

THEMATIC STUDY 1

Crowdfunding as an alternative way for women-led SMEs in Scotland to access finance

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Abstract

This paper explores the potential role of crowdfunding as an alternative financing avenue for women-led Small and Medium-sized Enterprises (SMEs) in Scotland. Traditional financing routes are increasingly challenging for women entrepreneurs, who face significant biases and barriers in securing investment. The paper argues that crowdfunding can be a viable alternative financing route for SMEs, with a particular focus on women-led SMEs. This argument is based on research on a project led by the Scottish Women's Business Centre (WBC) that sought to develop and pilot a crowdfunding platform. The platform used a reward and donation-based crowdfunding model that was tailored to female entrepreneurs.

The findings from the project highlight two important insights. First, crowdfunding's viability as a financing method is underscored by its ability to raise capital and increase business visibility, although this success is heavily dependent on the nature of each business and the effectiveness of its promotional strategies. Second, developing and implementing a crowdfunding platform involves addressing the technical and operational aspects of it. In the project, challenges were encountered, including how to integrate it with existing systems, and the need for careful design of payment processes. These challenges require a business to be flexible in its approach when partaking in crowdfunding, along with robust support from the platform's technical staff to assist with issues of troubleshooting and managing payment systems.

Executive Summary

This paper examines the experiences and outcomes of a pilot crowdfunding project led by Women's Enterprise Scotland (WES), which aimed to support women-led small and medium-sized enterprises (SMEs). Women-led SMEs tend to lack access to capital and funding, which constrains their enterprise creation and growth. This in turn restricts national innovation and competitiveness and caps potential productivity. The primary goal of the project was to explore whether crowdfunding could be a feasible alternative financing method for women-led SMEs and, if so, in what ways. The pilot identified the successes, challenges, and lessons learned in using crowdfunding for women in business. This paper integrates insights from interviews with business owners who participated in the project and key organisers who managed the crowdfunding platform and provides recommendations for future crowdfunding campaigns.

Background

This paper gives a detailed overview of the insights and learnings from the study of a pilot crowdfunding project for women-led in businesses in Scotland. The pilot focused specifically on business variety by involving businesses across Scotland's diverse business base, and when investment is needed in business development. The pilot was run by WES ('WES Pilot'), that developed a Women's Business Centre (WBC) crowdfunding platform. The pilot took place between November and December 2023 and was funded by a grant from the Royal Bank of Scotland.

The University of Glasgow's study of the WES Pilot was designed to investigate the development and use of crowdfunding for small businesses and startups in Scotland that are women-led. This offers a perspective into gender discrepancies relating to entrepreneurship and/or business ownership. Historically, women-led businesses have been hampered by investor biases and by a male-centric discourse in entrepreneurship, where the role of 'entrepreneur' is usually described within a masculine framework (Ahl, 2006; Gupta et al., 2009), resulting in women led businesses being less able to access capital. This is further evidenced by the persistent gender gap in women's participation in business creation, innovation and business scale-up. Just 29% of all UK businesses are owned by women¹. Moreover, women face specific challenges in starting up a business, obtaining on average merely 53% of the initial capital male-owned businesses receive on average, and face constrained access to growth funding. Only 1.4% of the £23bn invested in UK startups in 2021 went to all-female founder teams, compared to 90% of the capital going to all-male founder teams². In other words, less than 2p in every £1 of UK equity funding went to all-female founder businesses as of 2022³. Given this context, the WES Pilot and University of Glasgow study sought to explore the viability of crowdfunding as an alternative access to finance for women-led businesses.

Eight Scottish businesses participated in the campaign. The businesses were chosen to represent a diverse spectrum of the Scottish business landscape, following an extensive selection process by WES. The businesses chosen represented various sectors, had different

¹ Survey research by Simply Business (2022)

² Dealroom (2021)

³ Enterprise Nation Business News (2023)

timelines and funding targets, with some at the start of their life cycles and others seeking funding to expand their operations. They also had geographical differences, representing the Central Belt (Glasgow, Edinburgh), West Lothian and the Scottish Highlands. These diversities are of note when considering the impact of geography on access to capital, with those in the Central Belt typically considered more viable for investment due to their proximities to Scotland's economic hubs. Below we provide a summary of the businesses. The businesses' names have been omitted to meet the ethical agreements of the University of Glasgow study.

1. Business 1

A bakery in Glasgow that was founded during the Covid-19 pandemic by a furloughed bakery manager. It initially began as a home-based business with a loan of £5,000 from Wevolution and has since grown into a wholesale and takeaway business with 10 employees, mostly women and LGBTQ+ individuals. The shop specialises in vegan and vegetarian products but is struggling due to rising costs. The owner sought £10,000-15,000 for ingredients, digital upskilling, packaging, and branding to expand online sales.

2. Business 2

A young entrepreneur creating botanical spirit drinks with local ingredients, based in Sutherland in the Scottish Highlands. The company is in its startup phase, with a business plan focusing on sustainability and community engagement. They sought £25,000 to fund their first production run. Their goal is to create high-value jobs in rural areas and diversify the distilling industry.

3. Business 3

Founded by a young entrepreneur and her mother, this company produces low-FODMAP energy drinks and snacks, ideal for people with digestive issues like Irritable Bowel Syndrome⁴. The business has been exporting to the EU and USA but sought to raise £15,000 to refine their product and expand their packaging. This business was particularly interested in exploring rewards-based crowdfunding.

4. Business 4

A clothing company saving waste fabric from the luxury fashion industry to make new sustainable clothing products for women. This business won the Scottish EDGE Net Zero category in 2022 and focuses on their 'Made in Scotland' branding.

5. Business 5

A candle-making company looking for £5,000 to cover ceramic and mould development, gaining sufficient capital to produce its first run, all in line with its goal to provide sustainable candles through a subscription service.

6. Business 6

This company produces cold-pressed dog food, aiming to compete with existing big-name brands like Bella and Duke. They were flexible in their crowdfunding strategy and planned to use the funds for marketing and product development.

⁴ Low FODMAP energy drinks are designed to tie into a low-FODMAP diet, where a person restricts consumption of all fermentable carbohydrates, reducing abdominal pain and other symptoms of IBS.

7. Business 7

A producer of high-quality oils, this business sought £25,000 to part-fund a semi-automatic bottling line to help scale their production and improve efficiency.

8. Business 8

This business aimed to address the issue of women-led businesses struggling with intellectual property (IP) management. The founder plans to develop a software platform to help women protect their IP, offering consultations as part of their crowdfunding rewards. The owner sought co-creation opportunities within WES.

These businesses were diverse, covering industries from food and beverages to fashion, pet care, and intellectual property, with a common goal of using crowdfunding to address financial needs for upscaling, innovation, and operational challenges.

The University of Glasgow study aimed to examine the success of crowdfunding campaigns in terms of both ‘hard’ economic (i.e. how much money a campaign raised) and ‘soft’ measurements (i.e. more intangible benefits such as better entrepreneurial skills, experience and confidence). Business and investment operate on a financial and profit basis, but part of success in business and in attracting investment includes developing a good reputation, taking a purpose in business approach, achieving wellbeing at work and a work-life balance. These factors emphasise the multidimensionality of business, and how they relate to ‘productivity’ is considered in the contemporary business environment. One example of this is the *triple bottom line* (TBL) approach, which is critical to understanding the context of this research project and for alternative investment and business planning in general. The TBL framework, introduced by John Elkington in 1994, encourages businesses to focus not just on financial performance, but also on the broader impacts they have on society and the environment. This shifts the traditional singular goal of profit maximisation towards a more sustainable and balanced approach, by evaluating success through three interconnected dimensions: **Profit**, **People** and **Planet**.

Profit

The triple bottom line approach requires businesses to continue pursuing financial goals, but to do so in a sustainable and ethical manner. Businesses must remain financially viable to survive, but the triple bottom line challenges them to balance short-term profits with long-term sustainability.

People (social responsibility)

This component of the triple bottom line emphasises a business’ responsibility to all its stakeholders, including employees, consumers, communities, and even future generations. Employee wellbeing is a core focus, particularly the notion of work-life balance. This is important for contextualising the findings from the University of Glasgow study, which investigated the impact of crowdfunding on women-led businesses’ work-life balance. This has further implications for critical aspects of entrepreneurial success, including capacity, caring responsibilities, mental health awareness and motivation.

Planet (environmental responsibility)

This component highlights the importance of environmental stewardship, urging businesses to reduce their environmental footprint and act towards sustainability. This

aims not only to reduce the environmental impact of a business, but also to make it more attractive to future investment as the overall business landscape shifts towards ‘greener’ initiated or focused businesses. There is a proven track record of such success in Scotland, with businesses such as Beauty Kitchen, Arbikie Distillery and ACS Clothing all achieving financial growth while building sustainable values into their core business model.

The triple bottom line approach argues that long-term success and sustainability are achievable only when businesses create value across all three areas: economic, social, and environmental. By integrating these dimensions, it asserts that businesses can build long-term trust with consumers, employees, and communities, thereby enhancing their brand reputation. They can mitigate risks related to social and environmental issues such as regulatory changes and resource shortages and can innovate and tap into new markets or customer segments that prioritise sustainability, opening doors to growth opportunities in ‘green’ and ethical products and services. This can, in turn, positively affect productivity by pushing a sustainable growth agenda at the business level and offers a framework in which entrepreneurs can develop their core business values to gear them up for long-term, sustainable success.

There is a growing body of literature about women-led crowdfunding. The key aspects of this are centred around the unique challenges and opportunities that female entrepreneurs face when seeking funding. Studies from Greenberg and Mollick (2017) have shown that female founders are often more likely to engage in reward-based crowdfunding than equity-based models. The Greenberg and Mollick (2017) study found that women tend to favour reward-based platforms like Kickstarter due to the lower perceived risks and the ability to maintain control of their businesses, while also fostering a sense of community and trust with backers. Additionally, Greenberg and Mollick note that gender dynamics in crowdfunding reveal that female entrepreneurs may benefit from different types of messaging, particularly those that emphasise social impact or community engagement, which resonate well with certain audiences, and tie into the social and environmental components of the triple bottom line.

However, little remains known about:

- How a vision of business community can shape its development and use
- What resources are needed to develop a business crowdfunding platform
- How campaigns work for different businesses from different sectors
- How to use the data from crowdfunding platforms to assess the value of a business
- How that data can be used to attract investment

These gaps combine to show that little is known about the strategic, operational and financial factors that influence the success of women-led crowdfunding in general, and, with a lack of knowledge in these specific areas, the practical implications for women-led SMEs in Scotland only, or in the whole UK, remain underexplored. Gaining a deeper understanding of these issues is critical for developing targeted support mechanisms and resources that can enable female entrepreneurs to leverage crowdfunding as a viable financing option. The WES Pilot was an important first step towards achieving this.

To address the above gap in knowledge the University of Glasgow study used the triple bottom line approach outlined above as its analytical framework. This framework enabled the research project to identify the opportunities as well as challenges of crowdfunding, and its potential costs and benefits for women in business.

All the above informed our study's central Research Question (RQ): *'How valuable, viable and useful is crowdfunding as an alternative financing route for women-led SMEs and startups, and how can crowdfunding be utilised for future business investment from a policy perspective?'* To address the central RQ, we asked three subsidiary RQs:

1. *'How can data from crowdfunding campaigns be used to assess the performance and investment potential of women-led SMEs in Scotland?'*
2. *'How do the "soft" skills and community-building aspects of crowdfunding contribute to long-term business growth and sustainability for women-led SMEs in Scotland?'*
3. *'What policy measures are needed to enhance the effectiveness of crowdfunding for SMEs, and how can government initiatives support the scalability of women-led businesses in Scotland?'*

The structure of the study will be: a Literature Review; Background Context; Methodology and Data; Findings; Conclusion; Summary and Recommendations.

Literature Review

Previous research into crowdfunding campaigns for women-led businesses are somewhat sparse, particularly within the context of reward and donation-based models. While there has been increased discourse on crowdfunding in general since the mid-2010s, particularly as an alternative to traditional bank loans in the wake of the 2008 financial crisis, this literature has predominantly analysed equity-based models. The focus has largely been on using the financial outputs of these platforms as the primary measure of success, often neglecting other important aspects such as social and environmental impacts. Equity crowdfunding has understandably garnered much of the academic attention due to its financial complexity and the larger sums of capital at stake, involving more established investors and accessible data resources. For example, studies by Bapna and Ganco (2019), Horvat and Papamarkou (2017), and Eliztur and Solodoha (2021) provide insights into how equity crowdfunding operates, often focusing on high-growth startups and their relationships with investors. Equity crowdfunding, with its higher financial stakes, involves more powerful actors and readily available data, making it an attractive subject for analysis. Yet, this focus on financial returns leaves gaps in understanding the broader role of crowdfunding models that may prioritise community engagement and personal and social outcomes over profit.

Less attention has been paid to donation and reward-based crowdfunding within the current business context, especially as it often relates to female entrepreneurs and businesses. While these models typically do not offer financial returns to contributors, they provide significant opportunities for businesses that are in their early stages or are seeking to engage with socially driven or niche communities. In the current context, donation and reward-based crowdfunding schemes are particularly relevant for smaller-scale businesses and entrepreneurs who might struggle to secure traditional forms of investment, such as women.

Furthermore, at time of writing, the University of Glasgow study was the first to investigate a female-only business platform in Scotland, where all the participating business were women-led. Previous research has often compared male and women-led crowdfunding campaigns by measuring them against economic metrics (such as total funds raised or average donation sizes), or by examining well-known platforms such as Kickstarter and GoFundMe (Gafni et al., 2020). This has led to a limited understanding of the distinct experiences of female

entrepreneurs, especially in the reality of a context where gendered business environments create unique challenges.

The current context indicates that women face significant barriers when seeking external finance, whether through traditional channels or crowdfunding. Studies by Brush et al. (2018), and Coleman and Robb (2016) have shown that women receive a disproportionately small share of venture capital, and fewer bank loans compared to men. Crowdfunding, particularly in its donation and reward-based forms, has emerged as a potential solution to this challenge, allowing women to bypass traditional investment routes and leverage their social networks to engage directly with potential backers. Research by Greenberg and Mollick (2017) suggests that women are more likely to succeed in reward and donation-based crowdfunding campaigns than men, partly due to their ability to craft more relational and communal pitches. This is especially relevant for reward-based crowdfunding, which often relies on social and communal structures for success.

By investigating a woman-only crowdfunding platform in Scotland, our research obtained a unique perspective on the economic, social, and personal impacts of crowdfunding on female entrepreneurs. Unlike the dominant focus on financial outputs, this University of Glasgow study explored how crowdfunding affects women's businesses in broader terms, including – but not only – its potential to serve as a viable alternative to traditional finance. As Horvat and Papamarkou (2017) note, the literature on equity crowdfunding often 'knows very little about the campaigns themselves'. The qualitative approach of this study therefore addressed that gap, by delving deeper into how female entrepreneurs in the WES Pilot navigated the crowdfunding landscape, economically and socially, as well as financially.

Moreover, the existing literature identifies several gender-specific barriers faced by female entrepreneurs when seeking investment. For instance, women are more likely than men to face credibility issues when pitching to investors, as noted by Reutzel and Belsito (2015). They may also be discouraged from applying for funding due to gender biases in the investment process (Alsos and Ljunggren, 2017). Furthermore, studies have shown that female entrepreneurs are perceived differently by financiers, who often view the 'ideal' entrepreneur as being male (Becker-Blease and Sohl, 2007), and that gendered constructions generally tend to negatively impact female entrepreneurs' access to finance (Boden and Nucci, 2000; Carter and McNulty, 2005; Greene et al., 2001). These challenges extend beyond perception; for instance, women-led ventures tend to pay higher interest rates on loans than their male counterparts, as found by Chen et al. (2017).

In this context, reward and donation-based crowdfunding represents an important tool for female entrepreneurs, offering them the opportunity to raise capital through direct engagement with their communities and increasing the likelihood of finding supporters who are willing to invest and donate. This not only helps mitigate these financial barriers but also creates a sense of empowerment and ownership among women-led businesses. By examining this underexplored area, the findings from this University of Glasgow study contribute to the literature on gender and entrepreneurship, highlighting crowdfunding's potential to address some of the systemic challenges women face in securing access to finance.

Context: Women in Business in Scotland

This section describes the context behind the creation of the Women's Business Centre's crowdfunding platform as part of a wider strategy to stimulate local economies and encourage entrepreneurial growth and investment in places across Scotland.

Scotland's National Strategy for Economic Transformation (Scottish Government, 2022) targets efforts to invest in regions that historically have had limited access to business support and funding, especially rural and underserved areas. Extending this to provide greater support for women-led SMEs is a logical step, and the WBC platform aimed to facilitate this by providing support to female entrepreneurs across Scotland, thus helping to reduce geographic disparities in business opportunities. SMEs make up 99% of Scotland's business base, yet as of 2023, only 23% of Scotland's SME employers were women-led. As such, boosting the number of women-led SMEs in Scotland is crucial to improving representation and gender equality in Scottish businesses⁵.

In an international context, crowdfunding has proven to be an effective method for broadening access to funding for SMEs, especially in countries where traditional financing options are limited. For example, in Canada, crowdfunding platforms enabled 40.6% of women-owned SMEs to access external financing from 2007-2017. This had proportional economic outcomes, with the share of these businesses that exported growing from 5.9% to 11.2% in the same timeframe⁶. It has had a marked impact on women-led businesses, which have grown by 114% in the last 10 years, partly due to the democratisation of funding sources like crowdfunding. In the US, 42% of all businesses are owned by women, underscoring the rapid rise in female entrepreneurship as crowdfunding has expanded, offering an accessible alternative to bank loans or venture capital which have traditionally dominated the funding market, but have been largely inaccessible for women-led SMEs⁷.

In Scotland, however, the picture remains more challenging. Of the 240,000 active Scottish companies as of October 2023, just before the pilot project, only approximately 40,000 (<17%) were women-led – placing Scotland among the lowest of the UK nations in terms of female business ownership⁸. Crowdfunding could potentially offer a viable way to raise this number, empowering more women to start, scale up and sustain their businesses. Over the last decade, crowdfunding has surged, becoming a significant financing route for entrepreneurs and SMEs, with the crowdfunding market size valued at \$1.4bn in 2023. It is forecast to grow exponentially, reaching \$6.8bn in 2031 (Pradeep et al., 2023).

The challenge for women-led businesses in Scotland, however, lies in overcoming systemic gendered barriers such as limited access to “boys club” business networks, where women remain underrepresented in leadership positions and are generally paid less than men⁹; relatively poor access to learning tools for financial literacy, and biases in traditional funding

⁵ Scottish Government, Small Business Survey Scotland: 2021 (12 January 2023):

<https://www.gov.scot/publications/small-business-survey-scotland-2021/pages/introduction-and-key-results/>

⁶ Statistics Canada, ‘Research Blog: Women-owned businesses in Canada (April 3, 2019):

<https://www.statcan.gc.ca/en/blog/cs/wob>

⁷ Zhou, L. ‘Women in business statistics: The ultimate list of 2023 trends) (July 29, 2023):

<https://www.luisazhou.com/blog/women-in-business-statistics/#>

⁸ The gender index, ‘UK women-led companies 2023’: <https://www.thegenderindex.co.uk/explore>

⁹ Baird, M. ‘Women are Still Underrepresented in Leadership and the Technology, Information and Media industry’, LinkedIn Economic Graph (March 7, 2023): <https://economicgraph.linkedin.com/blog/women-are-still-underrepresented-in-leadership-and-the-technology-information-and-media-industry>

mechanisms. While crowdfunding offers a more inclusive pathway, there remains a need for targeted support in developing skills for running successful campaigns, fostering investor confidence, and scaling up businesses after initial funding success. This points to the importance of creating platforms specifically designed for female entrepreneurs – like the Women’s Business Centre’s initiative – which aims to bridge these gaps and provide tailored resources for female founders.

Types of crowdfunding platforms and their purpose

There are four main types of crowdfunding platforms, each catering to different financial models. They are: **reward-based**, such as Kickstarter, which allow contributors to fund projects in exchange for non-financial rewards (e.g. early access to a product or exclusive content). These platforms are especially useful for creative ventures or startups seeking early customer engagement and market validation. **Donation-based** platforms like GoFundMe support individuals or causes without offering financial returns. These platforms are commonly used for charitable causes, community projects, or social ventures’ equity-based and debt-based peer-to-peer lending. **Equity-based** platforms like Crowdcube and Seedrs enable contributors to invest in startups in exchange for equity. This model is suitable for businesses that are willing to share ownership in return for capital, typically leveraged by high-growth potential firms. **Debt-based** crowdfunding (also known as peer-to-peer lending), through platforms like LendingClub, allows businesses to borrow from several lenders, who receive interest on their loan. This is a viable alternative to traditional loans, especially for SMEs that struggle to access bank financing.

The Women’s Business Centre platform was built on **reward-based** and **donation-based** crowdfunding models, which are particularly aligned with the principles of contributing to a project, business, or social cause in return for non-financial rewards or simply out of benevolence. These models are highly inclusive, providing access to finance for SMEs and startups by allowing businesses to tap into niche market segments or enabling entrepreneurial ventures that might otherwise struggle to obtain traditional financing.

This type of crowdfunding has great potential to promote **inclusive growth**, helping marginalised businesses – such as those led by women or based in rural areas – to access capital and finance¹⁰ without the need for difficult-to-obtain loans and bureaucratic intervention (Baber, 2021). These models empower entrepreneurs to raise funds directly from communities and supporters who believe in their product and/or mission, bypassing traditional gatekeepers in the financial system.

While donation-based crowdfunding platforms are already abundant, provision of dedicated support and resources for women-led SMEs, like those provided by the WBC platform, remain extremely limited. Thus, the Pilot allowed us to obtain unique insights within the research context, particularly around how such platforms can be tailored to better serve female entrepreneurs. The study also scrutinised the challenges around implementing the Pilot crowdfunding platform’s technologies into the daily operations of women-led businesses, offering a perspective that has yet to be thoroughly explored in the existing

¹⁰ “Capital” here refers to assets or resources (money, equipment, or property) that are used to generate wealth, while finance is the management, creation, and study of money, investments and other financial instruments.

literature. This suggests an important potential area for future research, particularly on how crowdfunding can be integrated into broader business ecosystems for women entrepreneurs.

Methodology and Data

To address the central RQ, in the University of Glasgow study we adopted a qualitative approach to explore the lived experiences of entrepreneurs engaging in crowdfunding, beyond the traditional focus on financial metrics. As noted above, typically crowdfunding literature emphasises financial outputs, such as the amount of capital raised, as the primary measure of success. However, this study incorporated a triple bottom line framework, giving equal consideration to **people**, **planet** and **profit**. By assessing the impact of crowdfunding on the entrepreneurs' quality of life (people), the environmental sustainability of their business practices (planet) and their financial success (profit), this approach offered a more holistic lens through which to analyse the effectiveness and long-term value of crowdfunding for women-led SMEs in Scotland.

The research design was **exploratory**, aiming to understand how crowdfunding affected both personal and business outcomes for entrepreneurs to answer sub-RQ 2. It also sought to uncover how crowdfunding platforms can be integrated into broader economic and social strategies, relating to sub-RQ 3.

The methods employed in this study were **semi-structured qualitative interviews**, supplemented by financial data from the WES Pilot, provided by WES upon completion of their Pilot project. In total, 14 interviews were conducted with two key groups: entrepreneurs who participated in the WES Pilot, and members of the WES team who ran the trial scheme. These interviews covered a wide range of topics, including the setup and execution of crowdfunding campaigns, technical and operational challenges faced by participants, marketing and promotion strategies, and the overall impact of the crowdfunding on business operations as well as on the entrepreneurs' personal lives, pertaining to sub-RQs 1 and 3.

The sample consisted of **eight businesses** from a variety of industries, ranging from food and drink to intellectual property services. This diversity is somewhat unusual for a reward-and-donation based platform, which typically caters for smaller-scale goods providers. The businesses participating in the WES Pilot represented a mix of **startups** (three businesses launched within the last two years) and **established enterprises** (five businesses looking to expand their operations). Geographically, the businesses were based across Scotland, from the Central Belt (Glasgow and Edinburgh) to the rural Scottish Highlands, offering insights into the experiences of businesses operating in different socio-economic and geographic contexts.

The businesses were selected from a range of sectors, including:

- Four businesses in the food and drink industry
- Three businesses in commodity provision (fashion and household goods).
- One online service provider in intellectual property.

This variety was considered important for obtaining comprehensive insights into how different types of businesses leverage crowdfunding, enabling the study to capture data from

both traditional and non-traditional crowdfunding participants, which was relevant when considering sub-RQs 1 and 3.

The data analysis was **thematic** in nature, allowing us to identify key themes and patterns that emerged from the interview transcripts. Through data categorisation, the University of Glasgow study explored the participants' experiences and perceptions of crowdfunding as a tool for business growth, financial independence, and community engagement. As mentioned above, the interview data was supplemented with financial metrics from the WES Pilot's campaigns, to ascertain quantitative insights into the crowdfunding outcomes for the participating businesses. This was particularly helpful when considering sub-RQ 1.

In line with ethical guidelines set by the University of Glasgow, all participants – businesses owners, business names and WES team members – were pseudonymised to protect their identities. Their names are not used in this article.

Findings

Introduction to the Findings

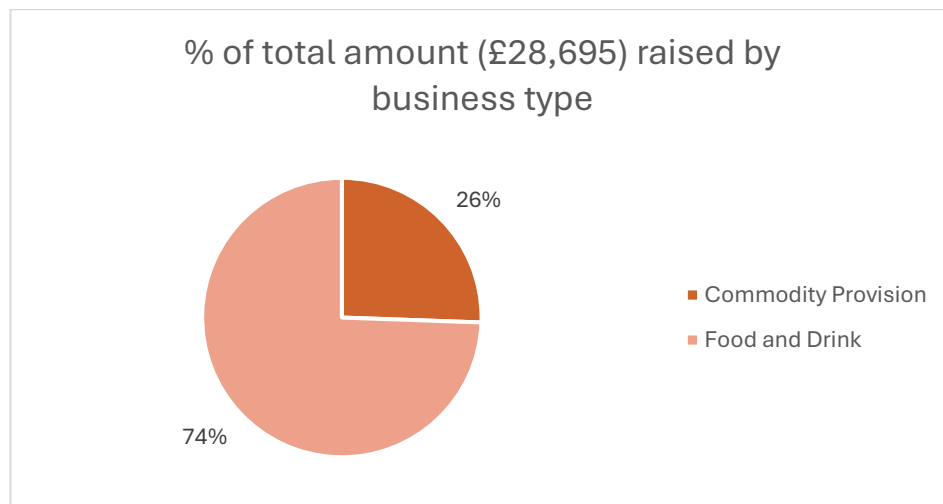
This section presents the core findings from the University of Glasgow study of the WES Pilot, addressing the central RQ and its three subsidiary RQs. The analysis is organised according to the three subsidiary RQs, highlighting financial patterns, the role of community-building and soft skills in sustaining women-led SMEs, the operational challenges associated with running a crowdfunding campaign and identifying potential policy measures to enhance crowdfunding's effectiveness and scalability for female entrepreneurs in Scotland. This approach has generated a nuanced understanding of how crowdfunding can function as an alternative financing mechanism for women-led SMEs.

These findings contribute to a growing body of research examining crowdfunding as a tool for business development, especially in contexts where female entrepreneurs face unique financial and social barriers (Cumming et al., 2021; Shneor and Vik, 2020). Key themes that emerged from our analysis include the diversity of financial outcomes, the impact of relational and community-building skills, and the need for supportive policy frameworks to ensure the scalability of crowdfunding as a viable financing option for women-led businesses.

Crowdfunding data for assessing SME performance and investment potential

In evaluating the value, viability, and utility of crowdfunding for women-led SMEs, it was critical to examine how data collected from the WES Pilot campaigns could serve as an indicator of business performance and investment potential. Across the eight campaigns, a total of £28,695 was raised from 468 donations (473 minus voided total), with an average donation of £61.31. These data points revealed variations in crowdfunding outcomes, with Figure 1 illustrating that the three businesses in the food and drink sector raised 74% (£21,360) of the total, and the five businesses in commodity provision raising just 26% (£7,335) of the overall total. This highlights the notion that women-led business in smaller, 'lower-value' sectors tend to be more successful than those in the more male-dominated commodity provision service industry, reflecting the male-dominated structure that exists in Scotland's business base.

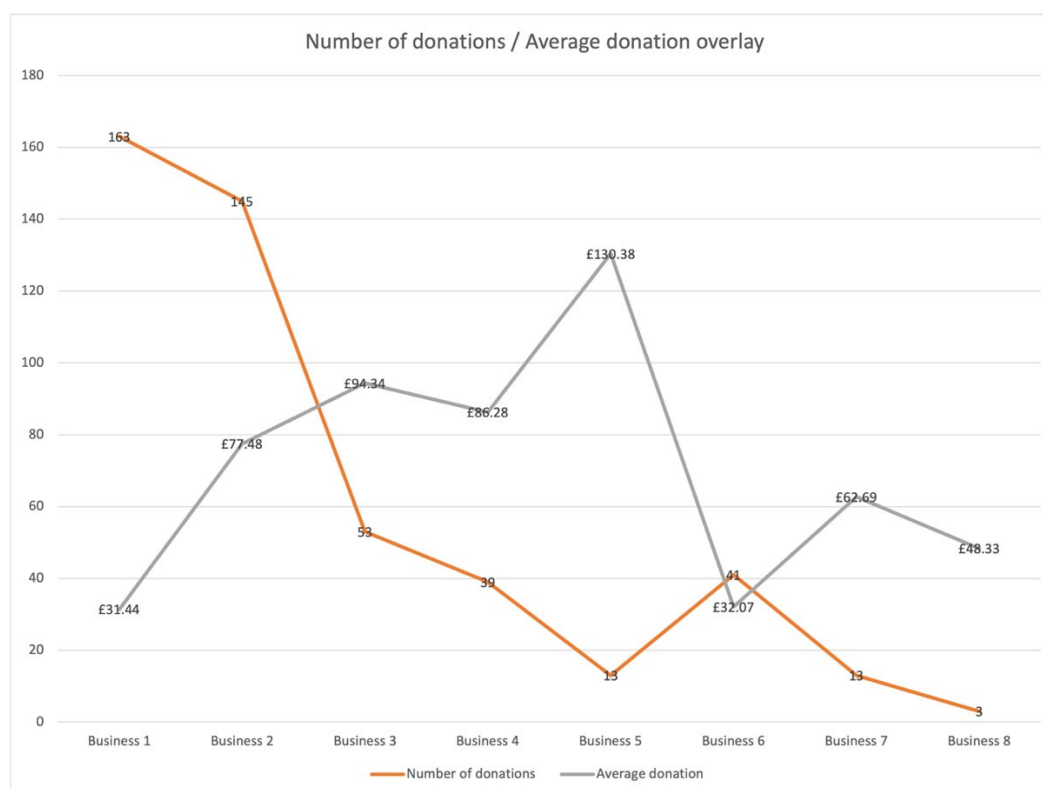
Figure 1. Percentage of total amount raised by business type



Source: *Women's Enterprise Scotland Crowdfunding Pilot Master Data*.

Individual campaign results revealed diverse financial patterns that align with findings from other studies on reward and donation-based crowdfunding. Figure 2 shows that **Business 1** (in the food and drink sector) for example, raised £5,125 from 163 donations - an average contribution of £31.44, with most donations being from 'new donors' (150). This indicates a strong initial interest in the business, though the smaller average donation suggests a preference for low stakes support which is common in that sector (Courtney et al., 2017). This further aligns with Greenberg and Mollick's (2014) research, which emphasises that crowdfunding for consumer-facing products often attracts broad, small-scale contributions. **Business 2** raised the highest amount of any campaign, £11,235 from 145 donations, averaging at £77.48 each. **Participant A** (Business 2) attributed this success to 'strong social media engagement', despite initial public confusion about their product's unique value proposition, with the donations ramping up once she had clarified her product. These data reflect findings from Gerber and Hui (2013), who note that product clarity is a critical factor in crowdfunding success, as backers are more likely to invest when they understand the product's market value.

Figure 2. Plot of average donation in £ overlaid with total number of donations per business



Source: Women's Enterprise Scotland Crowdfunding Pilot Master Data.

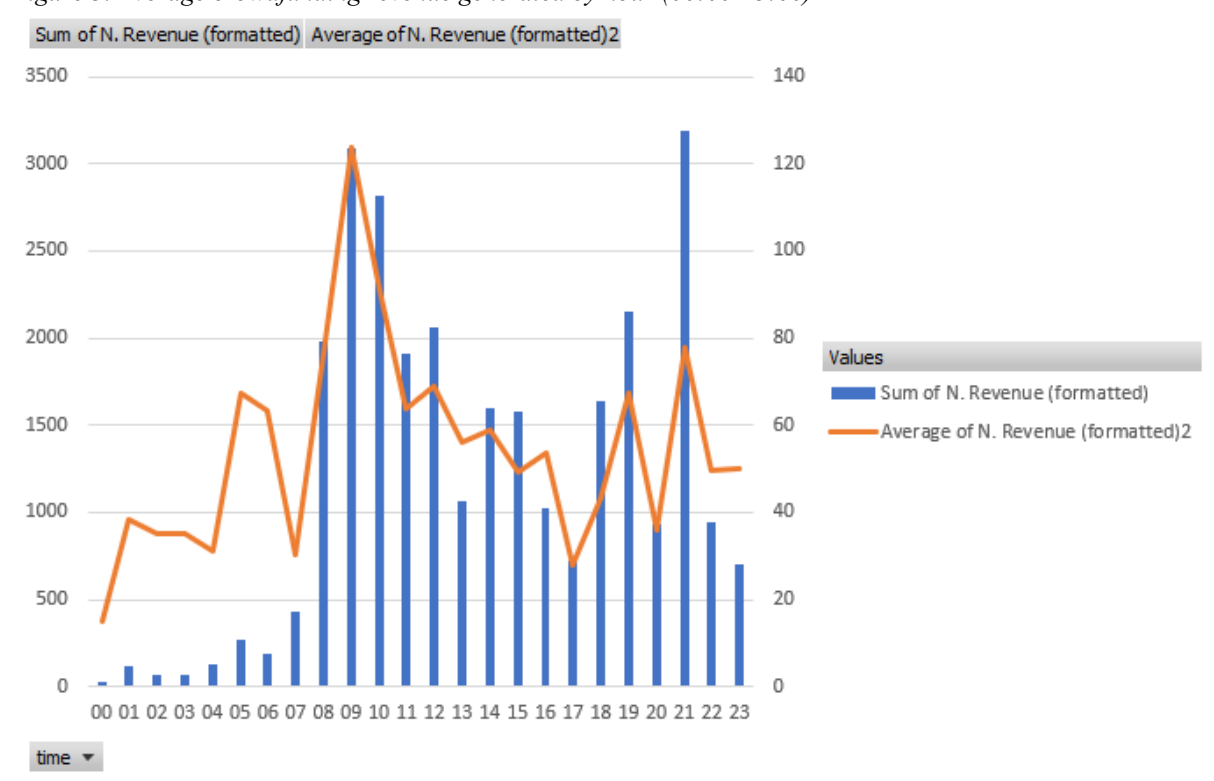
The financial diversity among the campaigns highlights crowdfunding's flexibility as a financing option for businesses in various sectors and at different points of their journeys. Businesses can attract either broad, small-scale support or specific high-value donations from fewer backers. For example, **Business 3** raised £5,000 from just 53 donations, with an average of £94.34 per donation, exemplifying the latter approach, attracting higher-value contributions that probably stemmed from targeted relational engagement. Furthermore, Figure 2 shows the cross-sector effectiveness potential of crowdfunding. Businesses 1 and 2 (food and drink) attracted a higher number of donations with a lower average donation value, whereas businesses 4, 5, 7 and 8 (commodities) took a lower number of donations with a higher average value. From the cohort, only Business 6 had a lower average donation than number of donations. Despite the small sample size, this gives a surface-level look into the flexibility of crowdfunding across sectors, with businesses able to tailor their aims to either a higher number of donations with a smaller average, or a lower number of donations with a higher average to meet their campaign goals. It would be interesting to explore if this pattern occurs with a larger sample size in future research, although it is consistent with the research of Shneor and Vik (2020), who argue that small businesses with clear, compelling brand narratives can attract higher-value investment even from a limited donor pool.

These findings underscore crowdfunding's potential as a tool for assessing investment potential. By analysing metrics such as donation size, donor numbers, and audience engagement, businesses and investors can gain insights into a business's market appeal and scalability. The WES Pilot data demonstrate how successful campaigns can serve as a form of 'crowd-based due diligence', with public interest acting as a proxy for market viability.

Such data-driven insights are especially valuable for women-led SMEs, which frequently lack access to traditional investor networks (Cumming et al., 2021).

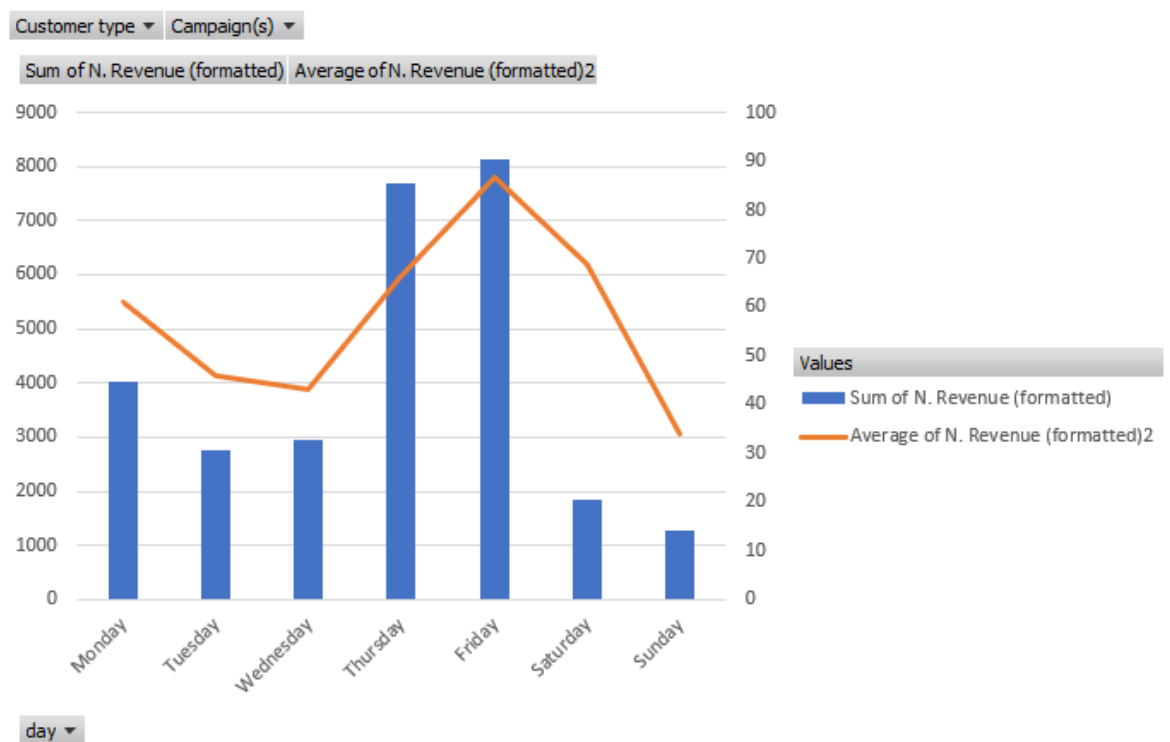
The findings also show the importance of time and targeted management of *when* crowdfunding campaigns are most successful. Figure 3 shows that the biggest spikes in average donations happened at 8am (at the start of the workday), and at 9pm (general relaxation time), with the lowest daytime donations happening at 1pm and 5pm (lunchtime and the end of the workday). Figure 4 shows that the most effective days of the week peaked on a Friday, with Thursday being the second-most effective day for raising revenue. Somewhat surprisingly, the days with the lowest average revenue raised were the weekend – Saturday and Sunday. Previously, businesses participating in crowdfunding campaigns may have chosen to focus on the weekend for promoting their campaigns, however Figure 4 shows that this would be counterproductive. Thus, this data can be used to inform the best days and times for businesses partaking in crowdfunding to promote their social media campaigns – and crucially when not to. Building a specified, time-oriented approach for promoting campaigns could potentially help to streamline efficiency in terms of time and resources, while ensuring the most impactful outcomes for businesses through crowdfunding, and minimising ineffective campaigning strategies.

Figure 3. Average crowdfunding revenue generated by hour (00:00-23:00)



Source: Women's Enterprise Scotland Crowdfunding Pilot Master Data.

Figure 4. Donation revenue across days of the week.



Source: Women's Enterprise Scotland Crowdfunding Pilot Master Data.

The Role of Soft Skills and Community-Building in Long-term Growth

The findings also emphasise the role of soft skills – such as communication, storytelling, and community-building – in driving crowdfunding success and promoting long-term business sustainability for women-led SMEs. The WES Pilot's participants consistently highlighted the importance of relational engagement in sustaining backer interest and establishing brand loyalty, particularly through social media.

Participant A (Business 2) attributed her campaign's success to regular social media updates on platforms like Facebook and LinkedIn, where she cultivated an active following by posting daily updates over the nine-week Pilot period. This approach aligns with the findings of Koch and Siering (2019), who emphasise that frequent engagement on social media can reinforce backer loyalty, generate and maintain brand awareness. However, utilising social media can be tricky, and may not come as easily to older business owners or business owners who lack the digital skills to leverage it properly. Further, as noted by **Participant B (Business 8)**, social media engagement alone may not directly translate into financial contributions. Her campaign encountered limited backer interest despite strong LinkedIn engagement, underscoring that social media strategies must align with target audience expectations to yield financial returns. This observation echoes Lukkarinen et al. (2016), who argue that successful crowdfunding campaigns often require a tailored approach to reach and resonate with specific demographic groups.

In addition to the demand for active community engagement, participants reported that the intensive nature of running a crowdfunding campaign had significant implications for their work-life balance, with considerable time and energy being required to manage campaigns.

Participant C (Business 1) described her campaign as ‘particularly labour-intensive, especially during harvest time’, while **Participant F (Business 5)**, who had young children, emphasised the personal sacrifices involved to keep her campaign running. Wesemann and Wincent (2021) highlight similar challenges, noting that access to capital can disproportionately affect women entrepreneurs who often juggle family and business responsibilities. For some participants, the intensity of campaign management was overwhelming, suggesting a need for crowdfunding platforms to offer more structured support to help entrepreneurs navigate crowdfunding demands.

Despite these challenges, participants also recognised the lasting *non-financial* benefits of participating in the WES Pilot. In addition to increased brand awareness, several participants reported higher levels of entrepreneurial confidence and a stronger sense of community belonging. **Participant A** remarked that ‘My confidence has grown so much as an entrepreneur’, and **Participants A, B and C** all commented on their increased confidence after TV and radio promotion of their products and campaigns, reflecting how the relational aspects of crowdfunding can foster personal growth, as well as community connections that may benefit a business in the long term. This can also increase the future investment potential of businesses, with investors being more likely to back a business with a confident – and therefore apparently competent – leader. These findings also reinforce the importance of soft skills and community-building as an aspect of crowdfunding, highlighting how the relational dimensions of these campaigns go far beyond traditional financing routes, and can contribute to long-term business growth beyond immediate financial success.

Policy Measures to Enhance Crowdfunding Effectiveness for Women-led SMEs

Our analysis of the WES Pilot also exposed several critical areas where policy interventions could potentially enhance the value and viability of crowdfunding as a financing tool for women-led SMEs. Participants frequently cited technical and operational challenges with the platform, such as issues with processing payments, limited flexibility in content presentation and user interface issues around inadequate visibility of key campaign information. For example, **Participant A (Business 2)** noted that rewards information was placed at the bottom of the webpage, leading many backers to overlook it. **Participant D (Business 3)** also encountered difficulties with confirmation emails and payment security, both of which somewhat undermined backer trust, and potentially limited campaign success. Such issues align with the findings of Lehner (2013), who identifies usability and reliability as crucial factors in building trust within crowdfunding platforms. Although the WES Pilot was just that – a Pilot with inevitable teething problems – it is worth noting that addressing these issues could make crowdfunding more accessible and reliable for a broader range of female entrepreneurs in future builds.

Insights obtained from the WES platform developers (‘Organisers’) further illuminate the operational difficulties and strategic goals associated with the setup and management of the WES Pilot platform. **Organiser A** described significant challenges with payment processing (reflecting the feedback from Participant D), noting that manual interventions were frequently required, which added stress for both the WES team and the campaign participants: ‘There were significant issues with the payment processing plug-in, which required a lot of manual workarounds’. **Organiser B** highlighted the need both for a more streamlined payment solution to reduce administrative burdens and enhance the platform’s scalability, and for a more user-friendly experience: ‘We wanted to create a welcoming and simple site for people

to navigate and use'. **Organiser B** also noted that integration with WES's existing website(s) proved a challenge: 'The build of the platform was tricky... The main issue was having the existing WBC site and wanting to create a different platform'. This again aligns with calls in the literature for improved technical infrastructure in crowdfunding, as a seamless user experience can directly impact campaign success and user retention (Cumming et al., 2021).

Similarly, **Organisers C, D and E** emphasised the need for clear communication, flexibility and user-centred design in the WES crowdfunding platform: 'We aimed to make the platform as easy and simple as possible while ensuring it met the needs of our participants'. **Organiser C** noted the challenge of aligning participant expectations with platform capabilities, underscoring the importance of transparency in Pilot projects to manage this (see Mollick, 2014). **Organiser D** highlighted communication issues during the transition to an integrated platform, stressing the need for flexible timelines to manage technical adjustments – this was naturally difficult during the Pilot programme which was only run for a short, fixed-term period. **Organiser E** focused on accessibility, aiming for a user-friendly platform despite initial 'teething problems'. These insights from the WES organisers suggest that policy support for adaptable timelines, transparent communication and user experience research could enhance crowdfunding's effectiveness for women-led SMEs and ease the complexities of implementing the design, setup and rollout of a new crowdfunding platform.

These findings suggest that policy measures may productively focus on supporting platform development and enhancing the technical functionality of crowdfunding platforms to maximise their potential as an alternative financing route. This could include government grants to improve payment processing and public/private partnerships with FinTech companies who could facilitate closing current digital skills gaps. Furthermore, ensuring secure data handling and optimising user interface design should be a key focus for crowdfunding platform developers. Additionally, policies to promote mentorship and skills development could further support female entrepreneurs who wish to participate in crowdfunding. As demonstrated by the WES Pilot participants, effective storytelling and engagement strategies are essential to crowdfunding success; thus, training programmes in digital marketing, communication, and community management could equip female business owners with the skills necessary for successful campaigns. Brush et al. (2019) emphasise that mentorship programmes not only provide technical guidance but also bolster entrepreneurs' confidence, enabling them to better navigate the complexities of crowdfunding.

Moreover, public awareness initiatives promoting crowdfunding as a viable financing option could broaden the pool of potential backers, thereby increasing campaign success rates for women-led SMEs. Policymakers could incentivise participation through tax relief or match-funding grants for women-led crowdfunding campaigns, particularly in sectors with lower female representation. By addressing the unique barriers faced by female entrepreneurs in crowdfunding – such as lack of access to traditionally male networks and work-life balance constraints – policy measures could help to make crowdfunding as a financing model more equitable and sustainable. These findings align with Cumming et al. (2021), who advocate for structural reforms in alternative financing to address gender disparities in access to capital.

Summary of Findings

Overall, the findings from our study show that crowdfunding has considerable potential as a financing route for women-led SMEs in Scotland, offering both financial and non-financial benefits. However, the success of crowdfunding depends heavily on entrepreneurs' capacity

for community-building, soft skills, and operational resilience. The technical and operational challenges identified by the WES Pilot participants underscore the need for policy measures to support female entrepreneurs through improved platform functionality, mentorship, and public awareness initiatives. Addressing these areas would enhance crowdfunding's viability as an alternative financing mechanism, contributing to the scalability and sustainability of women-led SMEs.

Our analysis demonstrates that crowdfunding represents a valuable, viable and potentially transformative financing route for SMEs and startups, especially when policy initiatives support its growth. This means that, with targeted government interventions, planning and support, crowdfunding could become a more accessible and powerful tool for fostering female entrepreneurship, thereby advancing Scotland's economic inclusivity and innovation and boosting its bottom-up productivity from its small business base.

Conclusion

This study examined the role of crowdfunding as a valuable, viable, and useful alternative financing route for women-led SMEs in Scotland, evaluating its effectiveness through campaign data analysis, community engagement, and policy implications. The findings suggest that crowdfunding offers significant financial and non-financial benefits, but also entails areas that require structural support and policy intervention for scalability. Each research question is addressed below, drawing on the insights from our analysis of the Women's Enterprise Scotland (WES) Pilot.

'How can data from crowdfunding campaigns be used to assess the performance and investment potential of women-led SMEs in Scotland?'

Our analysis of data from the WES crowdfunding Pilot demonstrates that campaign metrics – such as total funds raised, average donation size, and donor engagement – provide valuable insights into SME performance and public appeal. Businesses in consumer-oriented sectors, particularly food and drink, attracted broader interest and achieved higher total donations than commodity-based businesses, reflecting how product type can influence crowdfunding success. These findings confirm that crowdfunding data can serve as 'crowd-based due diligence', allowing investors to gauge a business's investment potential, which is especially beneficial for female entrepreneurs with limited access to traditional financing channels (Cumming et al., 2021). These findings also reflect crowdfunding's flexibility and cross-sectorial potential as an alternative financing route which offers multiple options for businesses in different sectors. Further, as Baber (2021) asserts, the lack of bureaucracy and quicker access to finance is another important benefit of crowdfunding compared to traditional longer application processes. This could be particularly powerful in Scotland, which has large geographical and sectorial diversity, requiring high levels of agility and flexibility.

'How do the "soft" skills and community-building aspects of crowdfunding contribute to long-term business growth and sustainability for women-led SMEs in Scotland?'

Crowdfunding success is highly dependent on 'soft' skills, such as storytelling, social media engagement, and relationship-building. The findings from this study indicate that businesses with strong community engagement strategies, like regular social media updates and active donor communication, fostered brand loyalty and sustained customer interest, which are crucial for long-term growth. Additionally, participants reported gaining enhanced

entrepreneurial confidence and community support, suggesting that crowdfunding offers relational benefits that extend beyond immediate financial outcomes. These soft skills are essential not only for campaign success but for building a sustainable business network, increasing the overall viability of Scotland's SMEs, which make up 99% of Scotland's business base¹¹.

Policy Measures to Enhance Crowdfunding Effectiveness and Support SME Scalability

The WES Pilot revealed operational challenges, such as platform usability, payment processing issues, and limited content flexibility, which underscore the need for supportive policy measures and for the careful planning, preparation and management of crowdfunding platforms and their related digital technologies. Government support for technical infrastructure – such as grants for platform development and partnerships with FinTech firms – could enhance user experience and trust. Additionally, policies promoting mentorship and skills training to close the ongoing gender skills and salary gap, and the underrepresentation of women in technology roles¹² would empower female entrepreneurs to navigate the complexities of crowdfunding, while public awareness campaigns and tax incentives could broaden crowdfunding's reach and scalability for women-led SMEs¹³.

Summary and Recommendations

This study concludes that crowdfunding is a valuable, viable, and useful alternative financing route for women-led SMEs and startups, particularly as it provides both financial capital and non-financial benefits such as brand visibility and community support. Our analysis indicates that crowdfunding enables businesses to attract investment and assess their market appeal, making it a viable model for supporting growth in diverse sectors. However, to enhance its utility for future business investment, policy interventions are essential.

For crowdfunding to become a more scalable and sustainable financing tool, particularly for female entrepreneurs, we recommend several targeted actions:

- 1. Support for Platform Development:** Investment in platform functionality, payment processing, and user interface improvements would enhance crowdfunding's reliability and accessibility, ensuring a smoother user experience, enhanced backer trust, and therefore increased outcomes.
- 2. Mentorship and Skills Training:** Providing female entrepreneurs with skills training in digital marketing to close the gender skills and salary gap (see footnote 12), storytelling, and financial literacy is crucial for campaign success, empowering them to leverage crowdfunding effectively.
- 3. Public Awareness and Incentives:** To broaden crowdfunding's impact, policies should promote public awareness and offer tax incentives for backers, particularly in underrepresented sectors, to encourage wider participation and financial support.

¹¹ Scottish Gov. Small Business Survey Scotland: 2021.

¹² Jamie Hepburn MSP in BCS "In Scotland, the proportion of women in technology roles is approximately 23%... Research has also shown that across the regions of the UK, Scotland has the biggest expected salary gender gap of nearly £20,000 between women and men in digital roles".

¹³ BCS, The Chartered Institute for IT. 'Scotland's tech sector is thriving, but gender and skills gaps remain' (20 March 2023): <https://www.bcs.org/articles-opinion-and-research/scotlands-tech-sector-is-thriving-but-gender-and-skills-gaps-remain/>

In summary, with supportive policy initiatives, crowdfunding can be further leveraged as a powerful tool for business investment, helping to bridge financing gaps, support women-led SMEs, and contribute to Scotland's economic inclusivity and innovation.

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