

## Angel Investors And Gender Gap: A Systematic Literature Review\*

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\* Presented at the 41<sup>st</sup> IBIMA International Conference, 26-27 June 2023, Granada, Spain

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### Abstract

Angel investing is an important catalyst for national economic growth, and it is the gender gap that is trending upwards. However, there remain areas that are under-explored. Thus the aim of this paper is to map the current level of knowledge of gender research on the decision-making of angel investors and, based on empirical data, to evaluate the influence of gender on the decision-making of angel investors and identify areas to direct further research on female angels. For this purpose, the methodology of literature search is used, namely secondary analysis and subsequent synthesis of selected scientific articles from the Web of Science database. Scholarly sources are identified based on a combination of relevant keywords, including the use of logical abbreviations. The results show that the core themes of gender gap and angel investing include stereotypes, discrimination, social contact, aversion to risky activities, and fear of failure. In contrast, there is a lack of research in evaluating the impact of gender on the decision-making of angel investors in the conditions of the Czech start-up market, which explicitly implies the need to focus research interest in these areas.

**Keywords:** *Venture capital, business angels, angel capital, female, gender gap*

### Introduction

This paper is devoted to the gender gap of angel investors in the venture and development capital market by means of an analysis and subsequent synthesis of relevant scholarly sources. The aim is to map the current level of knowledge of gender research on the decision-making of angel investors and, based on empirical data, to evaluate the influence of gender on the decision-making of angel investors in the conditions of the Czech market of start-up projects. The contribution results in a table of individual determinants of the gender gap, among which the authors of scientific sources include stereotypes, discrimination, social contact, aversion to risky activities, fear of failure and others.

Mason and Harrison (2008) define Business Angels as “high net worth individuals, acting alone or in a formal or informal association, who invest their own money directly in a start-up business with no family connection and who usually takes an active part in the business after the investment has been made”.

EBAN (2020) mentions that businesses led by women tend to be more productive, faster growing and more innovative. According to the European Commission, improvements in gender equality could create 10.5 million jobs by 2025 and boost the EU economy by €1. It is therefore desirable to analyze the obstacles that prevent women from investing or entrepreneurship.

The aim of this paper is to evaluate the current level of knowledge in the field of "the influence of gender on the decision-making of angel investors" in the informal venture capital market. Based on the analysis and synthesis of relevant professional literature through literature review and citation analysis, the research question will be answered:

Q (1): *What are the determinants associated with the angel investor gender gap in the venture and development capital market?*

## **Theoretical background**

One of the important sources of funding for start-up projects is risk and development capital. These start-ups have difficult access to financial resources due to information asymmetry. Therefore, they often use the financing options offered by the risk and development capital market in general, or the informal risk and development capital market (Glücksman, 2020). Informal investors are sometimes referred to as the 4Fs (Bygrave and Quill, 2007), which stands for founders, family, friends and foolhardy strangers, also known as Business Angels.

Harrison and Mason (1992) state that the typical business angel is mostly men who are financially very well off and invest a relatively large amount of their personal wealth, most often in young technology-oriented companies. They can operate independently or through ad-hoc networks (BAs) of investors and generally provide coaching and advisory functions to investors in addition to (seed and growth) capital (Mason 2019; Block et al. 2019; Grilli. 2019). The role of gender in access to corporate finance has been the subject of extensive research, debate and political interest in recent years. Romani et al. (2012) mention that the relative lack of research on women's informal investment contrasts with the fact that women are gaining more and more space in the labor market even in the establishment of businesses with strong growth potential. Although the percentage of women in the segment of angel investors is still very low (Mason, Harrison 1994; Becker-Blease, Sohl 2007; Harrison, Mason 2007). However, the progression of the phenomenon of female investors occurs not only in developed countries (Harrison, Mason 2007; Sohl 2009), but also in developing economies.

Sohl and Hill (2007) analyze data obtained from a questionnaire survey of 11 angel organizations in the US market. The study took place in 2002 and 2003 and the sample included a total of 528 female angel investors. The authors concluded that female angel investment groups are similar to their male counterparts, but there are significant differences in some aspects, such as the fact that female angel groups attract more women-owned firms than male angel groups. This is confirmed by Hohl et al. (2021) who examined 895 presentations from the American TV show Shark Tank from 2009-2019. They found that, thanks to a higher proportion of female business angels, the success of female entrepreneurs increases because they more easily establish personal relationships with female entrepreneurs of the same sex. Harrison and Mason (2007) report that there is a slight gender difference in how angel investors develop and use social capital, such as lower BA connections among women compared to men. The authors Daou et al. (2022) examined a sample of 23 female LWAF investors in Lebanon, representing 60.9% of all female angel investors in the area. The aim of the article was to better understand the motivation of female-to-female angel funds in an area traditionally dominated by men. The results of Romani et al. (2012) who examined informal investment from a gender perspective on a sample of 613 informal investors in Chile in 2007-2008. The authors found significant differences between men and women in the status of BAs, namely in some socio-demographic variables such as education and work status, perception of good opportunities and fear of failure. In addition, women invest smaller amounts and expect lower returns than men, while also investing more in close family.

## **Methodology**

In the first phase, the research project will be focused on summarizing the current level of knowledge in the area of "the influence of gender on the decision-making of angel investors". The Web of Science (hereinafter referred to as WoS) and Scopus databases will serve as the source of secondary data, where relevant professional sources will be selected with the help of selected keywords and the use of the Boolean logical operators "AND" and "OR". These will then be subjected to bibliometric and content analysis. The research of secondary sources will be based on the approach of the authors Harrison and Mason (2007), Sohl and Hill (2007), Romani et al. (2012), Hohl et al. (2021) and Daou et al. (2022) who offer a relevant combination of keywords and connections and at the same time show a high number of citation responses in relevant scientific journals. Part of the project solution will also be the creation of a methodology for the collection of primary data in the conditions of the domestic risk and development capital market.

**Table 1: Finding professional resources**

Database	Logical operators	Classification	Keywords
Web of Science, Scopus	„AND“ a „OR“	Impact factor časopisu	Women business angels, Angel capital, Women angels, angel investors, business angel, gender, Angel investment, Angel networks, Woman investors, female angels

Source: Own elaboration

Based on the mentioned techniques, the main research question will be answered:

Q (1): *What are the determinants associated with the angel investor gender gap in the venture and development capital market?*

## Results

An analysis of the professional literature was carried out using a literature search and then a subsequent synthesis of the key determinants that mark a significant mark in the area of the gender gap in the venture and development capital market. The factors marked in Tab.2 show the determinants that were most repeated as problem gaps in connection with informal women investors of the business angel type. Eliminating these factors would lead to an expansion of economic activities and higher economic growth, which is confirmed by Harrison et al. (2020) and EBAN (2020). The following table shows that the most discussed factor that appears is stereotype threat. Harrison et al. (2020), Pennington et al. (2016), Schmader et al. (2008) describe this factor on two levels, cultural or masculinized and structural (competition, numerical minority, variance of skills and abilities). Stereotype threat implications of the angel investment market as a competitive environment will lead to lower levels of female participation in the market compared to men and will be positively associated with membership in female-only angel investment networks. Another factor is homophily on the part of entrepreneurs in the angel market, that is, entrepreneurs show a strong preference to seek angel funding from angel investors of the same gender (Becker-Blease and Sohl 2007; Harrison and Mason, 2007). Other determinants that appeared most frequently through the analysis of professional articles and subsequent synthesis are the avoidance of risky activities (Harrison et al., 2020), education and work status, perception of good opportunities, fear of failure (Romani et al., 2012) and experience (Harrison et al., 2020).

**Table 2: Determinants of the gender gap**

Determinants	Article	Authors	year of publication	Research objective	Data collection methods	Data processing methods
Stereotypes/ Discrimination	Women on the edge of a breakthrough? A stereotype threat theory of women's angel investing	Harrison et al.	2020	Map the profile differences of male and female angel investors	questionnaire	quantitative research, statistical analysis
	Does gender matter? Women business angels and the supply of entrepreneurial finance.	Harrison a Mason	2007	Map the role of women in the Bas market	questionnaire	quantitative research, descriptive analysis and statistical analysis
	Twenty Years of Stereotype Threat Research: A Review of Psychological Mediators	Pennington et al.	2016	To identify and critically examine proposed mediators of	Bibliographic search	Quantitative research, statistical analysis

				stereotype threat		
Same-sex social contact	Does gender matter? Women business angels and the supply of entrepreneurial finance.	Harrison a Mason	2007	Map the role of women in the Bas market	questionnaire	quantitative research, descriptive analysis and statistical analysis
	Do women-owned businesses have equal access to angel capital?	Becker-Blease a Sohl	2007	Explore equity of women's access to angel capital	questionnaire	Quantitative research, statistical analysis
Avoiding risky activities	Women on the edge of a breakthrough? A stereotype threat theory of women's angel investing	Harrison et al.	2020	Map the profile differences of male and female angel investors	questionnaire	Quantitative research, statistical analysis
Education and employment status	Informal investors in Chile: an exploratory study from a gender perspective	Romaní et al.	2012	Analysis of gender differences in proportions and means	GEM survey	Statistical tests chi-square, t-test
Perception of good opportunities	Informal investors in Chile: an exploratory study from a gender perspective	Romaní et al.	2012	Analysis of gender differences in proportions and means	GEM survey	Statistical tests chi-square, t-test
Fear of failure	Informal investors in Chile: an exploratory study from a gender perspective	Romaní et al.	2012	Analysis of gender differences in proportions and means	GEM survey	Statistical tests chi-square, t-test
Experience	Women on the edge of a breakthrough? A stereotype threat theory of women's angel investing	Harrison et al.	2020	Map the profile differences of male and female angel investors	questionnaire	Quantitative research, statistical analysis

Source: Own elaboration

## Discussion

Harrison et al (2020), Harrison and Mason (2007) and Pennington et al (2016) identify stereotyping as a major issue in relation to the gender gap. In line with liberal feminist theory, which suggests that women are disadvantaged compared to men either by overt discrimination or by systematic factors that prevent their access to key resources (Greer and Greene, 2003).

Gneezy et al. (2003) state that women in a competitive environment will perform differently and less well in mixed or opposite gender groups. This translates into a business context and suggests that where gender differences are

observed, it may not be due to differences in abilities and preferences or discrimination, but rather to Same-sex social contact. This fact is also confirmed by Harrison and Mason (2007) and Becker-Blease and Sohl (2007).

This issue is largely unexplored, as confirmed by the WoS and Scopus databases. With the help of selected keywords, in particular "gender gap" and "business angel", and the use of the Boolean logical operator "AND", a total of only 13 relevant professional sources dealing directly with this problem were selected.

## Conclusion

Gender differences, which have been identified from the analysis of professional literature using the literature review and the subsequent synthesis of determinants in this paper, are key issues for the development of the economy in the context of financing on the venture capital market. The results of a Boston Consulting Group (2018) study show that female entrepreneurs generate more income than their male counterparts, despite receiving less financial support. The aim of this paper was to provide a literature review of the BA's women's venture capital financing environment and to map the current level of research knowledge on the influence of gender on the decision-making of angel investors. Determinants that have a negative effect on financing on the venture capital market have been identified.

Determinants that influence the gender gap were identified by means of an analysis of scholarly articles and a subsequent synthesis. Among the mentioned determinants are stereotypes, discrimination, social contact more with the same sex, avoidance of risky activities, education and work commitment, especially in areas where the male gender dominates the market, then the perception of good opportunities, fear of failure and experience. All the mentioned factors are identified all over the world, therefore in different economies. Literature research and citation analysis in specific market areas could be the subject of further investigation.

Within the set goals of this contribution, it was also to evaluate, based on empirical data, the influence of gender on the decision-making of angel investors in the conditions of the Czech market of start-up projects. Research to the extent of this goal has not yet been carried out, and the future possibility of analyzing the Czech market in the context of gender BA's is related to this.

## Acknowledgement

The article was supported by the junior project "*Economic and managerial impacts of development strategies in the conditions of small and medium-sized enterprises*" (FP-J-23-8255), which is part of specific academic research projects at Brno University of Technology.

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