

# **The Gender Gap in Entrepreneurial Finance: A Literature Review and a Research Agenda**

## **Introduction**

It has been widely accepted that female entrepreneurship has remarkable contribution to the economy and ( Jennings and Brush, 2013; Coleman and Robb, 2009; Minniti, 2009, Carter and Marlow, 2003) However, female-owned firms underperform to their male -counterparts in almost every aspect, as Carter, Anderson and Shaw (2001); Fairlie and Robb (2009) suggest, and they found it can be directly related to the issue of undercapitalization. In fact, accessing to financial capital is critical to the start-up and consequent performance of any venture (Coleman and Robb; Minniti, 2009). However, women entrepreneurs are disadvantaged by their gender, evidently, including accessing to both formal and informal capital resources (Marlow and Patton, 2005). Consequently, this leads to long term under performance.

In reality, the last two decades witness a growing attention in research on gender issues in entrepreneurial finance. Yet, we noticed the fragmented as well as evolutionary nature of this field, which gives rise to the substantial knowledge gaps. Therefore, a systematic review is needed to have a holistic and updated understanding of the gender gap in entrepreneurship financing.

## **Methodology**

we follow the systematic literature review methodology (Tranfield et al.'s 2003) to have

a comprehensive review on the literature.

### ***Selection of the materials***

Since we are seeking widely accepted and prudent scientific works, the inclusion criteria for materials should be strict enough to assure the high quality. Therefore, we use Scopus (<http://www.scopus.com>), the largest database of peer-reviewed publications, to select the papers to be included in our literature review. We only consider the materials published in English as it is the most prevalent language in academia globally. Besides, as we are aiming to have the most updated view in this topic. Also, our literature review follows the “5Ms” framework, as it is from the seminal work of Brush et al. (2009) on women’s entrepreneurship. It reaches the conclusion by reviewing relevant papers published from 1996 to 2006. Therefore, in our work we restrict articles only published starting from 2007 to have a coherent view.

Furthermore, we are interested in the debate among entrepreneurship scholars. In order to find out the most reliable literature, we decide to just include publications from high-quality entrepreneurship journals. To single them out we resort to five journal rankings, namely, Scimago Journal & Country Rank (SJR) in the area of "Economics, Econometrics and Finance" (top 500) and "Business, Management and Accounting" (top500) respectively; the CiteScore metrics in the area of "Economics, Econometrics and Finance" (top 500) and "Business, Management and Accounting" (top500) respectively; in addition, Financial Times research rank (top 50) is considered. In total, 21 entrepreneurship journals are founded and included in our literature review. Table 1 reports the journals that appears in our criteria at least once, and their positions in the

ranks are demonstrated.

	Entrepreneurship Journals	SJR: Economics, Econometrics and Finance (top 500)	SJR: Business, Management and Accounting (top 500)	CiteScore metrics: Economics, Econometrics and Finance (top 500)	CiteScore metrics: Business, Management and Accounting (top 500)	FT Research Rank (top 50)
1	Entrepreneurship Theory and Practice	35	27	3	5	8
2	Strategic Entrepreneurship Journal	63	62	24	61	48
3	Small Business Economics	96	110	57	113	93
4	Entrepreneurship and Sustainability Issues	161	195	25	63	
5	Entrepreneurship and Regional Development	174	209	73	148	
6	Foundations and Trends in Entrepreneurship	234	285	122	253	
7	Journal of Social Entrepreneurship	396		213	387	
8	Journal of Entrepreneurship	439		321		
9	International Journal of Entrepreneurship and Small Business	446		377		
10	Journal of Entrepreneurship in Emerging Economies	452			234	
11	International Journal of Gender and Entrepreneurship	499		275		
12	Journal of Entrepreneurship Education			117	238	
13	Journal of Business Venturing		28		8	17
14	International Small Business Journal		105		65	
15	Journal of Small Business Management		119		71	
16	International Entrepreneurship and Management Journal		230		123	
17	International Journal of Entrepreneurial Behaviour and Research		318		171	
18	Journal of Small Business and Enterprise Development				316	
19	Journal of International Entrepreneurship				312	
20	International Journal of Entrepreneurship			281		
21	Academy of Entrepreneurship Journal			439		

*Table 1. The list of selected entrepreneurship journals*

### ***Identification of keywords***

Before interrogating the database, keywords should be carefully identified. Since we are interested in the “gender gap in the entrepreneurial finance”, the keywords are

*gender*, *entrepreneurial* and *finance* from intuition, and they should be combined through AND to make sure the returned results meet all these three requirements. Moreover, the words implying same meaning are considered, such as *sex*, *female* for *gender*, and *startup*, *venture* for *entrepreneurial*. Moreover, the subsets of *finance* should be also involved, in case some works are focusing on one or some of specific entrepreneurial financing channels, the main types are *debt* (or *loan*, *bank*), *venture capital* (or *VC*), *business angel*, *crowdfunding* and *initial coin offering* (or *ICO*). Thus, all the keywords identified are grouped into three sets according to their relevance: the first set is related to gender or bias (9 keywords), the second to entrepreneurship (3 keywords), and the third to financing (11 keywords). Then we can form the queries by combining three keywords from respectively three sets both through logical AND, and through logical OR within each set, therefore 297 queries are generated. (Table 2 indicates the keywords and the logic between them)

Keyword1	OL	Keyword2	OL	Keyword3
gender	AND	entrepreneur*	AND	financ*
or sex		or startup		or loan
or female		or venture		or bank
or wom?n				or debt
or femini*				or invest*
or discrimination				or venture capital
or bias*				or VC
or stereotype*				or angel
or equal*				or crowdfunding
				or Initial coin offering
				or ICO*

Table 2. Identified keywords and conjunction between them

We use the queries to interrogate the database Scopus as well as limiting the results within aforementioned criteria, i.e. published since 2007 and from the 21 selected journals, we end up with 388 unique documents.

### ***Inclusion of the papers***

By reading the selected documents, we decide which papers to include in the literature review. As discussed earlier, we are focusing on the sub-field in entrepreneurship, which related to gender gap and finance. Therefore, the included papers should be primarily committed in the external capital seeking of female entrepreneurs. In other words, papers will be excluded such as those studying gender differences in startup performance or expectations but not focusing on external financing (e.g. Powell and Eddleston, 2013; Robb and Watson, 2012; McGowan et al., 2012; Estrin and Mickiewicz, 2011); or those about determinants or motivations for both female and male entrepreneurs' entering entrepreneurship (e.g., Klyver et al., 2013; Cetindamar et al., 2012; Dawson and Henley, 2012). As a result, we ended up with 40 relevant published scientific articles that will be included in content analysis.

### ***Conceptual framework***

There are three dimensions in our conceptual framework. Firstly, we look at the forms of financing. By now, the main entrepreneurial financing channels are debt, business angel, venture capital, crowdfunding, and initial coin offering from the most traditional one to innovative ones. Secondly, following DIANA project, one of the most influential

projects worldwide studying in growth capital for women entrepreneurs, we also investigate through supply and demand-side by identifying the main focusing side in each article. Moreover, being inspired by the “5Ms” framework (Brush et al, 2009), another dimension we consider is macro/meso-level (e.g. environment of society and cultural norms as well as intermediate structures and institutions) and micro-level (i.e. “motherhood”, a metaphor representing the household and family context of female entrepreneurs). The “5Ms” explicitly considers the household and family context of female entrepreneurs, as well as macro/meso environment to mediate the “3Ms”, namely market, money and management, which are the three basic constructs for venture creation according to the current entrepreneurship theory.

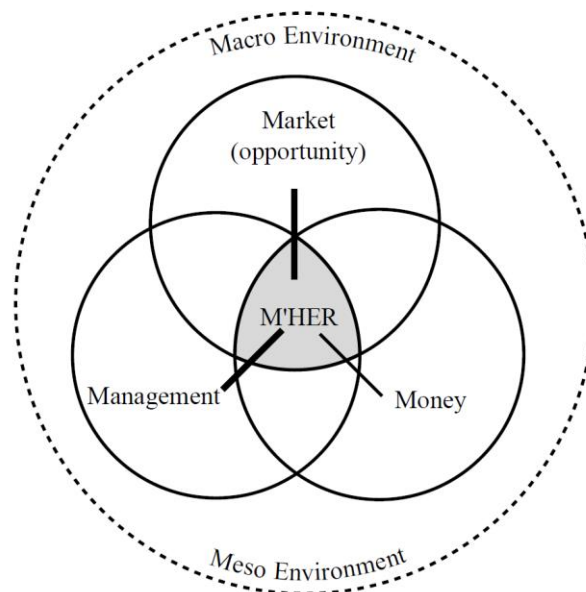


Figure 1. Women's entrepreneurship “5Ms” framework (Brush et al, 2009)

Therefore, the framework of our literature review is structured through the three dimensions of financing channels, supply-demand side and macro/meso-micro level to

have a systematic mapping and a holistic view. Besides, the geographical area investigated in each paper is indicated in the ISO 3166 country codes if it is for a single country, or regions' codes if specified, otherwise for multiple countries. Table 3 demonstrates the mapping of reviewed literature.

		Debt	Business angel	Venture capital	Crowdfunding
Supply	Macro /Meso-level	(BR)Agier & Szafarz, 2013 (multi) Drori, Manos, Santacreu-Vasut, Shenkar and Shoham, 2018 (US)Saparito, Elam & Brush, 2013	(US)Becker-Blease & Sohl, 2007 (US)Gicheva & Link, 2015 (UK)Harrison & Mason, 2007	(US)Gicheva & Link, 2015 (US)Gicheva & Link, 2013 (US, CA)Orser, Coleman & Li, 2019	(multi)Johnson, Stevenson & Letwin, 2018 (US)Malaga, Mamonov & Rosenblum, 2018 (SE)Mohammadi &Shafi, 2018
	Micro-level	(UK) Carter, Shaw, Lam & Wilson, 2007 (RU, UA) Iakovleva, Solesvik & Trifilova, 2013		(SE)Malmström, Johansson, &Wincent, 2017	
Demand	Macro /Meso-level	(multi)Bardasi, Sabarwal & Terrell, 2011 (FR)Brana, 2013 (MX) Bruhn & Love, 2011 (UK)Cowling, Marlow & Liu, 2019 (US) Eddleston, Ladge, Mitteness & Balachandra, 2016 (RU, UA) Iakovleva, Solesvik & Trifilova, 2013 (UK)Imarhiagbe, Saridakis & Mohammed, 2017 (ZW) Kairiza, Kiprono & Magadzire, 2017 (US)Mijid, 2017 (IT)Oggero, Rossi & Ughetto, 2019 (US)Saparito, Elam & Brush, 2013 (US)Wu & Chua, 2012 (CN)Xu, Zhan, James, Fannin & Yin, 2018	(US) Edelman, Donnelly, Manolova & Brush, 2018 (US)Poczter & Shapsis, 2018	(NO) Alsos & Ljunggren, 2017 (US) Gatewood, Brush, Carter, Greene & Hart., 2009	
		(US)Coleman, Robb, 2009 (UK)Kwong, Jones-Evans & Thompson, 2012 (UK)Roper & Scott, 2009 (UK) Roomi, Harrison & Beaumont-Kerridg, 2009. (UK)Sena, Scott & Roper, 2012 (AU) van Hulten A.,2012			
	Micro-level	(US) Eddleston, Ladge, Mitteness & Balachandra, 2016 (RU, UA) Iakovleva, Solesvik & Trifilova, 2013 (US)Mijid, 2017 (IT)Oggero, Rossi & Ughetto, 2019 (CN)Xu, Zhan, James, Fannin & Yin, 2018		(US) Balachandra, Briggs, Eddleston & Brush, 2019 (US) Gatewood, Brush, Carter, Greene & Hart., 2009 (US) Nelson, Maxfield & Kolb, 2009 (NO) Alsos & Ljunggren, 2017	

*Table 3. Mapping of included literature*

At the first glance of the mapping for the gender gap in entrepreneurial finance, a full coverage of channels is indicated except for Initial Coin Offering (ICO) probably due to its recent emergence deriving from the cryptocurrency and blockchain space. Besides, crowdfunding appears relatively less while debt remains the most studied as it is the

most traditional financing method all over the world. From a geographic view, we could notice the studies in this topic related to venture capital and business angels are highly concentrated in the developed countries, especially in the US and UK, while debts are more observed in developing countries/regions. Therefore, future research may correspond to the trend of increasing popularity in the innovative financing channels such as crowdfunding and ICO worldwide, or VC and business angels in the emerging economies such as China and India. Moreover, even the same research methods can be extended to different country/region or cross-country study could be conducted, as gender stereotypes associated with entrepreneurship vary across cultures.

By analyzing the results of included papers, we found conflicts even in the same level of a certain financing channel. For example, Cowling et al. (2019) argued that women who did apply for loans were more likely to be successful than their men counterparts after the 2008 global financial crisis, surprisingly, it is contrary to most of the previous findings in various countries and periods. Thus, the updated view is needed due to the economic, societal, cultural, and ideological dynamic, as well as the recent developments in business structures and financing channels. Especially, the demand side on the individual level is very few studied in the most of areas. Moreover, current findings are fragmented into different geographic area as well as several financing channels, thus a coherent understanding is absent in terms of the patterns of multiple channels at three levels in the same country or of the same channel and level across countries.

Moreover, research methods (quantitative, qualitative, non-empirical, and review);



theoretical perspectives (signaling theory, agency theory, feminist theory, etc.); the geographical sources, are identified and categorized as well.

## **Conclusion**

We confirm the fragmented and the evolutionary nature and the knowledge gaps in the gender gap of entrepreneurial finance, especially from the demand side at the micro level, namely, focusing on the entrepreneurs' individual and family perspectives. Moreover, apart from debt, research in other financing channels are highly concentrated in certain countries such as the US and UK. Then we propose a research agenda for future study regarding the theories, research questions and methodologies, etc.

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