These changes should then be reflected in the attainment qualifications of school leavers and subsequently recognised by employers and further education organisations. For example, this change programme could start with Business Studies initially, for learning and feedback purposes, then proceeding through science and engineering subjects, etc.

There are certainly challenges to achieving this goal within Scotland's education governance model as currently configured. For a small country we have in place an extraordinarily complex arrangement of agencies and bodies that, together, have collective responsibility for education strategy.

66 See yes.org.uk/

“

There must be a ladder of enterprise throughout education and beyond, which ensures girls are encouraged, nurtured and supported in a tech and entrepreneurship career path.”

Dr Olga Kozlova,
Director Innovation & Industry Engagement,
University of Strathclyde

”

There is a digital skills gap for budding female entrepreneurs which, when closed, will open up new business opportunities fuelled by software and data

Paramjit Uppal,
Founder & CEO, AND Digital

Education Scotland, the Learning Directorate, the SFC, SQA, SDS, local authorities, unions and head teachers must be in broad agreement that an initiative should be implemented in order to make progress toward achieving the above aspirations within education. This is a somewhat inertial arrangement.

We nevertheless believe that integrating entrepreneurial thinking widely across syllabuses is a desirable and necessary end-state, with considerable benefits for the future Scottish economy. Recognising that the *National Discussion on Education*⁶⁷ and the *Independent Review of Qualifications and Assessment*⁶⁸ are currently underway, we recommend that this proposal for a more integrated approach to entrepreneurial education should be actively taken up for consideration by these initiatives.

Further developing the experiential learning approach, we recommend that a *Scottish Start-up Summer School* be instigated, providing the opportunity for senior school students to gain exposure to the start-up experience. This programme would be modelled along similar lines to those run in some universities. The summer schools would be hosted either by universities or by Start-up Scaler sites around the country in partnership with high quality programmes such as YES, Founders4Schools⁶⁹ and Social Enterprise Academy⁷⁰. Each participating pupil start-up team would receive a small bursary to support their idea, with the best start-up ideas, and/or execution of those ideas, being publicly recognised at the end of the programme.

67 See <https://www.gov.scot/news/national-discussion-on-education/>

68 See <https://www.gov.scot/publications/independent-review-of-qualifications-and-assessment-terms-of-reference/>

69 See <https://www.founders4schools.org.uk/>

70 See <https://www.socialenterprise.academy/scot/social-enterprise-schools>

We emphasise the need for the summer school to be genuinely inclusive, and available to all pupils, regardless of race, gender, family financial situation, or location. One consequence of this goal is that consideration must be given to ensuring that support is provided such that pupils from disadvantaged backgrounds are able, in practice, to participate.

Beyond school level, the *Entrepreneurial Campus* accreditation, as described in STER⁷¹ and NSET⁷² should be fully implemented without further delay. This ensures that university-level and college-level students are systematically exposed to entrepreneurial ideas and experiences.

In regard to the above discussion, a highly important, related area concerns STEM (Science, Technology, Education and Mathematics) subjects. Many start-ups, especially those with high-growth potential, are dependent on STEM skills. The existing extreme gender imbalance in participation rates for STEM subjects in our schools and universities therefore heavily influences later entrepreneurial gender imbalances⁷³. This is in addition to the general economic impact of a large section of our population not participating from industries built upon these foundational subjects.

It is beyond the scope of the present report to fully diagnose and address the issue of the STEM gender imbalance in education. However, such a diagnosis - and subsequent action - is required, if we are to fully maximise the effectiveness of recommendations in the present report. We therefore recommend that an action-oriented report of equivalent scope and depth to the present report is commissioned on the issue of STEM gender imbalance within education.



The above proposals are presented as specific recommendations in **Chapter 10: Consolidated Recommendations.**

71 See <https://www.gov.scot/publications/scottish-technology-ecosystem-review/>

72 See <https://www.gov.scot/publications/scotlands-national-strategy-economic-transformation/>

73 See Gender Balance Briefing, Education Scotland, https://education.gov.scot/nih/Documents/Sciences/SCI15_GenderBalanceinSTEM/GenderBalanceBriefing_tcm4-869326.pdf

08.

Women receive far less investment than men

In this chapter, we explore the following proximate cause of female under-participation in entrepreneurship:

Women receive far less investment than men from venture capital firms, syndicates and related sources

This proximate cause is ultimately established by the same two root causes already examined in the previous analyses.⁷⁴ Recapping, from the earliest age, we experience intensive societal conditioning on what constitutes “normal” gender roles. And the education programmes – from birth to adulthood – required to intensively counter and correct this conditioning, are largely absent from our society.

In the context of our present focal area, these root causes together result in an investment industry where the overwhelming majority of venture capital (VC) and syndicate partners are male⁷⁵.

In theory, it need not follow that VCs therefore aren’t knowledgeable or comfortable about investing in domains often proposed by female founders, but in practice it frequently does. As a result, potentially large opportunities in, for example, women’s health (often referred to as Femtech⁷⁶) are under-invested in relative to the market opportunity.⁷⁷

“

I did 119 pitches to VCs, mostly in London. I met only two women during these pitches...”

Rachel Jones, Founder & CEO, Snapdragon

“

Mention the words menopause or period app and see how quickly the room empties”.

Entrepreneur, interviewee

74 This root-cause analysis is presented in graphical form on page 81.

75 See https://www.bvca.co.uk/Portals/0/Documents/Research/2019%20Reports/UK_VC_and_Female_Founders_Report_British_Business_Bank.pdf

76 Femtech is a term that refers to diagnostic tools, products, services, wearables and software that use technology to address women’s health issues. Femtech companies also provide products that encompass general health conditions that affect more women than men or affect them differently than they affect men, such as osteoporosis.

77 See www.beauhurst.com/blog/uk-femtech-startups/

The combination of this issue and the general existing sparsity of female founders means that investing in such founders is not the norm⁷⁸ and therefore appears to be riskier in the absence of a high number of successful prior exemplar investments.

Another factor acting to limit investment in women is a consequence of our discussion in [Chapter 4](#) concerning the logistical constraints placed on women as a result of, on average, acting as both the home manager and primary carer. These burdens, in the absence of mitigating support, genuinely make investing in women riskier, because women in these roles have more demands on their time and energy. Further, they tend to guide women to less risky business propositions, which also carry a lower likelihood of outsized returns. Such an investment category is less attractive to investment firms, whose business model typically involves investing in a portfolio of businesses in which each has the potential to deliver a greater than 10X return. This does not equate to the category not being valuable to the economy, simply that the propositions are less aligned to the standard business model of venture capital firms.⁷⁹

“

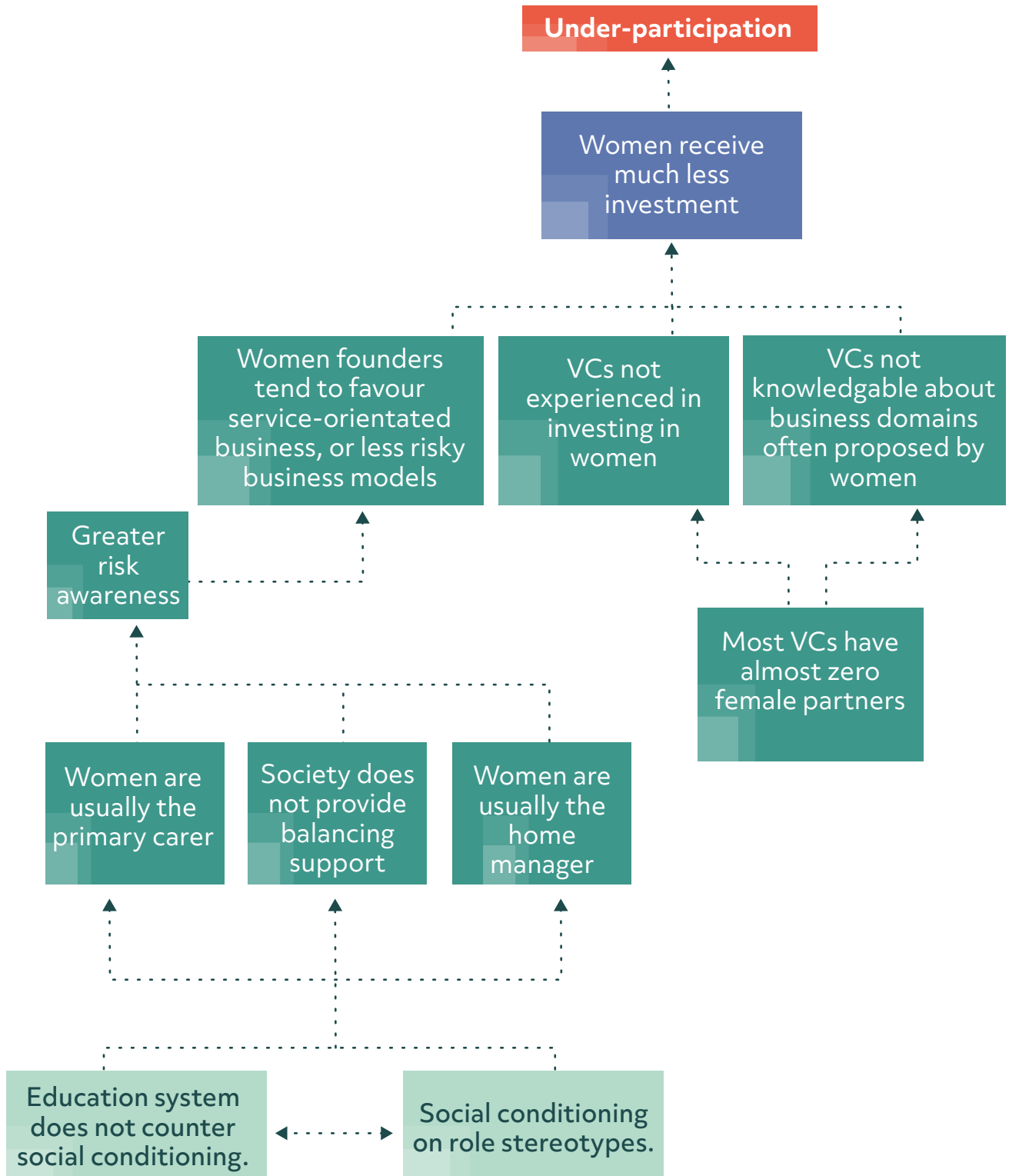
Private equity and venture capital is making progress, but a lot more needs to be done to attract, retain and develop female talent, including for senior investment roles. This will improve our industry in terms of performance, impact and culture, as well as benefitting the companies we invest in.”

**Calum Paterson,
Managing Partner,
Scottish Equity
Partners**

78 See https://www.british-business-bank.co.uk/wp-content/uploads/2019/01/UK_VC_and_Female_Founders_Report_British_Business_Bank.pdf

79 https://www.british-business-bank.co.uk/wp-content/uploads/2019/01/UK_VC_and_Female_Founders_Report_British_Business_Bank.pdf

We can summarise the cause-and-effect relationships between these various mechanisms as follows (reading from bottom to top):



Addressing the Causes

We have already discussed, in [Chapter 4](#), an approach that could start to address the underlying *root* causes identified above, we'll therefore focus here on actions that mitigate the issues resulting from them. In summary, from our diagram above, these are:

- Most investment firms have very few female senior investment staff, leading to an ignorance about domains often favoured by female founders, and an unfamiliarity in investing women.
- Female founders frequently present business ideas that don't match the typical investment targets of investment firms.

As we have seen from the cause-and-effect tree presented above, investment partners often lack sufficient knowledge of domains presented by female founders, which reduces the likelihood of them investing. The rarity of such investment also leads to a negative feedback loop being established: investing in women feels riskier because it is uncommon, which prolongs the rarity of investing in female founders, and so on. Morgan Stanley describe this as 'The trillion dollar blind spot', while the majority of investors perceive the funding landscape as balanced, their actual investments in multi-cultural and women-owned businesses is highly skewed.⁸⁰

The *Investing in Women Code*⁸¹ is helpful to our general goals because it requires signatory companies to publish their investment demographics with respect to gender and to bring more focus to such demographics within their businesses. The most recent (2022) annual report⁸² on the progress of signatories to the code shows modest performance improvements from the baseline year, 2019, though it is still too early to declare these to be a trend, especially with the arrival of Covid-19 in the middle of this sample period. The scheme is, of course, entirely voluntary, so it is not clear how non-signatories have performed over the same period.

Going beyond the *Investing in Women Code*, we believe that the best way to improve the investment balance is for investment firms to appoint more women as partners, and for government to create an incentive for them to do so.

80 See <https://www.morganstanley.com/ideas/trillion-dollar-blind-spot-infographic>

81 See www.gov.uk/government/publications/investing-in-women-code

82 See ukbaa.org.uk/wp-content/uploads/2022/06/investing-in-women-code-annual-report-2022.pdf

“

We must ensure that those who have historically been excluded, such as racialised women entrepreneurs, have a seat at the table in systems change, otherwise encoded bias will continue”

**Pheona Matovu,
Founder, Radiant &
Brighter**

“

We need to recognise that where we are today is simply not good enough and that setting the bar higher is essential if we are to see meaningful and accelerated change in diversity within the investment community.”

**Malcolm Kpedekpo,
Co-Founder Panoramic
Growth Equity**

The Scottish Government through its enterprise agencies and other investment channels, frequently invests alongside private investment organisations, such as venture capital firms and investment syndicates. We recommend that co-investment formally becomes contingent on participating investors having minimum levels of women employees in senior investment roles⁸³, subject to a grace period and specific conditions. The same should apply to fund managers where the Scottish Government invests as a limited partner.

Specifically, and to allow adaptation time, a grace period for this requirement should be instigated as follows: Enterprise agencies will only co-invest with private investment firms on the basis that at least half of the other entities participating in the investment round have at least 20% female partners within five years of the date of publication of this report. And, within 18 months of the publication of this report, participating investment firms must publish a plan indicating how they intend to reach this goal, if they wish to continue to participate in co-investment rounds.

We also recommend that, where organisations such as Scottish National Investment Bank (SNIB) acts as a Limited Partner to “cornerstone” a fund, such participation should be contingent on the fund manager having at least 20% of its senior investment personnel being women .

Again, to allow adaptation time, a grace period for this requirement should be instigated, requiring that this target be met within five years of the publication date of this report.

83 i.e. the most senior grade of investor employed by the firm.

Would such an approach improve outcomes for female founders? Evidence from the investment/awards initiatives Scottish EDGE⁸⁴ and Converge Challenge⁸⁵ demonstrates that, as a result of efforts to diversify judging panels, selection candidate pools, finalists and winners have become more diverse, particularly in mixed-gender founder groups.

We also recommend, in the shorter term, that whilst outcomes from other root cause interventions filter through to become established practice, that co-investment models operated by Scotland's enterprise agencies, routinely invest a greater amount in start-ups with at least one female founder.⁸⁶

Specifically:

VC/Syndicate investment	50% (the baseline amount).
Co-Investment	Matches baseline amount plus '20% of baseline amount'.
For example:	
VC/Syndicate investment	£100,000
Co-investment	£100,000
Female Founder Increment	£20,000

Different implementations exist as to specifically to achieve this outcome, which we leave as a matter for enterprise agencies to decide.

Earlier, in [Chapter 4](#), we introduced the *Concept Fund*, available within the Pre-starts network to provide easy-to-access micro-grants to support very early-stage founders and pre-founders in testing – and gaining experience in testing - concepts.

84 <https://www.scottishedge.com/>

85 <https://www.convergechallenge.com/>

86 A founder in this context being defined as an employee of the business, holding at least 25% of the founder share capital and to the satisfaction of the development agency, spends at least 20 hours per week actively working in the business.

“

We need to overshoot on our diversity targets if we are to have any chance of achieving longer term equity”

**Tim Allan, Founder,
Tricorn Capital**

“

The investment landscape is generally skewed to a narrow demographic. There needs to be a concerted effort to drive changed behaviour here by adapting investment policies that promote a more diverse entrepreneur population.”

**Jenny Tooth, Chair
UKBAA**

A critical drop off in female entrepreneurs occurs from the nascent concept stage through the pre- and scaling start-up stages. This is evidenced in the low number of women-led start-ups receiving funding from syndicates and other finance sources. For example, angel syndicates interviewed for this review stated that, on average, less than 15% of the pitches they received came from women-led businesses. Even when turning to so-called friends-and-family funding, only 14% of women-led businesses receive funding from this source compared to 65% of male-led businesses⁸⁷ (a factor of five times less).

This situation is exacerbated by existing background factors such as the current phenomenon of angel capital migrating from earlier to relatively later stage investments, and the on-going poor availability of traditional debt funding facilities to early stage, high-risk start-ups.

Given this later-stage sparsity in investment available to female founders, a meaningful intervention here has the potential to be transformative. This is the rationale for the introduction of the *Journey Fund*, a companion fund to the Concept Fund.

The Journey Fund is designed to support under-represented founders whose business ideas are more developed than during the *Concept Fund* stage. The Journey Fund would make grants to qualifying founders in these under-represented demographics of up to £50,000. The intention is to provide a greater runway for product concept development and business growth readiness before requiring access to private funding.

We expect that this fund would be operated by Scotland's enterprise agencies in partnership with Scotland's private investment sector⁸⁸. It would act as a springboard for promising early-stage start-ups as their businesses move into the more traditional investment ecosystem.

87 See [Appendix A](#) - HCE Research Strathclyde University in conjunction with mnAI.

88 A similar partnership model was successfully deployed in 2020, during the Covid crisis.

Initiatives of this nature, currently deployed in other territories such as Northern Ireland, demonstrate the viability and impact of such a fund.⁸⁹ In this example, 85% of women-led businesses that received this early-stage grant went on to successfully secured angel funding.

Multiple pathways could exist towards the Journey Fund. For example, one such pathway would be where the operator of the Pre-starts network determines that a start-up within its network is ready for Journey Fund consideration, which essentially signifies that the start-up has potential longer-term viability or scale-up potential. At this point, the start-up may enter the Scaler network or may take a different path. The grant is available in either case. Note also that the criteria for awarding this grant do not include that the start-up must demonstrate the potential for a 10X or greater return on investment.

These two grants, the Concept and Journey Funds, working in tandem, will increase female start-up participation. This, in turn, will increase the pipeline of founders successfully scaling their businesses and, consequently, will accelerate their participation rates across all later development stages.

These two funds, the Concept and Journey Funds, working in tandem, will increase female start-up participation. This, in turn, will increase the pipeline of founders successfully scaling their businesses and, consequently, will accelerate their participation rates across all later development stages.

Finally, we recommend that Scotland act strategically to establish the country as a global centre for Femtech⁹⁰ start-ups. Femtech start-ups exhibit both female and male founders, with a skew towards the former. The fund would support start-ups with high growth potential. Therefore, such an approach, if successful, would not only enable Scotland to exploit a market with vast potential - an estimated \$50bn globally⁹¹, it would also help to normalise investment in female founders. Moreover, this focal area continues Scotland's proud heritage as a leader in life sciences and healthcare innovation. With Femtech, this leadership takes the form of recognising that the vast majority of existing medical research and development activity significantly under-focuses on women's health⁹².

89 See www.investni.com/support-for-business/proof-of-concept-techstart

90 Femtech is a term that refers to diagnostic tools, products, services, wearables and software that use technology to address women's health issues. Femtech companies also provide products that encompass general health conditions that affect more women than men or affect them differently than they affect men, such as osteoporosis.

91 www.gendereconomy.org/the-rise-of-femtech/

92 See Invisible Women by Caroline Criado Perez

“

If we want to address the acute gender imbalance that exists in the finance and growth capital environment, we should encourage more women into technology-based businesses, which have the potential to become high-growth enterprises."

Anne Boden, CEO & Founder, Starling Bank

Accordingly, the government should leverage ecosystem assets under its influence in a coordinated fashion to encourage Femtech start-ups to locate in the country, and to encourage investment in them.

For example, the Scottish National Investment Bank should cornerstone a Femtech fund, the Scaler network should establish a Femtech specialisation within the network, and the Scottish Technology Ecosystem Fund should allocate a portion of its budget to supporting Femtech events.

▲ The above proposals are presented as specific recommendations in **Chapter 10 : Consolidated Recommendations.**

“

Investing in women is not a charity nor a philanthropic endeavour. Frankly, it makes good business sense. "

Priya Oberoi, Founder Goddess Gaia Ventures

09.

Lack of consistent data on under- participation

The ability to access complete and accurate data is critical to any analysis, whilst the creation of on-going progress tracking KPIs must also be founded on resilient and robust information, reflective of the dynamic environment or ecosystem that is being measured. It's also important to gather information from other ecosystems to enable us to measure progress against similar programmes in other domains.

However, currently in Scotland there is a striking lack of dynamic trend data on entrepreneurial participation rates, and almost no readily available data disaggregated by gender and ethnicity. This gender data gap is also prevalent in many other economies and industries.⁹³ and the data void has been identified in other reports concerning women in entrepreneurship.⁹⁴

Certainly, impressive point-in-time reviews have been conducted⁹⁵, but the country lacks a centralised, aggregated database which enables on-going interrogation and analysis of developing participation trends. Ultimately, this makes it impossible to measure the progress or efficacy of any related funded programmes and initiatives designed to drive both diversity and inclusion or to transform wider entrepreneurship participation and growth.

An important contributing factor to this deficiency is the lack of a specific obligation on government or other agencies and private sector stakeholders to make available standardised gender-disaggregated and ethnicity-disaggregated data regarding recruitment, investment and entrepreneurial participation.

To mitigate this in the short term, in a collaboration between this report programme, the data specialist mnAI, and the University of Strathclyde, we carried out the most detailed data analysis yet conducted of Scotland's entrepreneurial sector, dimensioned by gender and ethnicity. This allowed us to carry out a robust analysis of entrepreneurial participation at the current point in time. A summary of these results can be found in [Appendix A](#).⁹⁶

However, a more permanent and continuous solution is essential to measuring the results of the implementation of most of the recommendations in this report.

93 See Invisible Women by Caroline Criado Perez

94 See https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/784324/RoseReview_Digital_FINAL.PDF

95 For example, see the Rose Review (2019), Mastercard Index for Women in Enterprise (2021) & <https://www.thegenderindex.co.uk/report/>

96 Subsequent to the publication of this report, the University of Strathclyde will also provide further detailed analysis, when it publishes a future paper based on this data.

“

Having consistent disaggregated data such as gender and ethnicity that is reflective of the entire Scottish entrepreneurial landscape, would really help us all in implementing effective programs aimed at increasing participation in these under-represented groups.”

**Kerry Sharp, Director,
Entrepreneurship &
Investment, Scottish
Enterprise**

Therefore, we recommend that a common, centralised database be made accessible to stakeholders within the entrepreneurial ecosystem, combining both public and private sector entrepreneurship/start-up statistics. The platform should be capable of disaggregating data, at least by gender and ethnicity dimensions. This platform could also include funding characteristics and more sophisticated intersectionality characteristics if appropriate. It is said that “what gets measured gets done”, and we hope and expect that this data will serve to improve understanding of the nation’s wider entrepreneurial ecosystem trends and landscape, besides supporting and driving more diverse participation.

Here, the collaboration across public and private sector participants will be critical to its creation and to maintaining its on-going value into the future. It could also serve as a benchmark for all stakeholders to monitor their progress against performance criteria.

The government should make it compulsory that any applicable entrepreneurial organisations receiving financial assistance and those in co-investment arrangements involving public money should make anonymised data available to this platform, such data being dependent on the nature of the activity involved. The data criteria should be defined within the platform, enabling participating organisations to capture and track data in a standardised format.

For example, investment organisations should be required to provide data relating to anonymised partner and investment staff demographics and the demographics of those start-ups receiving investment from the organisation, where such investment was part of a co-investment operation with the government or one of its agencies. This type of approach is not new, and has been recommended by the investment community previously.⁹⁷

The government should publish an annual analysis of entrepreneurship participation trends, using data from this platform. This process should be integrated into the government's Wellbeing Economy Monitor reporting cycle.⁹⁸

 The above proposals are presented as specific recommendations in **Chapter 10**.

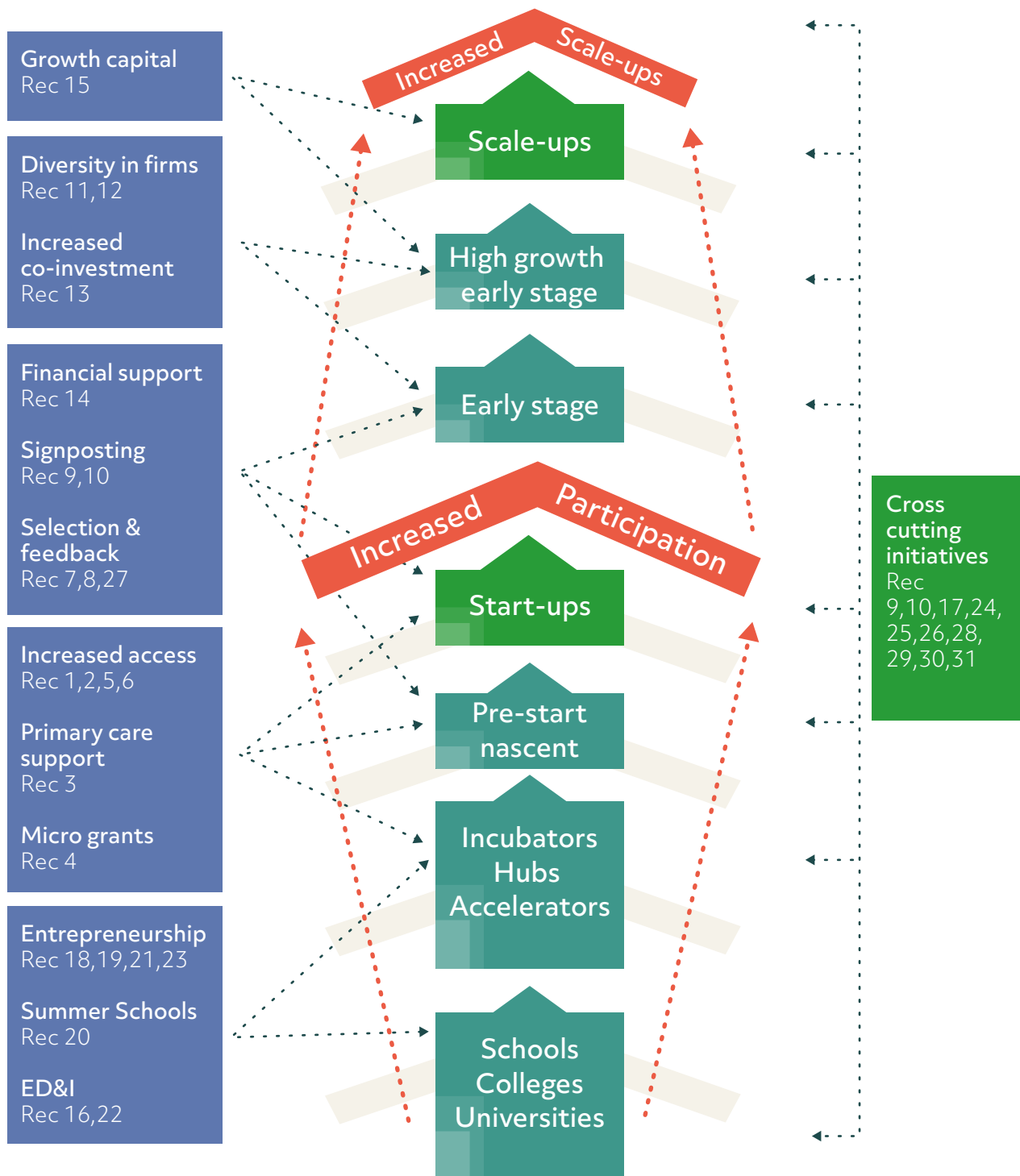
97 See https://www.british-business-bank.co.uk/wp-content/uploads/2019/01/UK_VC_and_Female_Founders_Report_British_Business_Bank.pdf

98 See <https://www.gov.scot/news/creating-a-wellbeing-economy/>

10.

Consolidated Recommendations

This section gathers all of the recommendations discussed in prior sections into one numbered list for ease of reference and future implementation. The illustration below places the various recommendations within the context of a typical start-up founder's journey through the ecosystem.



Recommendations in the list below are also grouped into the following domain categories, according to their shared areas of focus:

1. Physical and Social Entrepreneurial Infrastructure
2. Entrepreneurial Access Pathways
3. Investment
4. Education and Society

Physical and Social Entrepreneurial Infrastructure

- Rec. 1. **Pre-Scalers should be extended to support a Pop-up variant, optimized to Primary-Carer needs, in addition to the fixed-site model. As part of this, Pre-Scalers should be renamed to Pre-Start centres.**

To address the geographical and time constraints acting upon entrepreneurs in primary carer and home manager roles, we recommend that the Pre-Scaler network concept as defined in *Scotland's National Strategy for Economic Transformation*⁹⁹ be extended as follows: Pre-Scalers should also operate as a Pop-Up model, travelling to the places near to where people in primary carer roles are most often located. Such a model maximises target audience reach, cost-effectiveness and the use of scarce mentoring resources. It increases access for women and other under-represented groups.

Pop-up locations must be *where primary carers already are*, for example, utilising empty retail spaces in shopping centres, libraries, schools, colleges and similar

We also note that the term *Pre-Scaler* is not properly descriptive of the types of early-stage businesses that would likely use them. Certainly, some of the companies that are supported in their early stages in this environment will go on to significant scale. But many others, though collectively very important to the nation's economy, will not - and should attempt to - grow to significant scale. Indeed, for that reason, the term *Pre-Scaler* may dissuade many early-stage founders from approaching the service at the outset. Therefore, we propose to change the name *Pre-scaler* to *Pre-Start centres* (or, *Pre-starts*, for short). The Pop-up variant, which is the main focus of this discussion, will therefore be referred to as Pop-ups Pre-Start (or *PUPS*). And, when we refer to Pre-start centres and Pop-up Pre-starts collectively, we'll use the term *Pre-starts network*.

99 See <https://www.gov.scot/publications/scotlands-national-strategy-economic-transformation/>

PUPS, like fixed-location Pre-start centres provide start-up incubation, access to founder education resources, access to business and related services, access to business mentors, access to relevant expertise, including digital marketing and web skills, a peer-learning and community environment and including shared access to resources such as a 3D printing capability. and a peer-learning and community environment

A PUPS would remain at a given location for anything from a few days to a month, depending on demand and other factors, and it would return to that location frequently and predictably.

Rec. 2. **The Pre-starts network (including Pop-up Pre-starts) should operate with two membership levels. Associate Membership level and Full Membership level**

Associate Membership automatically applies to all citizens with an interest in starting a business. It enables access to presentations, events, networking days, mentoring sessions etc. and ensures that the tentative, the apprehensive and the curious have a relatively low bar to exploring and developing their entrepreneurial interest and confidence. *Full Membership* applies to those entrepreneurs whose start-up concept or stage of development is considered by the Pre-starts operator to be promising enough to merit full-entry. Full Membership carries benefits, including access to some Tech-Scaler/Start-up Scaler training programmes. The Full Membership level is re-assessed on an annual basis.

Rec. 3. **The Pre-starts network should provide financial assistance to meet extended childcare costs for entrepreneurs with Full Membership, who are also primary carers, for the period of one year.**

To further address the time constraints acting upon entrepreneurs in primary carer and home manager roles, the network should provide up to one full year of financial assistance towards extended childcare costs (i.e., from 3:00pm-6:00pm, weekdays) to Full Members of the Pre-starts network. In order to manage budgets predictably, The Central Operator (see next requirement) of the network awards this assistance by stack-ranking all start-up concepts presented by members through a fair process and allocating grant support according to available budget in any given year.

- Rec. 4. **Each Pre-Start centre and Pop-Up Pre-Start should include a *Concept Fund*, awarding micro-grants to associate members for proof-of-concept development.**

The purpose of this fund, which makes micro-grant awards of up to £1000, is to support potential start-up founders to test concepts, and to build confidence and entrepreneurial experience prior to incorporating a company. The Pre-starts network, combined with judicious (including repeated) application of the Concept Fund can help potential entrepreneurs explore ideas without being “above the radar” (compared to, for example, incorporating a start-up and applying for funding through traditional channels).

The Concept Fund is intended to work alongside the *Journey Fund* discussed in Rec. 14.

- Rec. 5. **The network should consist of a Central Operator of the Pre-starts network working with Franchise Operators across the country.**

Scotland currently has a variety of organisations providing variations on subsets of both the fixed-location Pre-Start centres and its Pop-up variant. For delivery purposes, we propose a model whereby there exists a *Central Operator*, of the overall network, responsible for central administration of various elements of the network. The Central Operator would then work with *Franchise Operators* around the country to deliver the network. We envisage that the Franchise Operators would be partly drawn from existing organisations, who would adapt their services to meet the requirements of the Pre-starts network.

This Central Operator/Franchise Operator model encourages a more collaborative approach between existing organisations in delivering the benefits of network. It utilises their energy and experience whilst ensuring consistency and a minimum service footprint across the network. The Central Operator would also be responsible for managing central processes (such as membership, childcare grant and concept fund management) and resources (such as 3D printer access).

- Rec. 6. **The design and implementation of the Pre-starts network, including Pop-up Pre-starts should involve consultation with a panel of founders from under-represented demographics.**

The overall effect of the above recommendations is to establish in Scotland an integrated nationwide entrepreneurial incubation, education and support platform, and one that is properly adapted to the needs of under-represented demographics. To ensure that we stay true to these goals during implementation and beyond, we recommend that the design and development of this platform includes regular input and consultation with a panel of founders from under-represented demographics.

- Rec. 7. **Funding to programmes operated by Ecosystem Builders should become formally contingent on both the selected participants and selection panels themselves comprising diverse membership.**

This applies where the government directly, indirectly or in-kind funds or part-funds incubation, acceleration, networking and founder development programmes (referred to here, collectively, as Ecosystem Builders).

- Rec. 8. **Funding to programmes operated by Ecosystem Builders should be formally contingent on the organisations providing detailed, transparent feedback to founders rejected from participation as a result of some selection process, with particular focus on women.**

Consider the experience of a female founder who has been rejected from entry into a programme as a result of such a selection event. How the Ecosystem Builder manages this rejection process can make the world of difference to the on-going motivation of the founder in question. The difference depends on the quality of the explanation given to that founder as to why she was unsuccessful. In the absence of high-quality (or any) feedback, the founder is left wondering whether she was rejected because her chosen business domain is not considered relevant to this particular Ecosystem Builder's focal area, or alternatively whether it's just that her idea or execution is lacking within an otherwise valid chosen domain. Or was it simply sexism? Proper feedback is the difference between remotivating founders to improve and learn on the one hand, and removing them from entrepreneurial activity completely on the other.

We also recommend that Ecosystem Builders seek feedback from rejected founders from under-represented demographics on the selection process operated by the organisation, and have procedures in place to actively consider this feedback, making changes to process where appropriate.

Entrepreneurial Access Pathways

- Rec. 9. **An *Entrepreneurial Pathfinder* platform should be created to provide context-specific information about all available support options to entrepreneurs, depending on the current stage of their entrepreneurial journey.**

Entrepreneurial Pathways is a centralised resource with clearly defined pathways for entrepreneurs at various stages of their individual journeys, in each case making clear the follow-on options available to them. Of course, the value of such a resource would not be limited only to women – all participating demographics would benefit. However, given that the present situation is particularly unsuited to under-participating demographics (because they do not have the same level of access to informal entrepreneurial networks as majority demographics), these should be prioritised in the development of this resource.

Given the sheer number of supporting organisations, and the resulting pathways, *Entrepreneurial Pathfinder* should be context-sensitive rather than presenting all available pathways and expecting entrepreneurs to locate themselves correctly within the map. The latter approach would defeat the purpose of the exercise.

- Rec. 10. ***Entrepreneurial Pathfinder* should be operated by an impartial organisation, acting independently of any existing specific support organisation.**

Entrepreneurial Pathfinder must contain all credible support resources, both public and privately owned. To ensure that this is the case, it must be developed and maintained by an impartial entity, with digital expertise at its core. Such an organisation could, for example, be selected through a tender process, with impartiality a demonstrable condition of contract. Otherwise, the tendency to bias towards an organisation's own offerings and to deprecate others will, over time, be too great. The responsible organisation for *Entrepreneurial Pathfinder* must actively maintain the currency and completeness of entrepreneurial support information within the service.

We also recommend that public funding for entrepreneurial support organisations should be contingent on active engagement with the *Entrepreneurial Pathfinder* operating team, ensuring that information is up to date, etc.

Investment

- Rec. 11. **Co-investment arrangements with private investment organisations should become contingent on participating investment firms having minimum levels of women in senior investment roles.**

The Scottish Government through its various develop agencies, frequently invests alongside private investment organisations, such as venture capital firms and investment syndicates. We recommend that co-investment formally becomes contingent on participating institutional investors above a threshold size having minimum levels of women in senior investment roles¹⁰⁰, subject to a grace period and specific conditions. The same consideration should apply to fund managers where the Scottish Government invests as a limited partner.

Specifically, and to allow adaptation time, a grace period for this this requirement should be instigated as follows: Enterprise agencies will only co-invest with private investment firms on the basis that at least half of the other entities participating in the investment round have at least 20% female partners within five years of the date of publication of this report. And, within 18 months of the publication of this report, participating investment firms must publish a plan indicating how they intend to reach this criterion, if they wish to continue to participate in co-investment rounds.

- Rec. 12. **Where the Scottish National Investment Bank acts as a Limited Partner to “cornerstone” a fund, such participation should be contingent on the fund manager having at least 20% of its senior investment personnel being women.**

Again, to allow adaptation time, a grace period for this requirement should be instigated, expiring five years from the date of publication of this report.

100 i.e., the most senior grade of investor employed by the firm.

Rec. 13. **Co-investment models operated by Scotland’s Enterprise agencies should routinely invest a greater percentage amount in start-ups with at least one female founder.**

Specifically:

VC/Syndicate investment	50% (the baseline amount).
Co-Investment	Matches baseline amount ‘plus 20% of baseline amount’.
For example:	
VC/Syndicate investment	£100,000
Co-investment	£100,000
Female Founder Increment	£20,000

Rec. 14. **A Journey Fund should be introduced to provide additional grant support to women, minority-ethnic founders and founders from disadvantaged backgrounds whose start-ups develop beyond the Concept Fund stage.**

The purpose of the Journey Fund is to provide under-represented founders a longer runway in which to bring their start-ups to demonstrable viability, recognising the higher level of friction to accessing finance that otherwise exists for founders in these demographics. The fund would make grants of up to £50,000 available to under-represented founders whose businesses are beginning to move beyond the early stage of start-up development.

See also the related 'Concept Fund' recommendation in Rec. 4.

Rec. 15. **Scotland should act strategically to establish the country as a global centre for Femtech start-ups.**

Femtech¹⁰¹ start-ups exhibit both female and male founders, with a skew towards the former. Therefore, such an approach, if successful, would not only enable Scotland to exploit a market with vast potential, it would also help to normalise investment in female founders.

Accordingly, the government should leverage ecosystem assets under its influence in a coordinated fashion to encourage Femtech start-ups to locate in the country, and to encourage investment in them.

For example, SNIB should cornerstone a Femtech fund, the Scaler network should establish a Femtech specialisation within the network, and the Scottish Technology Ecosystem Fund should allocate a portion of its budget to supporting Femtech events.

Education and Society

Rec. 16. **Educational material to counter gender role stereotyping should be integrated into all years of both Primary and Secondary school level education.**

This should cover both primary-carer stereotyping, and home-manager role stereotyping.

Rec. 17. **A continuous, long-term public education programme targeted at adults and employers should be run on multiple media channels.**

This campaign should contribute to dismantling stereotypical gender roles, including primary carer and home manager responsibilities.

101 Femtech is a term that refers to diagnostic tools, products, services, wearables and software that use technology to address women's health issues. Femtech companies also provide products that encompass general health conditions that affect more women than men or affect them differently than they affect men, such as osteoporosis.

- Rec. 18. **Rec. 18. Experiential entrepreneurial programmes, such as those currently run by Young Scotland (YES) in some schools should be expanded to be all secondary schools in Scotland.**

As part of this initiative, we also recommend that more emphasis is placed on experiential learning achievements rather than simply grade-attainment, with greater credit accorded to extra-curricular and vocational than is currently the case.

- Rec. 19. **The syllabuses of most subjects should be adjusted to place greater emphasis on entrepreneurial technique than is currently the case, manifested through experiential, project-based work.**

By Secondary 3, optional project-based activities, such as experiential entrepreneurship programmes are the squeezed by the pressure for pupils to acquire formal qualifications such as National 5 and Scottish Higher awards.

Therefore, we recommend that syllabuses of most subjects are adjusted to place greater emphasis on entrepreneurial technique than is currently the case and that this is manifest through experiential, project-based work. These changes should then be reflected in the attainment qualifications of school leavers and subsequently recognised by employers and further education organisations. For example, this change programme could start with Business Studies initially, for learning and feedback purposes, then proceeding through science and engineering subjects, etc.

- Rec. 20. **A Scottish Start-up Summer School should be instigated, providing the opportunity for senior school students to gain exposure to the start-up experience.**

This programme would be modelled along similar lines to those run in some universities. The summer schools would be hosted either by universities or by Start-up Scaler sites around the country. Each participating pupil start-up team would receive a bursary to support their idea, with the best start-up ideas, and/or execution of those ideas, being publicly recognised at the end of the programme. Again, such a programme places more emphasis on experiential emphasis.

We emphasise the need for the summer school to be genuinely inclusive, and available to all pupils, regardless of race, gender or family financial situation. One consequence of this goal is that consideration must be given to ensuring that support is provided such that pupils from disadvantaged backgrounds are able, in practice, to participate.

- Rec. 21. **The *Entrepreneurial Campus* accreditation, as described in STER and NSET should be fully implemented.**

This initiative ensures that university-level and college-level students are exposed to entrepreneurial ideas and experiences as a core part of their further and higher education experience.

- Rec. 22. **All university and college courses should include mandatory diversity and equality education as part of the first-year syllabus.**

This shouldn't be the tick-box type, but, rather, should be tailored appropriately to illuminate each applicable subject's under-participation origins, on-going exclusionary factors, in addition to more general diversity and equality best-practice education.

- Rec. 23. **The government should commission and publish an equivalent report bringing forward concrete recommendations to repair the gender gap in STEM subjects at school, college and university level**

Many start-ups, especially those with high-growth potential, are dependent on STEM skills. The existing extreme gender imbalance in participation rates for STEM subjects in our schools and universities therefore heavily influences later entrepreneurial gender imbalances. This is in addition to the general economic impact of a large section of our population not participating from industries built upon these foundational subjects.

It is beyond the scope of the present report to fully diagnose and address the issue of the STEM gender imbalance in education. However, such a diagnosis - and subsequent action - are required, if we are to fully maximise the effectiveness of recommendations in the present report. We therefore recommend that an action-oriented report of equivalent scope and depth to the present report is commissioned on the issue of STEM gender imbalance within education.

Rec. 24. **The government should instigate a “*Fair Society Champion*” accreditation for employers**

Attempting to change the role stereotypes associated with women is a useless endeavour if we don’t, in parallel, change those stereotypes that attach to men. Prospective female entrepreneurs will make little progress if their male partners must meanwhile adhere to the primary-breadwinner stereotype inside their workplaces, for fear of otherwise being penalised in their careers.

This accreditation, an extension of the *Fair Work Framework* is awarded to those employers who can demonstrate that they embrace, and are contributing towards, a fair society through actions such as:

- a. Actively encouraging and supporting men to take up their full shared parental leave.
- b. Actively encouraging men as well as women to take on carer responsibilities, providing flexibility with regards to working hours pattern and location.
- c. Regularly educating employees with regard to the home manager and primary carer burden.
- d. Instigating processes and training to reduce the likelihood that primary carers, including men, are penalised or regarded as “not committed”.

Rec. 25. **Government contracts should be awarded only to those suppliers who have attained the *Fair Society Champion* accreditation, or are working to attain it within a reasonable, bounded timeframe.**

This approach is consistent with other requirements of the government’s Fair Work Framework.

Rec. 26. **All organisations contributing services to the entrepreneurial ecosystem receiving financial support from the government should demonstrate that a programme is in place to provide all staff with mandatory diversity and equality training.**

Examples include incubators, accelerators, conferences, scale-up programmes.

Rec. 27. **Scotland should fully implement the Misogyny and Criminal Justice Working Group recommendations contained in the report: *Misogyny: a human rights issue*.**

There is currently no existing law in Scotland directed against misogyny. However, the Misogyny and Criminal Justice Working Group published the report *Misogyny: a human rights issue* in March 2022. The report recommends:

- 1) a new statutory aggravation to relate to misogynistic conduct where a crime such as assault, criminal damage/vandalism or threatening or abusive behaviour is aggravated by misogyny
- 2) a new offence of stirring up hatred against women
- 3) a new offence of public sexual harassment of women, and
- 4) a new offence of issuing threats of, or invoking, rape or sexual assault or disfigurement of women and girls online and offline

At the time of writing, these recommendations have been accepted in principle by the Scottish Government, but not yet implemented.

A timetable for completion of the detailed review of these recommendations, and their implementation, should be published by the Scottish Government.

Rec. 28. **A gender- and ethnicity-disaggregated common database should be made accessible to stakeholders within the entrepreneurial ecosystem,**

The database should combine both public and private sector entrepreneurship/start-up statistics and be capable of disaggregating data, at least by gender and ethnicity dimensions.

Rec. 29. **The government should make it compulsory that any applicable entrepreneurial organisations receiving financial assistance and those in co-participation arrangements involving public money should make data available to this platform, such data being dependent on the nature of the activity involved.**

For example, investment organisations operating co-investment agreements with the government or one of its agencies would be required to publish data relating to partner and investment staff demographics and the demographics of those start-ups receiving investment from the organisation, where such investment was part of a co-investment operation with the government or one of its agencies.

Rec. 30. **The government should publish an annual analysis of entrepreneurship participation trends, disaggregated by gender and ethnicity dimensions.**

This process should be integrated into the government's Wellbeing Economy Monitor reporting cycle.¹⁰²

Rec. 31. **The Scottish Government should commission and publish further recommendations reports addressing entrepreneurial under-representation in other demographics.**

The report was commissioned to consider the under-participation of women in entrepreneurship, but the recommendations have wider applicability. This is because many of the root-cause issues affecting entrepreneurial under-participation as regards gender also affect other under-represented groups. For example, from the research conducted for this report, it was clear that some of the factors that undermine the participation of women in entrepreneurship also apply to demographics such as recent migrant groups, rural entrepreneurs and those located within disadvantaged urban areas, and that they are further amplified at their intersection.

Accordingly, it is likely that, in some instances, the recommendations made in this report will also have utility in raising participation rates within these other demographics. However, it is beyond the scope of this report to fully explore all under-participating demographics, and we recommend that detailed follow-on work is performed in these areas.

It is anticipated that such work would build upon the recommendations contained in the present report, and extend these appropriately to properly address the specific additional participation challenges experienced by the above demographics.

102 See <https://www.gov.scot/news/creating-a-wellbeing-economy/>

Appendix A:

Summary of Research into Under- participation

In this appendix, we summarise the research approach taken in producing the report. We also provide key statistics, including those referenced elsewhere in the report.

Research Approach

This report was informed by a combination of research sources and approaches, which we can summarise as anecdotal and systematic.

Anecdotal Sources

We directly consulted with over 200 stakeholders from multiple areas of the entrepreneurial ecosystem, including the Scottish Government and its agencies, multiple action groups, investment firms, accelerator and incubator programmes, schools, colleges and universities.

We systematically surveyed female entrepreneurs (see [Appendix E](#)) and we further conducted focus groups with many female entrepreneurs, from all stages of the entrepreneurial journey. We also sought the views and perceptions of male entrepreneurs toward the focal areas of this report.

In preparing this report, we took into account the findings of prior notable reports into under-participation in entrepreneurship, including the Mastercard Index for Women in Enterprise¹⁰³, and the Alison Rose Review¹⁰⁴ as well as a range of academic papers, including those by Norin Arshed¹⁰⁵ and Sara Carter¹⁰⁶.

A full list of references are provided in [Appendix F](#).

103 See <https://www.mastercard.com/news/media/phwevxcx/the-mastercard-index-of-women-entrepreneurs.pdf>

104 See https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/784324/RoseReview_Digital_FINAL.PDF

105 https://discovery.dundee.ac.uk/ws/portalfiles/portal/67137325/SB_21_73.pdf

106 See <https://strathprints.strath.ac.uk/47878/>

Summary of Statistics Relevant to the Report

Disaggregated data analysis for Scottish companies.

As was noted in [Chapter 9](#), investigation into under-participation in entrepreneurship is hampered by a lack of systematic, comprehensive and reliable company data, disaggregated by gender and ethnicity. To address this deficiency, we engaged with the organisation, mnAi, with support from Prof. Eleanor Shaw, University of Strathclyde has constructed a detailed and dynamic directory of entrepreneurial activity across the Scotland, utilising over 10 billion datapoints. This model has been used as the basis for the analysis in this report. The data is current up to to 21st December 2022.

Company incorporations

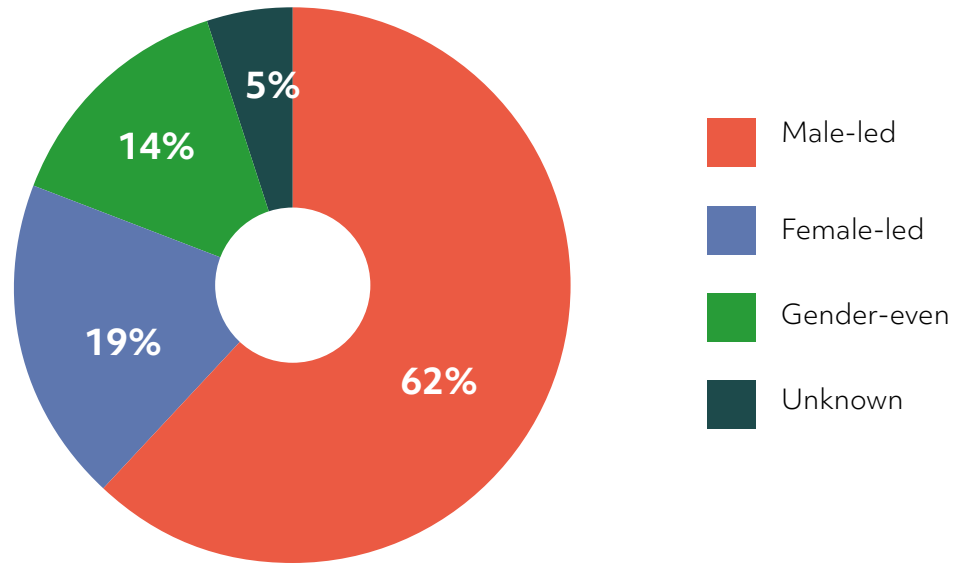
Headline figures on the number of female led¹⁰⁷ companies appear positive on first sight, with 8,103 new companies incorporated¹⁰⁸ in 2022¹⁰⁹. However, this progress cannot be fully assessed without considering also the overall number of new companies – 39,258 in the same time period. Doing so shows that female-led companies account for 1 in 5 company incorporations.

107 When assigning a gender of ownership to a company, the following rules were applied. Where male or female directors are more than 50.1% of the total the corresponding gender is identified and applied as either “female-led” or “male-led”. Where male and female directors are in equal number, a “mixed-led” label is applied. Where unisex directors are identified and there are no other values to indicate a gender preference, an “uncertain-led” label is applied.

108 Incorporated is defined as the number of companies incorporated within Scotland only

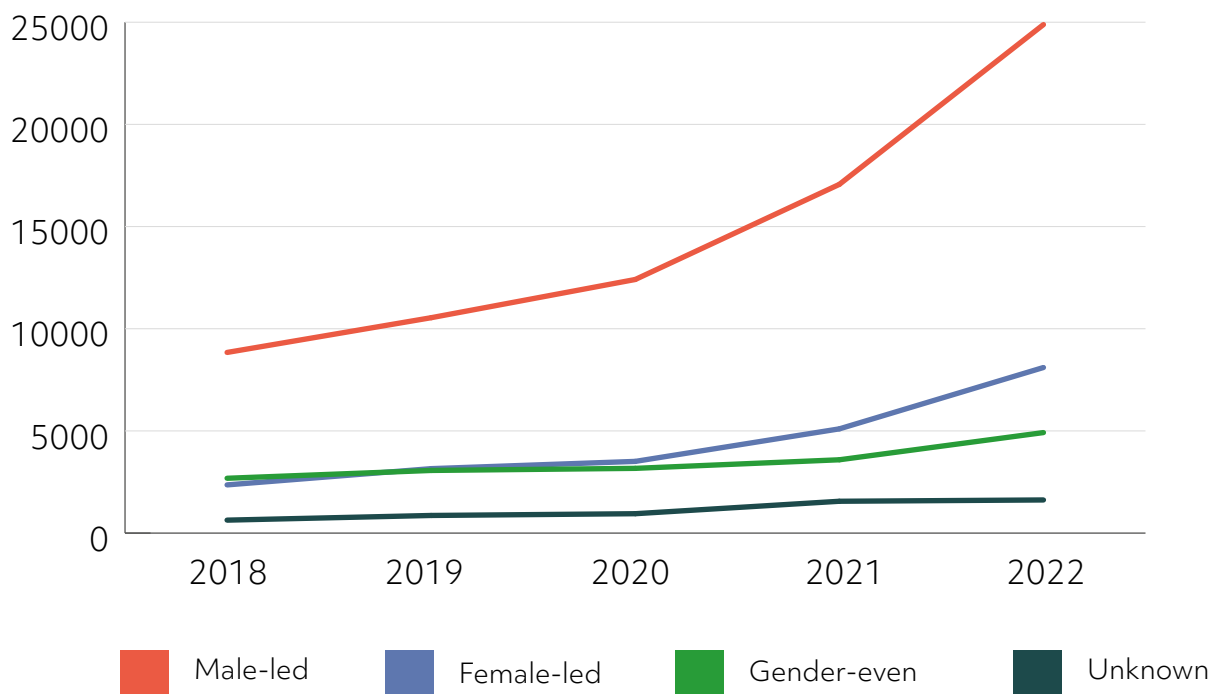
109 2022 is defined as 1st January 2022 to 21st December 2022 inclusive.

Company Incorporations by Gender over last 5 years



While there has been welcome growth in the number of new female-led companies year on year, compared to the 2,359 incorporated in 2018, there still remains a **clear and persistent gap** when compared to the total number of company incorporations.

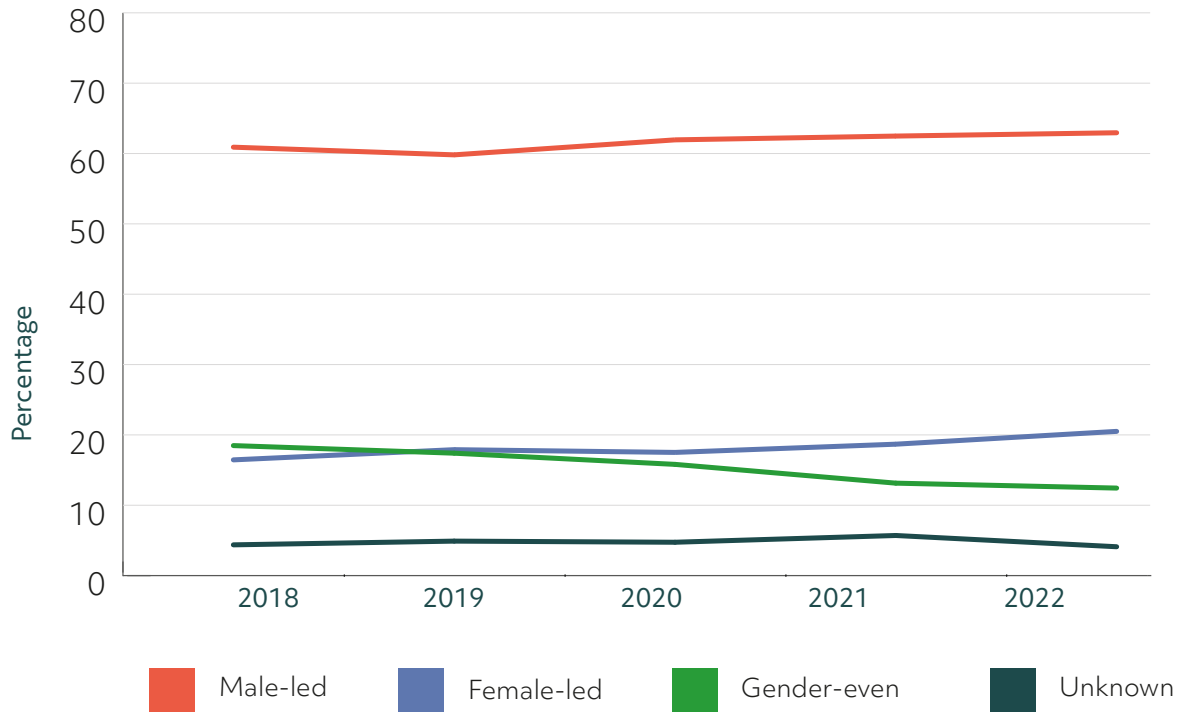
Company Incorporations by Gender



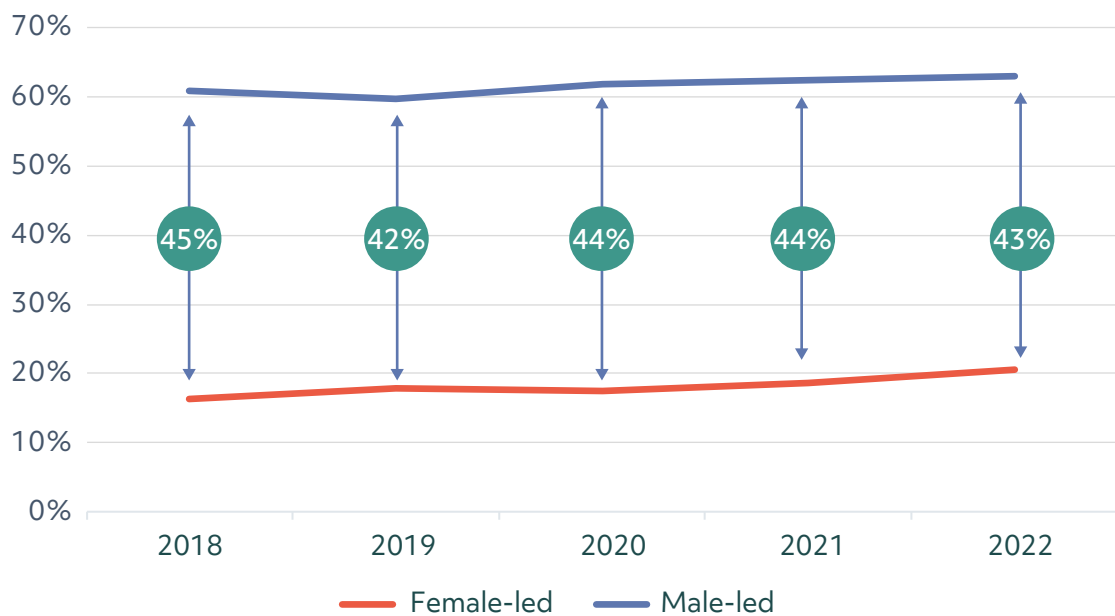
There has been no material change to the gender gap in the last 5 years with the gap between male and female led companies at 43% in 2022. There has also been a noticeable decrease in the share of companies started by 'gender-even' teams.

The Gender Gap

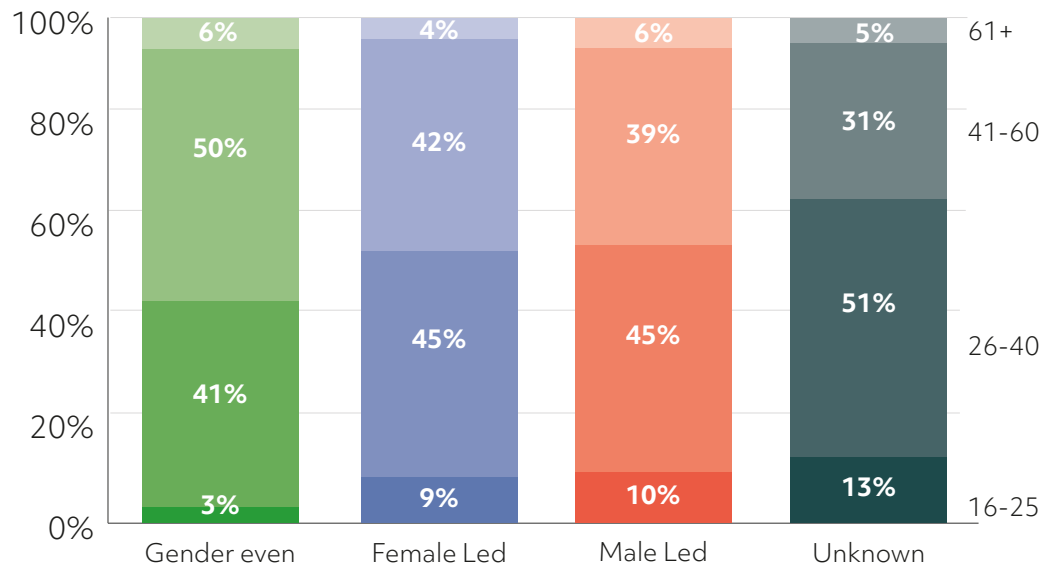
Company Incorporations by Gender



Gender Gap in Company Incorporations

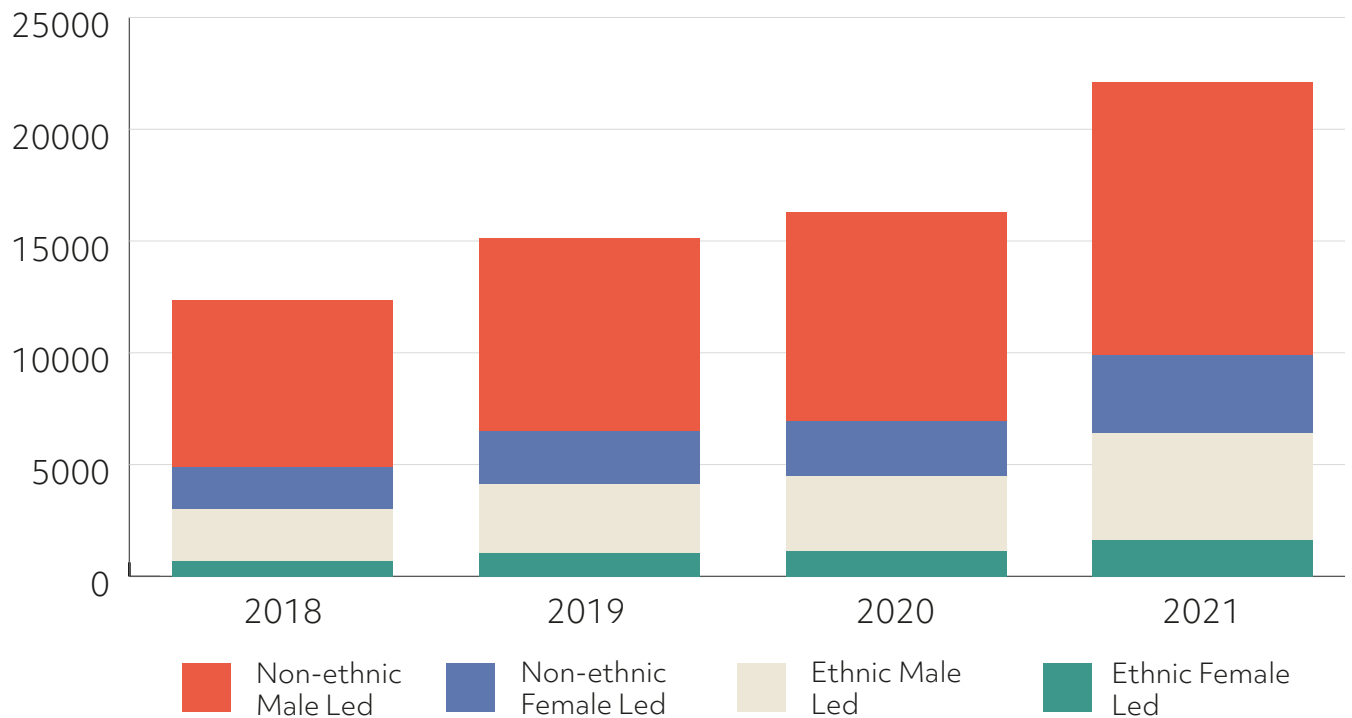


Age of founders at company start up



There are no clear differences in the ages at which women and men start their companies – with both groups most likely to start their company between the ages of 26-40, however women were marginally more likely to start a company between the age of 41-60.

Incorporations by gender and ethnicity



Looking at incorporations by ethnicity¹¹⁰, we can see that over the 4 years to 2021, a gender gap is also present in ethnic minority company incorporations.

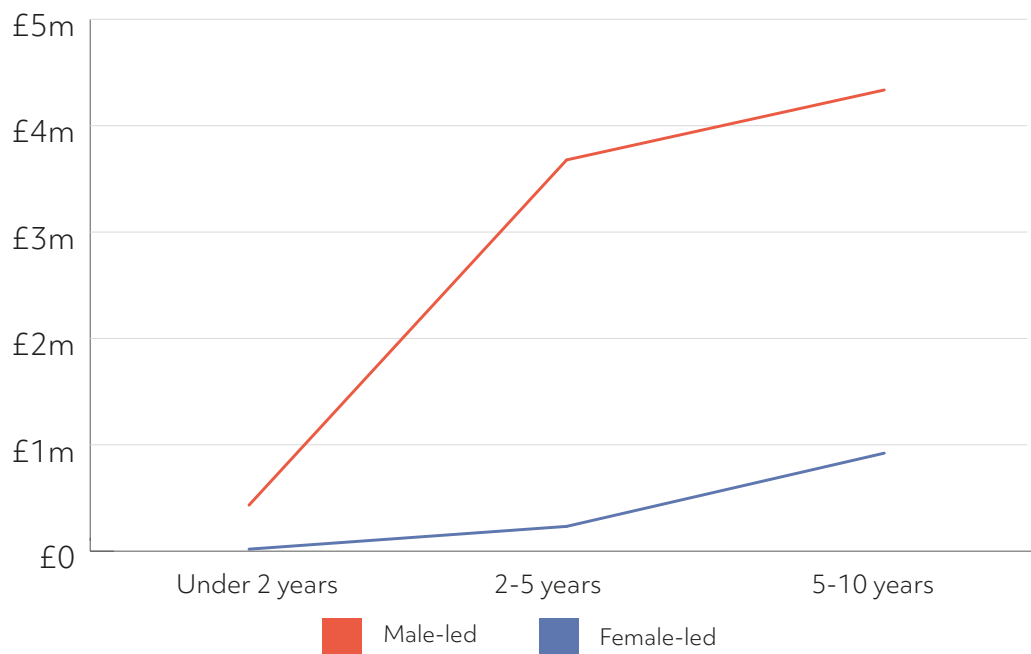
Further work is required to fully understand and interpret this data as it is a broad grouping and masks the experiences of different ethnic and cultural community groups.

¹¹⁰ For the purposes of this review, the attribution of ethnicity is defined as “ethnic-led” or “non-ethnic-led” only. The data has been provided under Section 8 (b) [IT] of the Substantial Public Interest (SPI) conditions and has been modelled by establishing a name’s country of origin, ethnicity, diaspora and country of residence. All data was encrypted using non-reversible SHA-2 digests (header X-Anonymizer = SHA-256) ensuring the highest levels of encryption were used through-out the process.

Growth

Data shows that female-led companies generate a lower turnover at all stages up to 10 years with data on company turnover by company age and gender indicating a slower rate of growth in female-led companies. These are average figures and are affected by company type, operating sector, access to investment, support networks, etc.

Average turnover by company age and gender

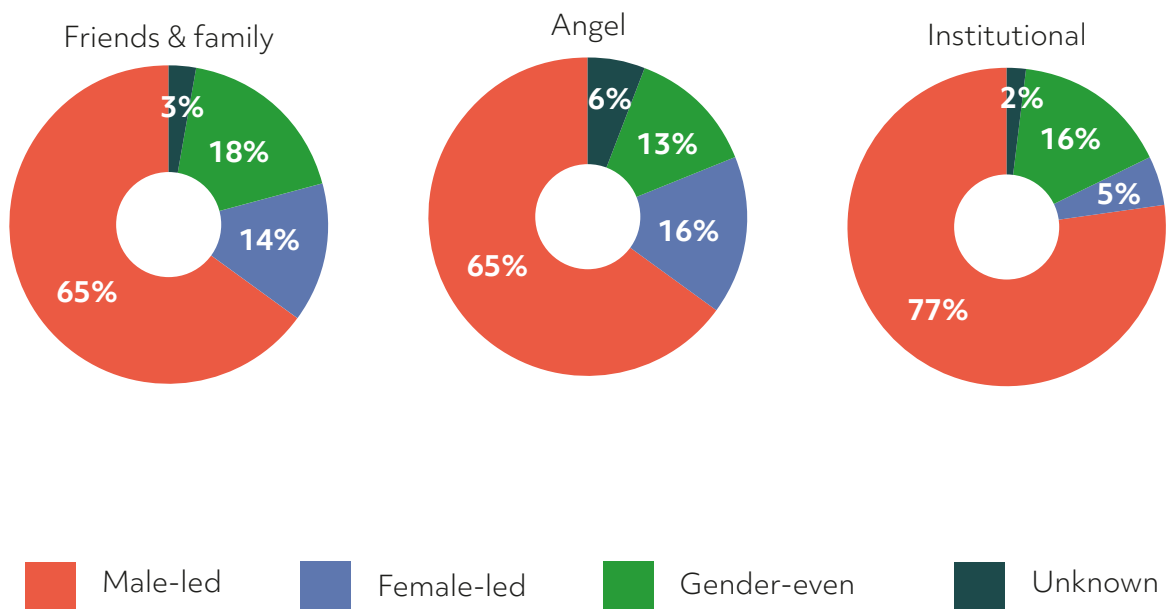


Investment

While female-led companies represent 19% of incorporations, we see female-led companies make up only:

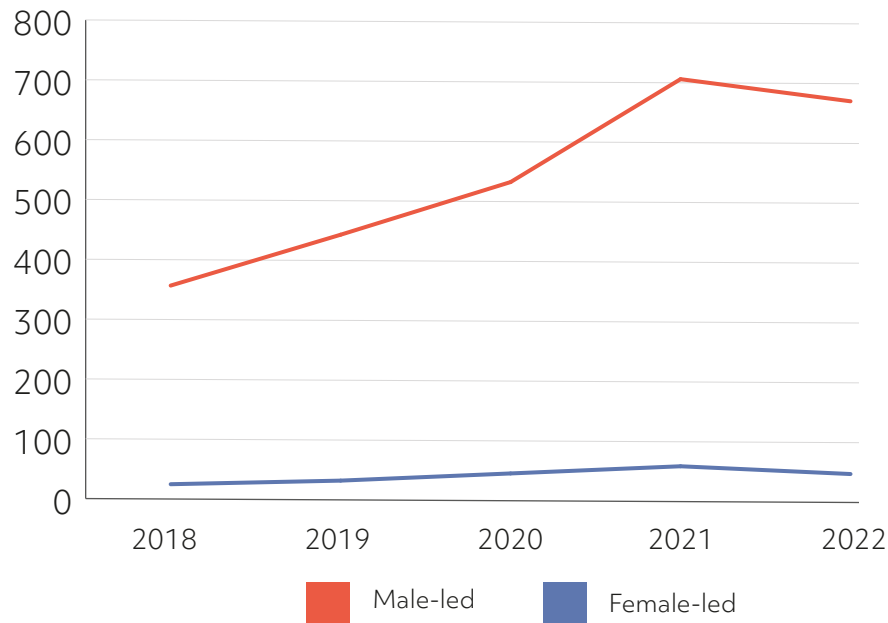
- 14% of companies receiving 'friends & family' investment
- 16% of companies securing angel investment
- 5% of companies receiving institutional investment. (in comparison, male-led companies make up 77% of companies securing institutional investment.)

Looking across investments over the last 12 months, across all sectors female-led businesses made up 12% of companies receiving investment versus 73% being male-led businesses – a gender gap of 61 percentage



Over the past five years the gap between female and male-led companies securing institutional investment has widened.

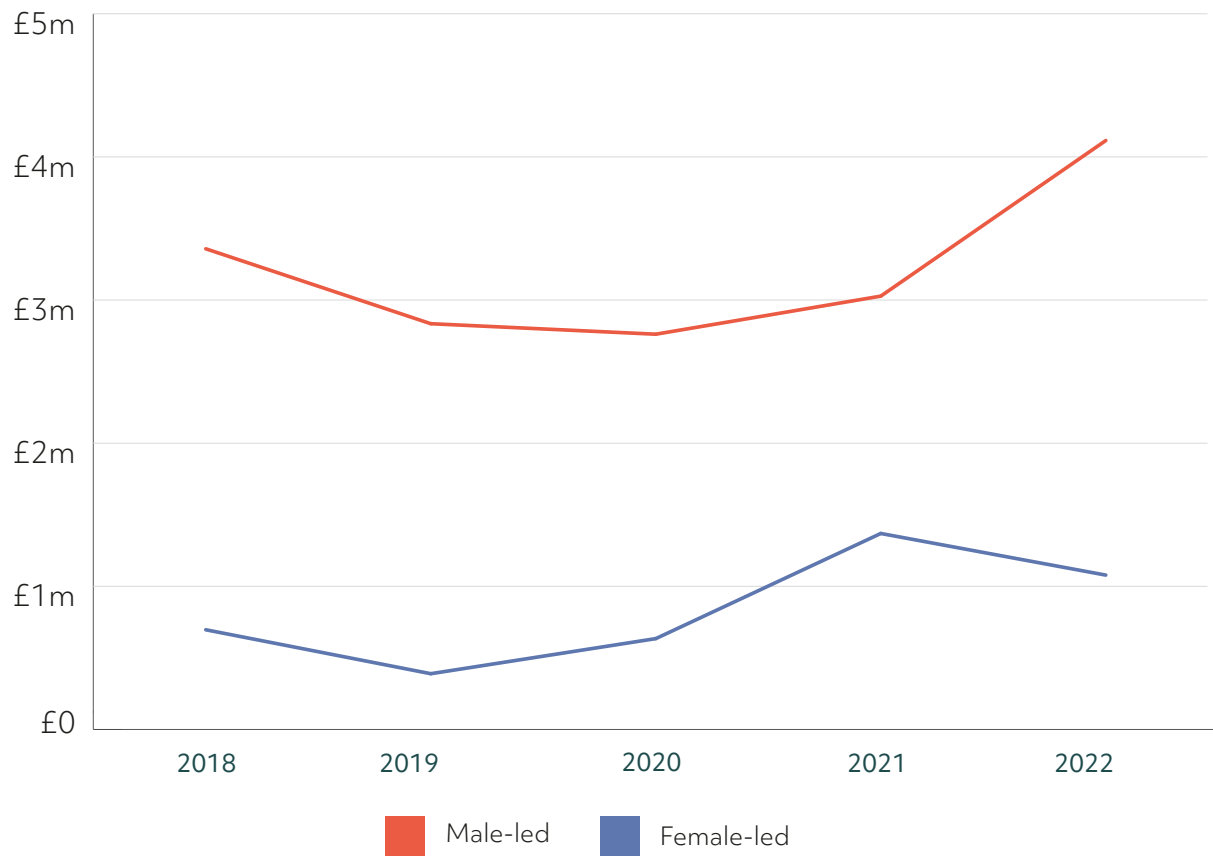
Number of institutional investments



When female-led companies do receive investment, they are securing, on average, a lower quantum. Over the last five years, excluding first round investments, the average value of female led investments was £833,754 per investment vs £3,219,146 for male-led investments.

Male-led companies secured four times the investment of female-led companies on a like-for-like basis.

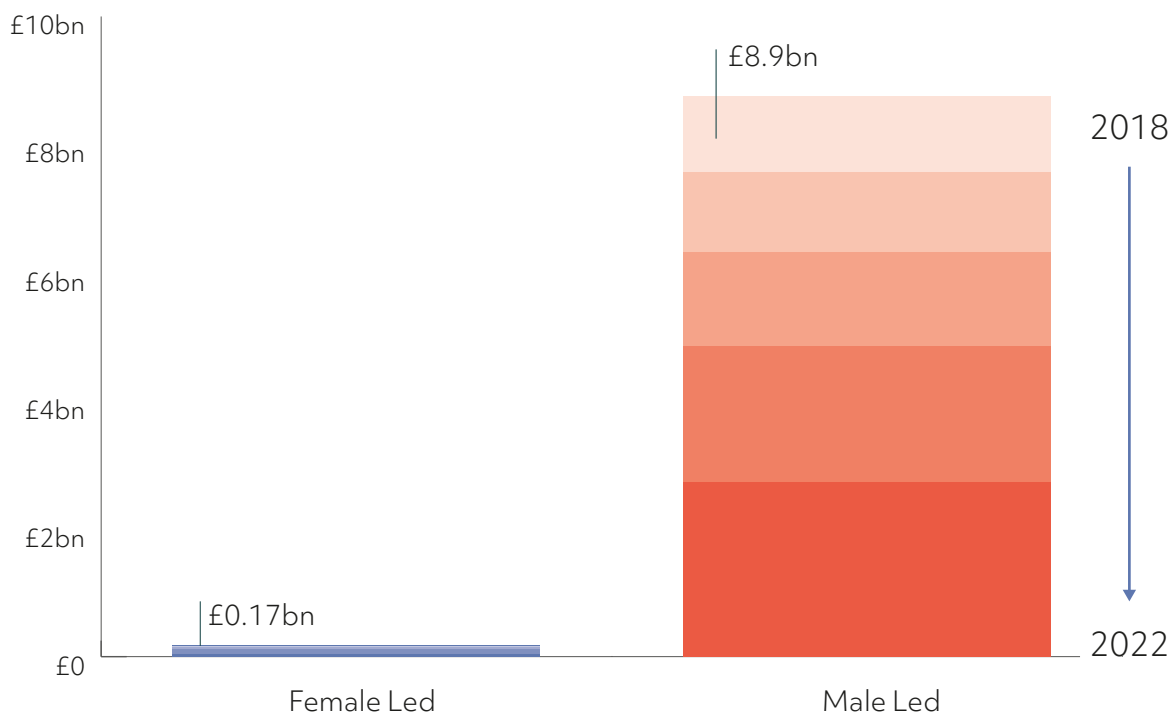
Average level of investment



Data for 2022 shows the investment value gap widening after a recent period of improvement.

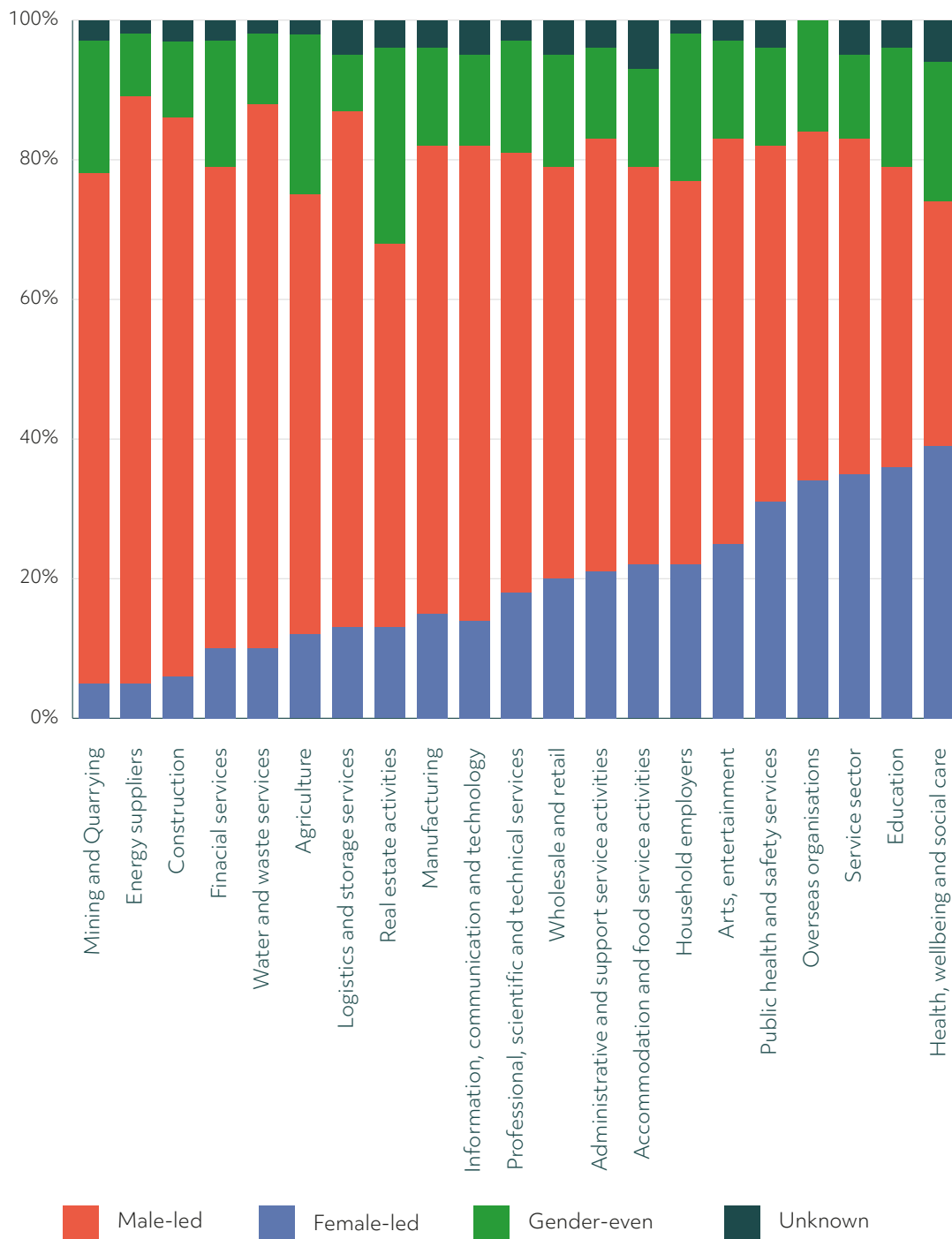
Looking at institutional investment over the last five years, an average of 2p in every £1 of institutional investment went to female-led companies. In 2022 this dropped to 1.5p in every £1.

Institutional investment over 5 years



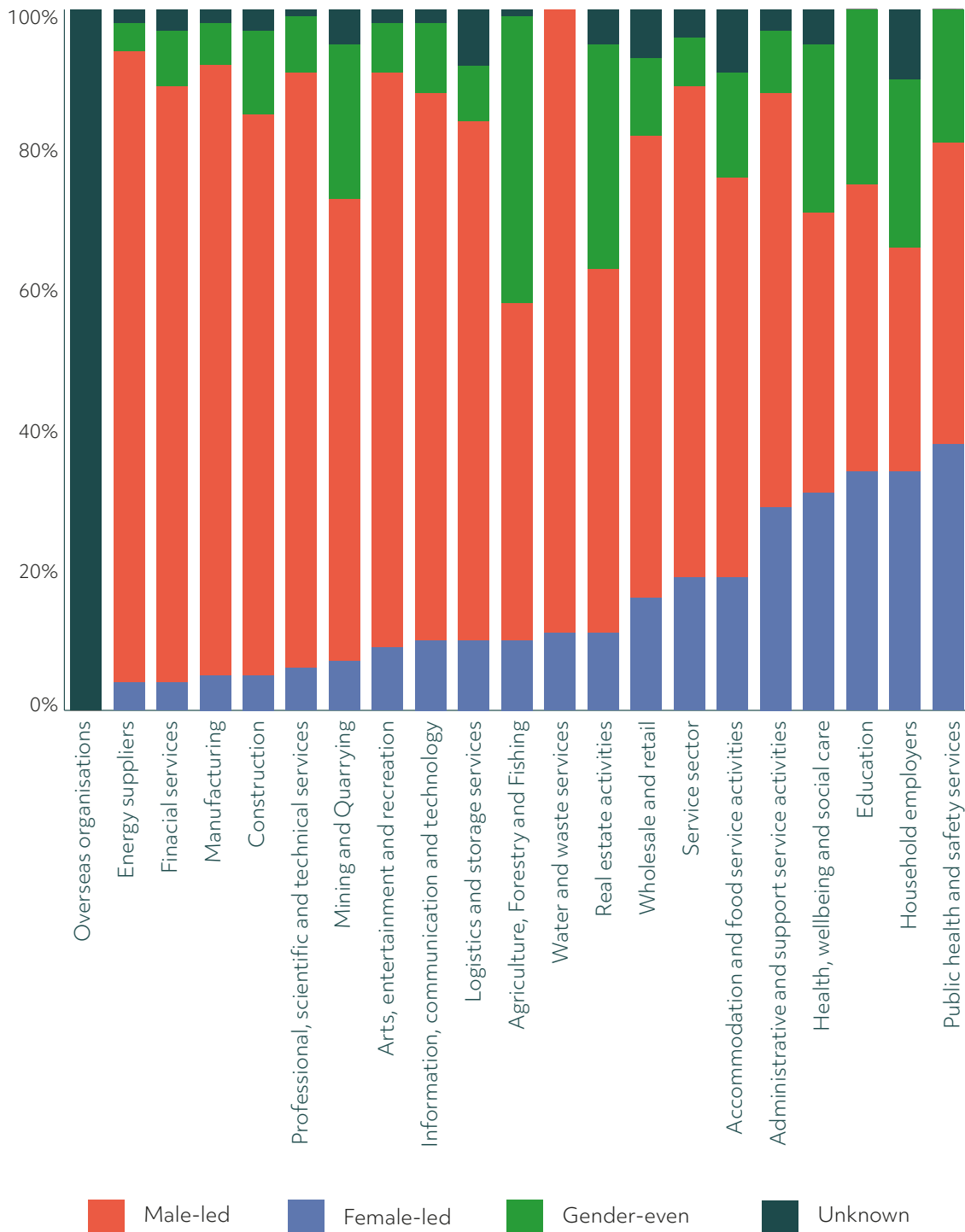
There are clear differences in the sectors favoured by male and female founders. Female-led companies made up 39% of incorporations in the Health Wellbeing & Social Care Sector over the last 5 years, in comparison to only 15% of incorporations in the Information, Communications & Technology sector, 10% in Financial Services and 5% in Mining and Quarrying.

Incorporations by sector over the last 5 years



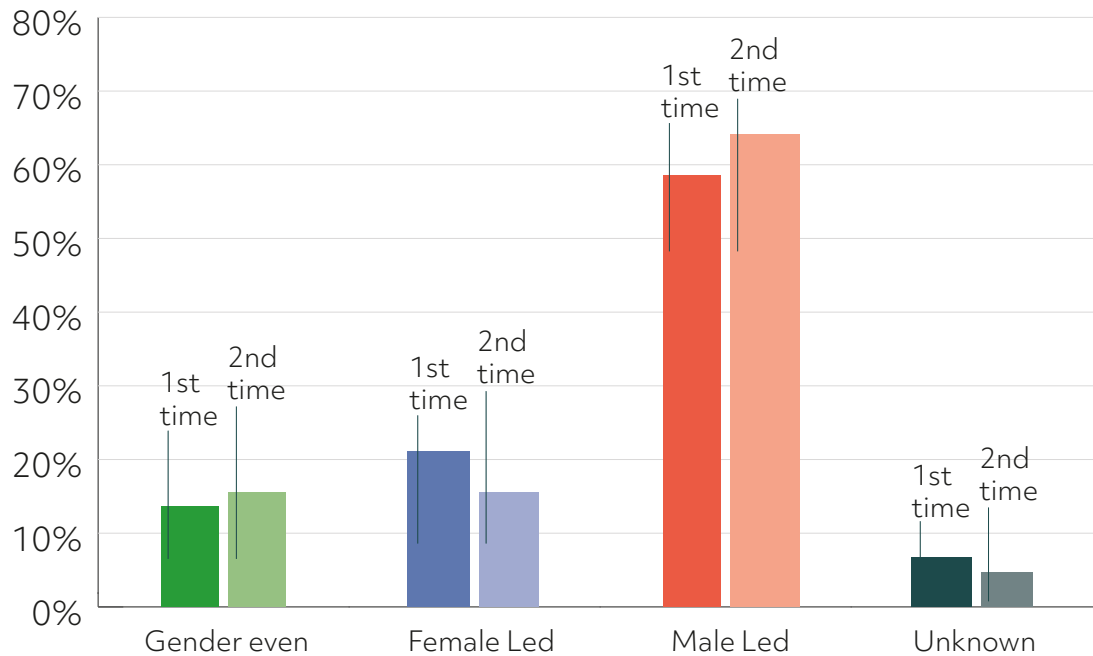
Women are receiving proportionally less investment across all sectors. Although 39% of companies in the Health, Wellbeing and Social Care sector are female-led, only 31% of companies receiving investment are female-led compared to 40% for their male-led counterparts. Similarly, in Information, Communication and Technology only 10% of those receiving investment are female-led.

Number of companies receiving investment by sector over the last 12 months



Networks and Influence

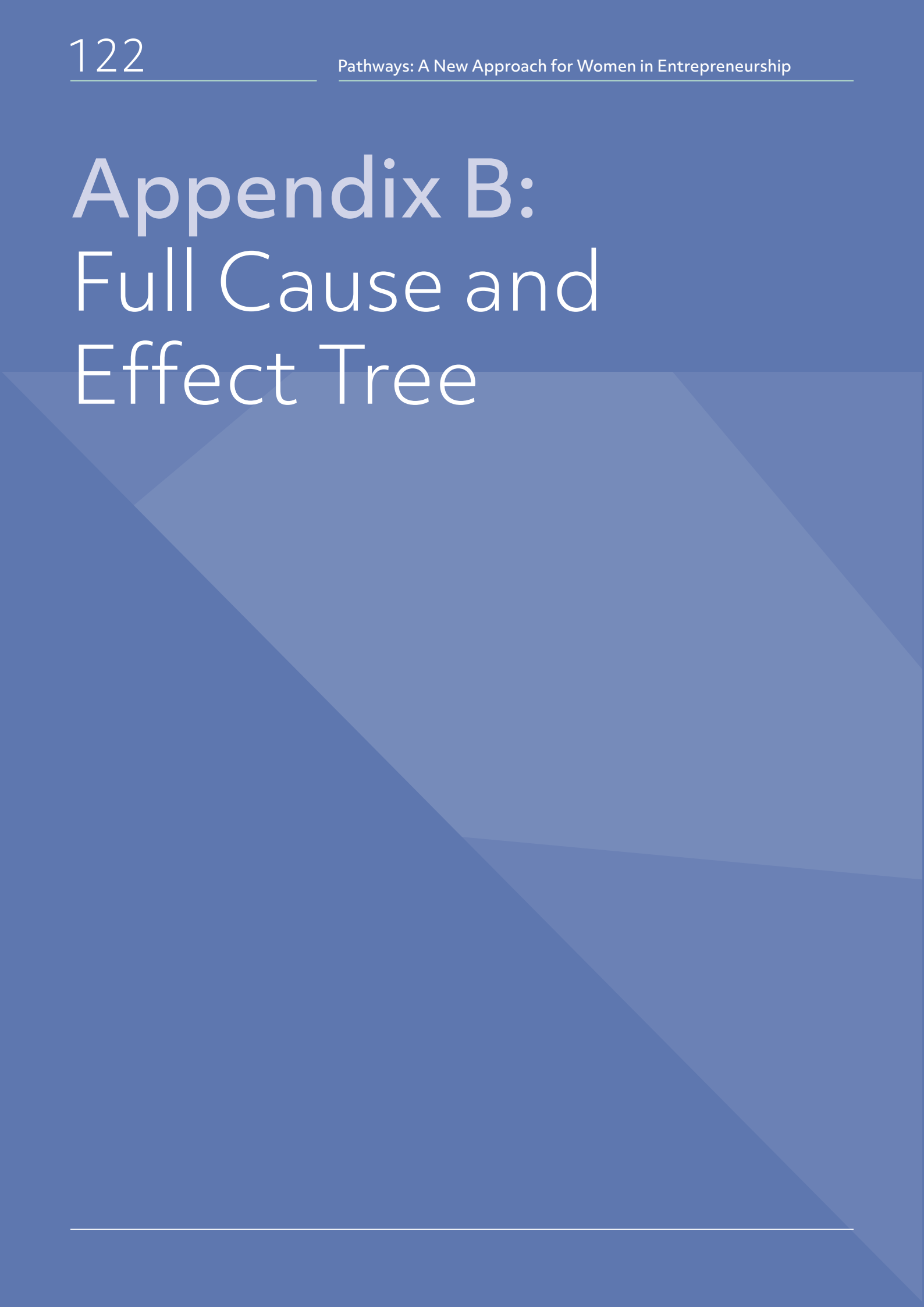
Directorships



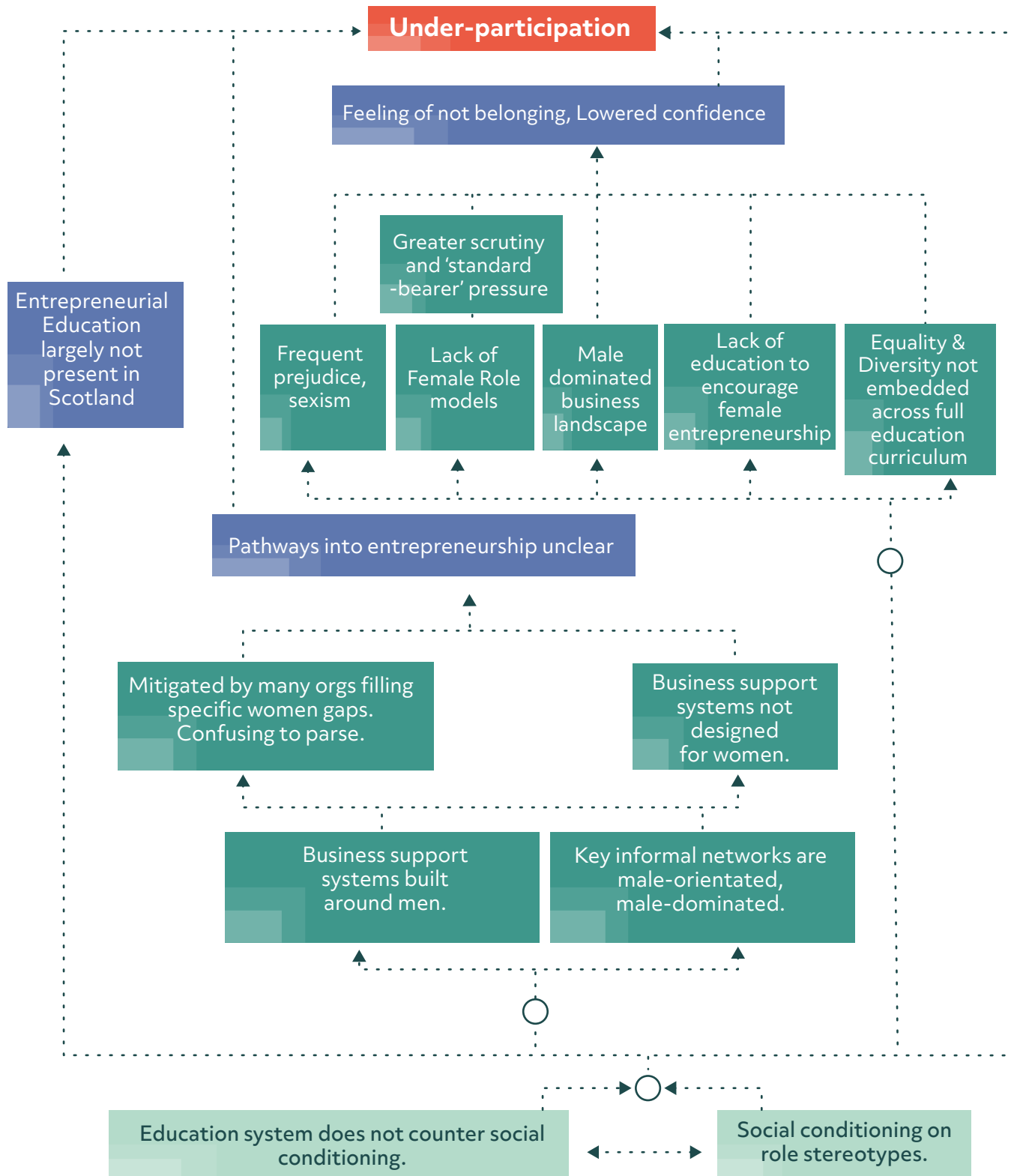
In absolute terms, as expected we see a drop in the numbers of directors taking on second or subsequent directorships. Where those second directorships happen they are far more likely to be in male-led companies with over 60% of second and subsequent directorships versus 15% in female-led companies.

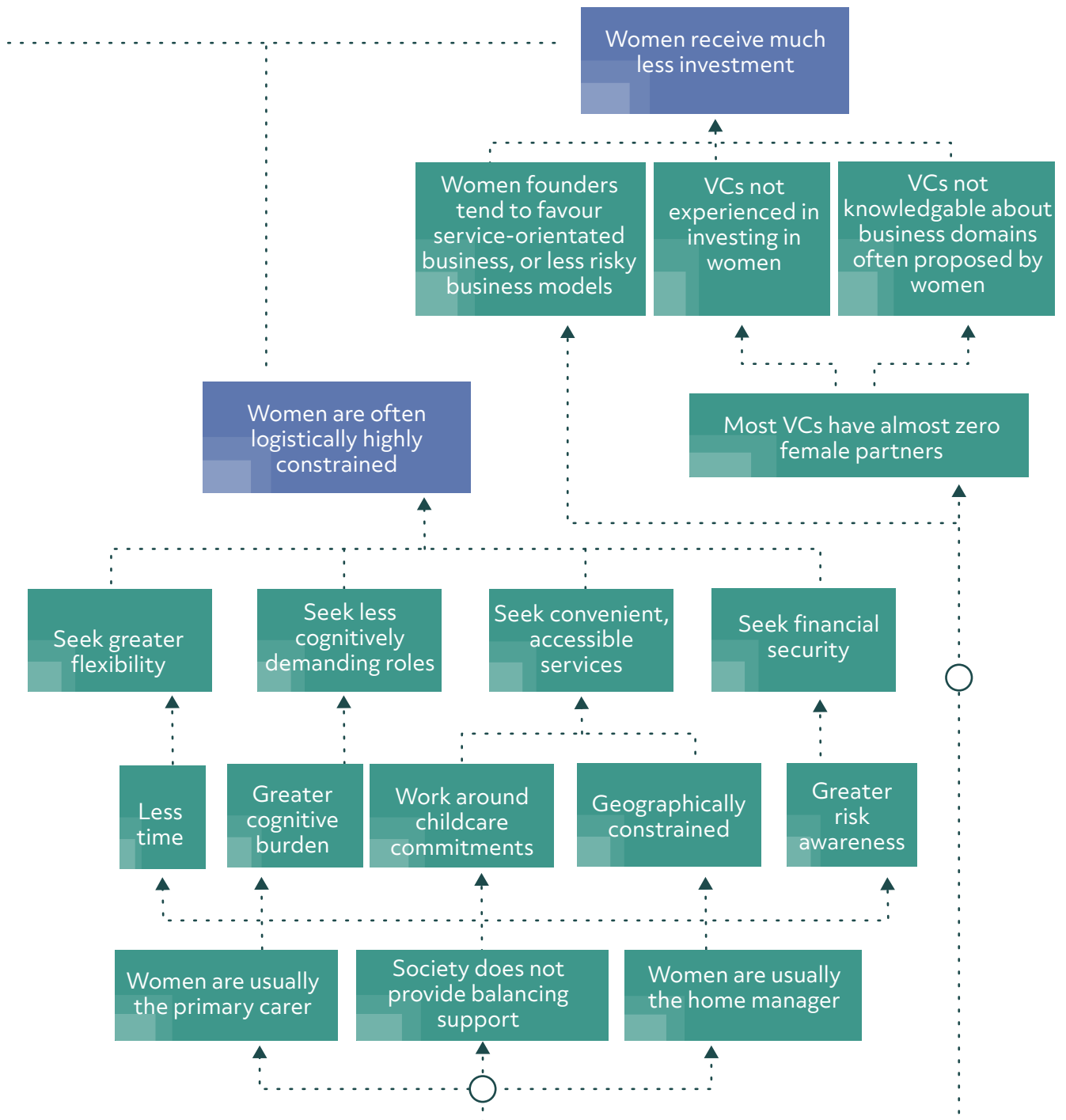
Appendix B:

Full Cause and Effect Tree



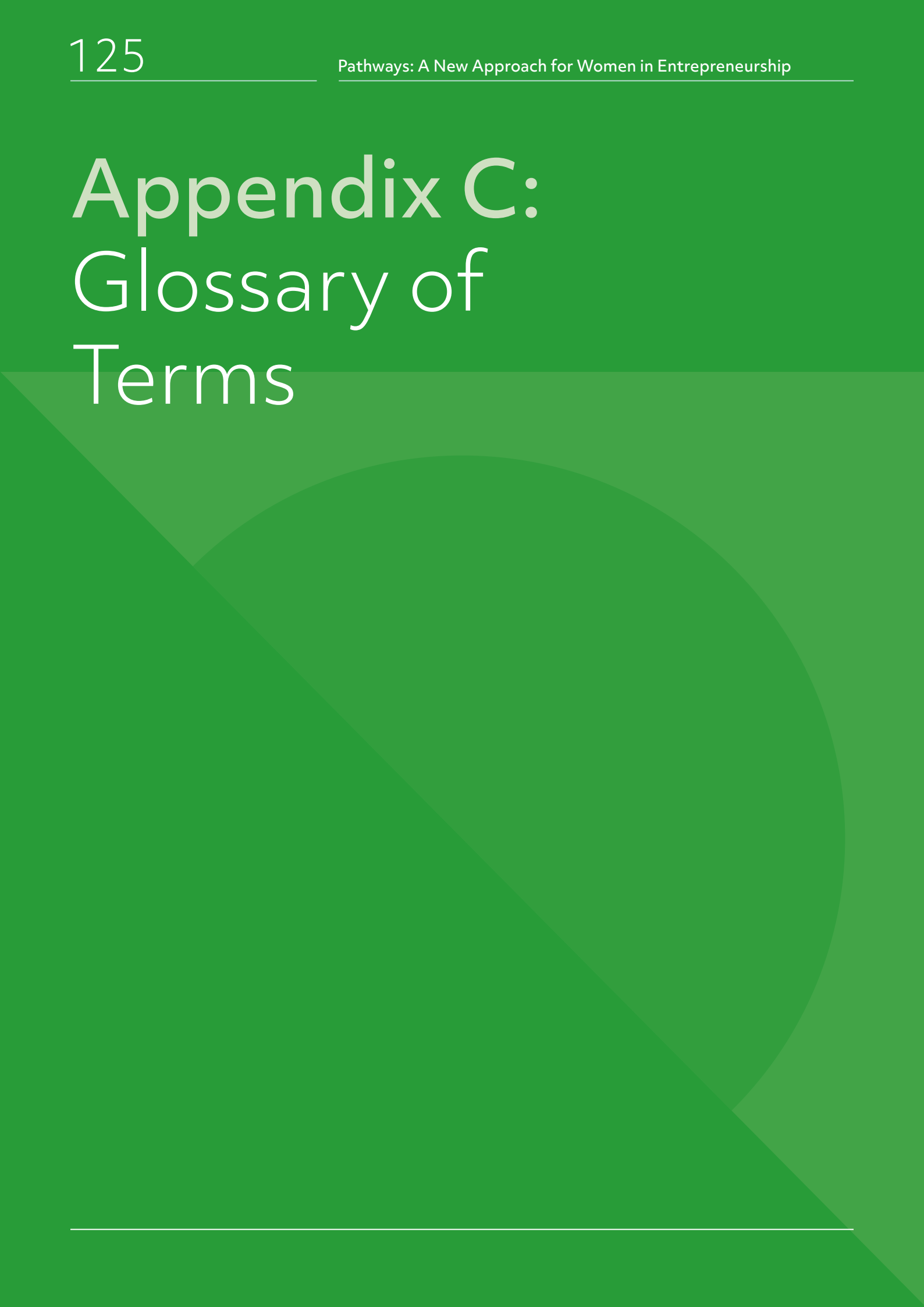
This appendix presents the full tree of cause-and-effect relationships proceeding from the root causes of under-participation, and their various consequences. Each section of this tree is analysed in detail in [Chapters 4 through 8](#).





Appendix C:

Glossary of Terms



→ **Concept Fund**

A grant fund available within the Pre-starts network providing micro-grants (of up to £1000) to very early-stage entrepreneurs to help them test start-up concepts.

→ **Ecosystem Builders**

Organisations that provide services to Scotland's entrepreneurial ecosystem. Examples include accelerator and incubation programmes, founder development programmes, scale-up programmes, business networks.

→ **Journey Fund**

A grant fund supporting start-ups "graduating" from the Pre-starts network, providing follow-on bridge funding. Applies where at least one founder in the start-up is a woman or from an under-represented demographic.

→ **Pop-up (see Pop-up Pre-starts)**

→ **Pre-starts centres**

A network of fixed-location incubators located in local communities providing space for very early-stage start-ups and those considering starting a business to locate themselves. Provides access to mentoring, web design expertise, access to facilities such as computers, printing and 3D-printing resources. Acts as a centre for group learning activities etc. Closely relationship with the Scalers/Tech-Scalers network. This report proposes renaming the Pre-Scaler concept (first proposed in [NSET](#)) to Pre-starts, and extending the model in various ways. See text for details. The "network" refers to the fact that each Pre-Scaler forms part of a wider network.

→ **Pop-up Pre-starts (PUPS)**

A "pop-up" version of the Pre-Start concept, which moves around suburban and rural areas providing similar services to a Pre-Start centre but on a temporary, recurring basis. For example, a Pop-Up Pre-Scaler may be located for one week per month in a shopping centre, in a disused retail facility, etc.

→ **Pre-starts network.**

The collective term for all Pre-starts centres and Pop-up Pre-starts.

→ **Proximate Causes**

A proximate cause of an issue is the nearest adjacent factor directly acting to cause it. There are usually deeper issues underlying the proximate cause, which must also be addressed if we are to remove the proximate cause. For example. Contrast with Root Cause.

→ **Root Cause**

An underlying cause of an issue, resulting in various symptomatic issues. To effectively address those issues (see Proximate Cause), we must also address the root cause.

→ **Scaler/Tech-Scaler (network)**

First proposed in STER, a Tech-Scaler is an incubation environment providing long-term, curated incubation, intensive, continuous founder-team education, a space for tech-meet-ups and events, integrated grant-funding and other services designed to give start-ups world-class support in the journey to scale. The “network” refers to the fact that each Tech-Scaler forms part of a wider network. The “Scaler” (sometimes referred to as a *Start-up Scaler*) reflects the proposal in NSET to generalise Tech-Scalers to also support start-ups that are not considered “tech start-ups”.

→ **STEM**

An acronym for Science, Technology Engineering and Mathematics. A term used to refer to these subjects collectively, most usually in an educational context.

Appendix D: Contributors



We are very grateful to all of those listed below, who gave so generously of their time and expertise in contributing to this report.

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Appendix E:

Entrepreneurial

Voice Sentiment

Survey

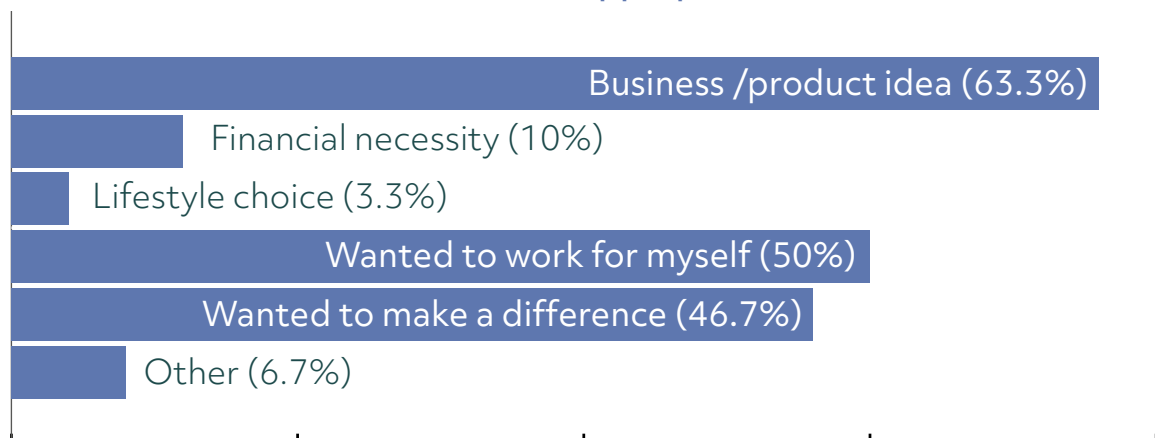
The purpose of this survey was to capture sentiment and an entrepreneurial voice from within the Scottish entrepreneurial ecosystem. The survey compliments the wider research work carried out as part of the review. Respondents comprised a small group of female entrepreneurs who are representative of the Scottish ecosystem at varying stages of their entrepreneurial journey, including pre-start-up, early stage and high growth businesses across multiple industry sectors.

The Survey was carried out as an online, anonymised Google questionnaire, using a combination of multiple choice and individual questions. The average completion time was 5 minutes. The Survey was sent as a link within a cover email to 45 respondents. 30 of those responded, equating to a 66% response rate.

This document provides an extract of the responses, below.

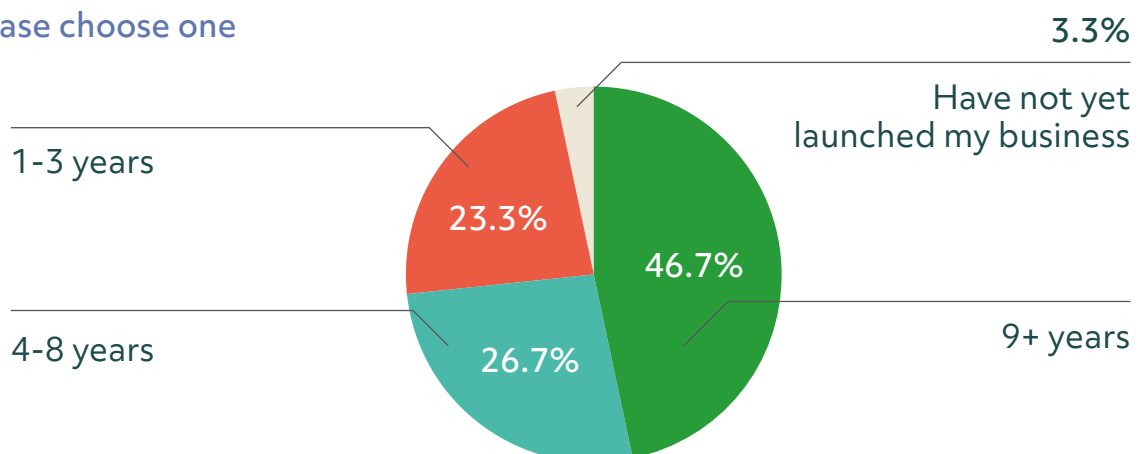
What was the main driver behind founding your own business?

Please choose (tick more than one if appropriate)



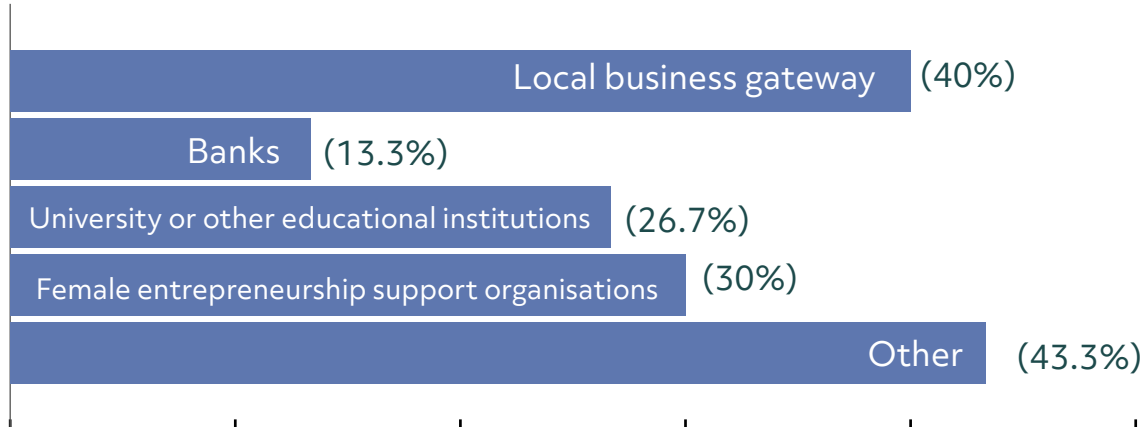
How long have you had your business?

Please choose one



When you first looked into starting a business, from where did you obtain assistance?

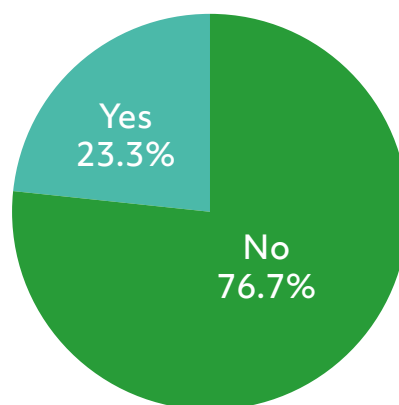
Please choose (tick more than one if appropriate)



Other answers included:

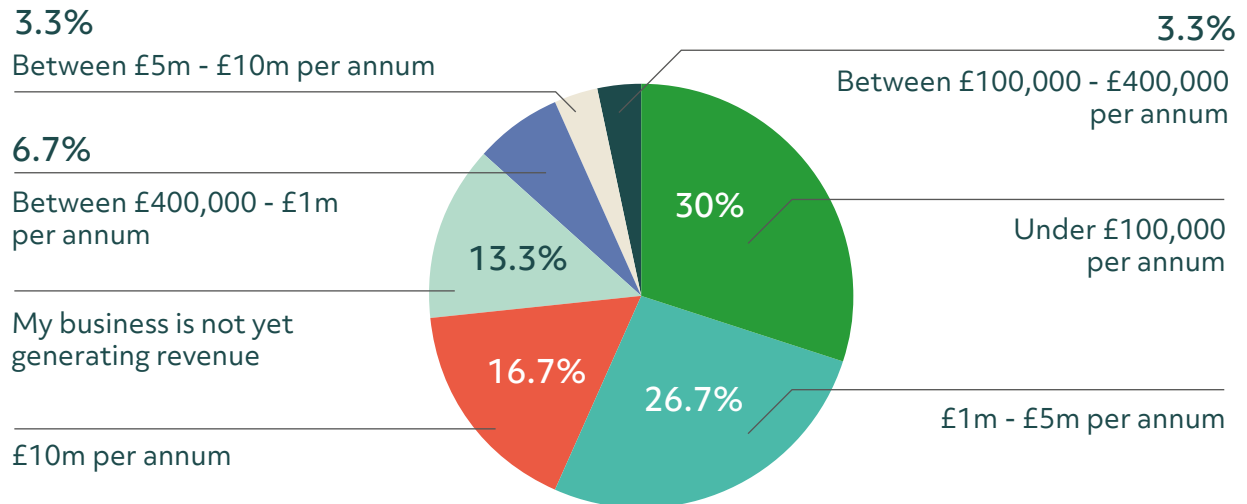
Other founders, family, SE, Entrepreneurial Spark, Edge, Converge

Do you feel that there is sufficient signposting and pathways in place to help female founders navigate through the entrepreneurial journey?



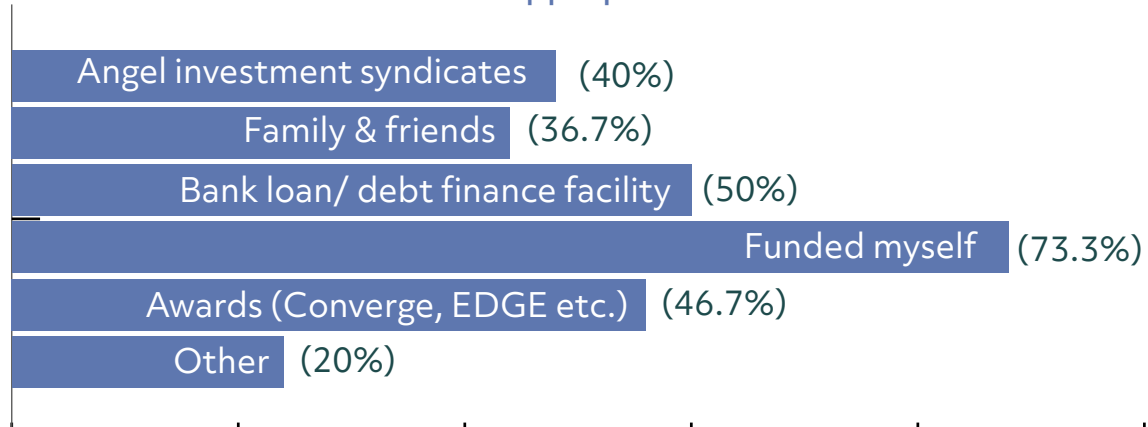
What is the current annual turnover of your business?

Please choose one



Has your business received funding/financial support from any of the following?

Please choose more than one if appropriate

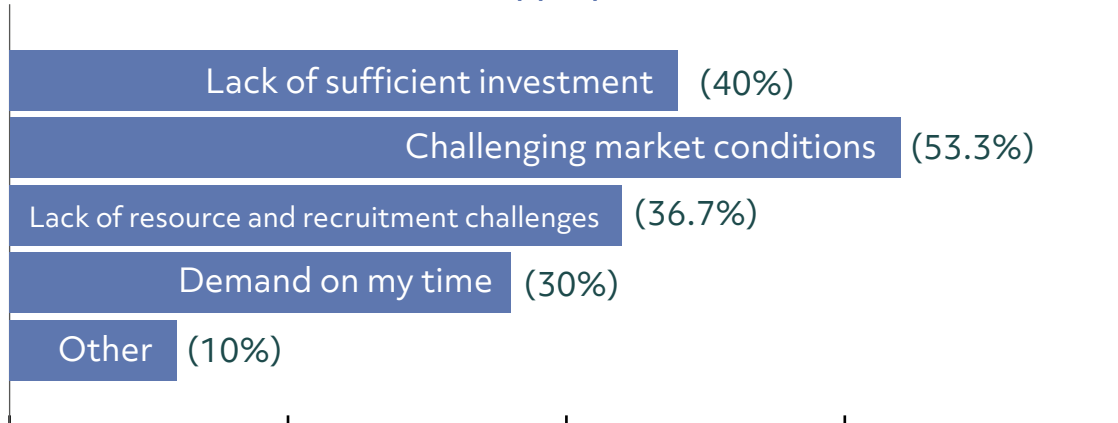


Other answers included:

Venture Capital, SEIS & EIS Funds/Scottish Venture Fund & Angel Investor(not syndicate), SIB, Scottish Enterprise matched funding

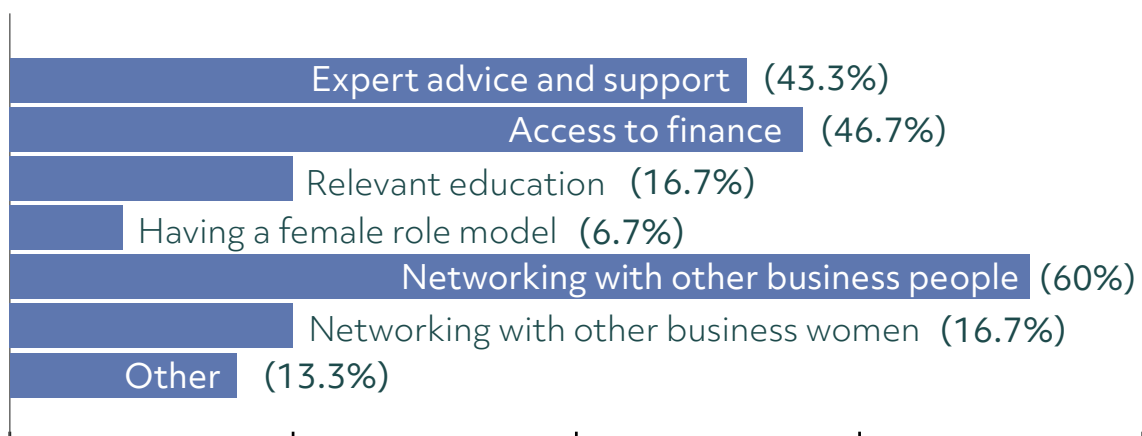
What do you see as being the current key risks for growing your business?

Please choose more than one if appropriate

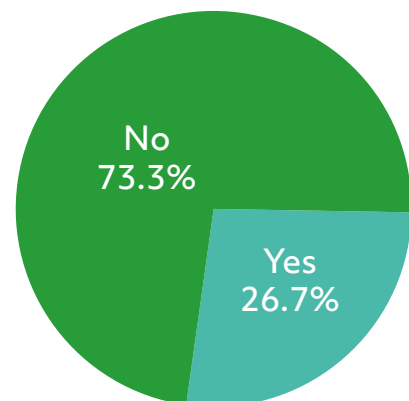


What was most useful to you when you considered becoming a founder?

Please choose more than one if appropriate



Did your school education equip you with specific skills or learnings that helped you with your entrepreneurial journey?

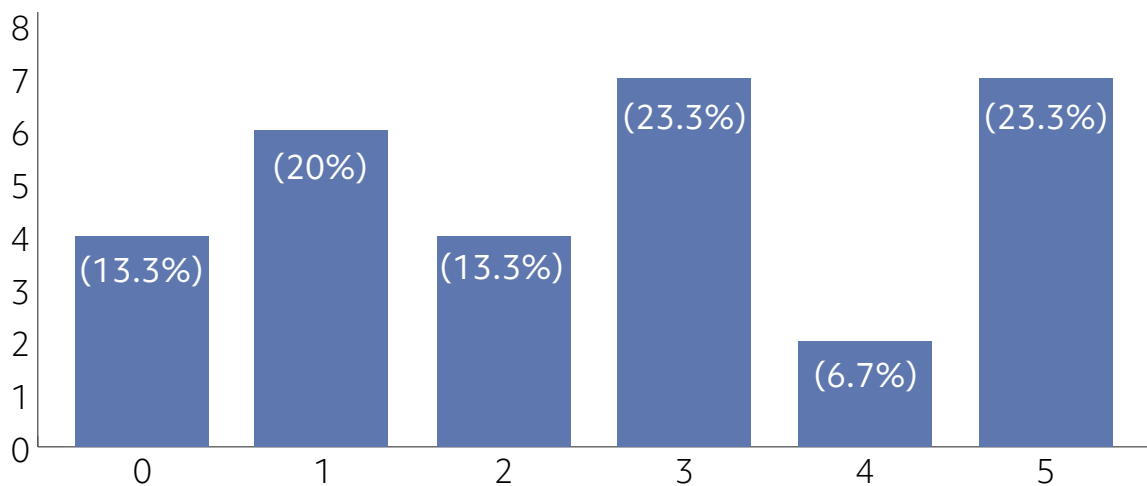


Please provide an explanation if appropriate:

- school didn't offer much career advice never mind thoughts on being able to set up and run your own business.
-had very little experience or understanding of business or entrepreneurship before I started my company.
- It was never something touched upon in my school. I feel schools/ associations should do more to let young people know that it is possible to create a business for yourself rather than just being employed.
- Can't think of anything at school which helped.....
- Entrepreneurship is not something I was aware of as a viable option when I was at school
- There was no mention of entrepreneurial opportunities.
- School education needs a complete overhaul. There needs to be more focus on real world skills and emphasis on EQ over IQ.

Have you ever experienced discrimination during your time as a female entrepreneur?

Please answer on a scale of 0-5



How can Scotland (both public and private organisations/bodies) encourage more women to start/grow their businesses and how can we help them practically?

- Money. Women don't need different advice to men. But they do need more people who are prepared to invest in their journeys
 - I have never once found a female mentor and more of these would certainly help build confidence by understanding and supporting female entrepreneurs.
 - PUBLIC There is support for young businesses in specific sectors, irrespective of sex, however it is very hard to understand what is available and how to apply, to even get to the right person in Scottish Enterprise to find out more and apply. Further the criteria are ever changing and the application process is painful and lengthy.
 - Ultimately it is very opaque and it should be very clear and I talk as someone who received several grants and mentors young businesses through the start-up process. EDGE - is fantastic, a great system. A tough application process, but excellent for preparing businesses for a fund raise - they should be given more money to disburse. BUSINESS GATEWAY -- more practical courses on finance, recruitment, software tools, etc. (although I am out of date of their current offerings) PRIVATE WES - Is fantastic, need more resources to increase outreach ANGEL SYNDICATES - introduce female only pitch events CODEBASE - fantastic to be surrounded by other tech entrepreneurs and hear their war stories and call on their support, had a significant impact on my learning journey.
 - By allowing women, especially mothers, to combine raising children with running a business. In Germany it costs less than £250 to have a child in full-time care.
 - Support needs to be delivered by local people, for local people but with access to national expertise
 - More funding availability in the early stages of Concept, MVP, Pre-revenue ... e.g. Early Stage Growth Fund ... much more of this - there is a funding void until substantial revenue generation
 - Easier access to start up and growth finance with less hoops to jump through
 - Highlight female leaders/entrepreneurs, get them into schools early on (primary/early academy years) provide funding for early-stage ideas
 - Provision of entrepreneurial advice and support targeted at female entrepreneurs, and which also takes into account female circumstances (raising a family, caring responsibilities).
 - Information is disparate - it is around but not particularly well put together. Various organisations offer the same information but if aligned would make more of an impact by expanding the offer. Most importantly, we need to get Business Education into schools and further education - as well as an understanding of Intellectual
-

Property - and how to make money from something you create....More of the activities undertaken by Founders4Schools are required - big time. We have some fantastic role models but 'kids' need to hear from younger people as well as older people ... folks more aligned to their lives.

- Access to funding is absolutely key. We do not have the same access to funding as men because of the lack of access to networks, and that has to be compensated for. We also tend to ask for too little and need to be challenged to ask for what we actually need to succeed. Focus on women of colour as well, as they are so often left out of initiatives like this. Build peer networking groups and masterminds so women can learn from each other and support each other.
 - I think the current support for female led businesses is growing and more angel firms are recognising female led businesses and looking to invest in them, however I think the VCs are still investing more in male led businesses than female
 - Internships/work experience: Access to this in more SME's perhaps shadowing someone high-level to see all aspects of business would be useful. Access to finance: I found that for some I could see why the Angel Syndicate pitches could be intimidating- not all- but some were more reflective of 'an old boys club' pitching in that sort of environment didn't bother me but there was definitely an element of sport I suppose in trying to one up each other on questions/interrogation. Peer network: One of the things that has helped me to no-end is actually making friends who are other female entrepreneurs at a similar or later stage Facilitating some sort of pathway-based knowledge share with networking events would be fantastic.
 - Free or discounted childcare from a younger age: I feel a lot of women feel like it has to be one or the other when running a business. Implementation of more equal rights in terms of paternity leave would also be useful.
 - Peer network: One of the things that has helped me to no-end is actually making friends who are other female entrepreneurs at a similar or later stage. It means you have someone who understands the frustrations and challenges that come along with running your own business.
 - Investing Women is exceptional. I come from a very male-dominated academic discipline, taking part in their meetings is such a breath of fresh air. They provide high concentration/ high quality/ high impact training and networking in timeframes that are compatible with busy lives (where a founder is perhaps juggling another job, caring responsibilities, and building their own company). It is not always possible to give up a week to participate in training, but fitting it into a lunchtime is ideal. Making more funding available specifically for female founders is important. More targeted encouragement of women:
-

What changes would you make in the advice/support offered to female entrepreneurs?

- I'm not convinced separating women out is the right approach. Perhaps in the very early stages it helps to create educational cohorts for women to learn the basics, but after that i think it's better to have an integrated approach so the females calibrate to males and vice versa.
 - I have found that being female hasn't stopped me getting funding (I have been through 3 rounds). Investors are just looking for good business people with a clear plan.
 - We need to demystify tech, as a non tech founder it would have been useful to be able to ask the stupid questions I had to an experienced techie, out with my business.
 - I would stop making it out as if we are any different to men
 - It's not one size fits all (current accelerator hub model) much of which is geared to lifestyle businesses as opposed to real scale up support and opportunities ...
 - Less focus on being a "female" entrepreneur and more focus on growing business
 - More funding and more offices/lab space in innovation centres (such as Roslin Innovation Centre).
 - I would like female entrepreneurs to be treated as successful in their own right and the stigma of 'imposter syndrome' or 'you need wellbeing coaching' should be diminished/removed.
 - The learning experience of failure is celebrated on the other side of the pond ... here - particularly in Scotland - it is something which is seen as shameful
 - In general, Scottish business support focuses on business models that are more predictable and understandable, which is wonderful but also often excludes the potential high growth businesses with brand new, speculative business models.
 - Hard to do, but remove all bias. I have been given advice that I can never imagine a man being given
 - I'd include more programmes about scaling and include more on the role/benefit of Board and or advisors.
 - More female angel investors, more female executives available to be mentors/board members
 - Controversial but don't think of yourself as a female entrepreneur. You're an entrepreneur. Again, controversial, but for me, gender doesn't come into it.
 - We need to change the thinking of female entrepreneurs to "scale up and think bigger".
 - Signposting, inclusivity, new faces - a clique of women can be just as off-putting as a clique of men, so help to find your tribe is important. Relevant. Founder-led.
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Appendix F:

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