Entrepreneurship Education and Gender in Europe

A Systematic Literature Review of Studies in Higher Education

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Abstract Entrepreneurship is considered an important factor for economic growth. And although female entrepreneurs offer outstanding socio-economic potential, there are still more men working as entrepreneurs than women. Support for female entrepreneurs is improving in Europe but compared to the United States there is still progress to be made. Major differences can also be identified between European countries. Although one way to foster entrepreneurship is via entrepreneurship education, reviews about entrepreneurship education in combination with gender studies are rare. This paper performs a systematic literature review, presenting the state of entrepreneurship education and gender within the last decade, and generating a European map of research. European samples are descriptively analyzed, and six different issues are identified. Implications for practitioners and policymakers are provided, and the article concludes with insights revealing where more research is needed and how it could be performed in Europe.

1 Introduction and Reasoning Behind the Paper

Entrepreneurs are a source of prosperity and economic growth (European Commission 2013), so Europe needs as many of them as possible. A substantial difference exists between the amount of male and female entrepreneurs. In 2013, only 37% of all worldwide firms were run by a woman (VanderBrug 2013). This rate is even lower for Europe: although 52% of the population is female, only 34.4% of European entrepreneurs are women. Moreover, the annual firm start-up rate for males is 1.35%, while only 1.01% of females start an own company (Caliendo et al. 2014).

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More women entrepreneurs would have a positive impact on economic growth, and a greater amount of female entrepreneurs would achieve a larger amount of entrepreneurs in general. More specifically, women entrepreneurs are the source of relatively more job creation. Indeed, studies by the European Parliament prove that women create relatively more small- and medium-sized enterprises (SMEs) than men; 85% of net new jobs in the EU are created by these SMEs. In other words, more women entrepreneurs would generate more SMEs, which would create more new jobs as a result. Women entrepreneurs also display higher levels of innovation than their male counterparts (European Commission 2014). If as many women as men participated in the labor force, it would contribute one trillion dollars to GDP in emerging economies (VanderBrug 2013). All in all, although the vast socio-economic potential of women's entrepreneurship is known (Hughes et al. 2012), this difference in the rate between male and female entrepreneurs (i.e. this gender gap) is still very significant.

An increasing number of studies have as a result observed what the reasons could be for this gender gap and what can be done to reduce it (Ahl 2006). Although there are in fact fewer women entrepreneurs, *entrepreneurial education* might offer a possible solution to stimulate entrepreneurial aptitude for men and women alike (Cheraghi and Schøtt 2015). According to the European Commission, entrepreneurship can be taught and learned. With this in mind, one of the missions of the European Union is to support programs that increase entrepreneurial intention (EI) and foster women entrepreneurship via educational and business networking platforms (European Commission 2013).

The Female Entrepreneurship Index (FEI) is a score measured by the individual and institutional efforts in one country to promote female start-ups. Besides the fact that this rate is much higher for the United States (82.9) and Australia (74.8) in comparison to the leading European country (the United Kingdom at 70.6), the *dissimilarity within Europe* itself is even more pronounced. Several Scandinavian and central European countries have FEI scores of around 65, the eastern part (Czech Republic, Poland, Estonia) has scores of approximately 55, while the more southern countries (Croatia, Portugal, Romania) only have scores of around 50 (Terjesen and Lloyd 2015). These noticeable European differences raise questions about how the female entrepreneurial ecosystem can be fostered by entrepreneurship education and what kind of research has been performed so far. Since reviews about entrepreneurship education in combination with gender studies are rare, the purpose of this paper is to provide the state of affairs regarding EE and gender between 2006 and 2016 from a European perspective.

Two main research questions are posed. **What kind of research is done on EE and gender on the European continent, and how is it performed? What are the main general and gender-related issues and key findings here?** To answer these questions, a brief overview of global and European research will first be discussed,

followed by a descriptive analysis of the European[1] samples in order to find similar and different characteristics between the papers (study design, methods, sample characteristics, kind of EE). This paper will furthermore give a thematic overview with key findings in general and gender in particular. Based on these, implications for educators and policymakers will be discussed to show how entrepreneurial programs with a focus on female entrepreneurs can be expanded upon and even improved. Finally, the article will show which research gaps need more attention.

2 Methodology

This paper is a *literature review* with a systematic approach in accordance with the work of Pickering and Byrne (2014). In comparison to the use of narrative reviews, this method follows a series of clear steps to lower the possible subjectivity or potential biases of research. Furthermore, intercoder reliability is added, in line with the work by Lombard et al. (2002). As in previous research, a combination of deductive and inductive coding approaches is used for the content analysis (Epstein and Martin 2005).

To capture as many possible articles on the research topic, a systematic literature search was performed among international peer-reviewed articles (in English) in the following databases: Web of Science, Science Direct, Business Source Premier, and ABI/Inform. The first three databases are commonly used as databases for this research. ABI/Inform is recommended by Frank and Hatak (2014) because it provides relevant articles in entrepreneurship research. Keywords used here were (1) 'entrepreneur* education' + 'gender', (2) 'entrepreneur* education' + 'women' or 'woman', (3) 'entrepreneur* education' + 'fem*', (4) 'entrepreneur* education' + 'higher education'.[2] The articles were screened for the given keywords in the title, abstract and full text (references included). After running this search in these four databases, 6171 total articles were found. Duplicates were first reduced automatically by Endnote, and by hand in a second run to exclude unseen duplicates from the first elimination. After excluding all duplicates, 2104 articles remained. An overview of the collection and exclusion rounds can be seen in Table 1.

Each article was screened in two rounds to exclude or include them from/into the final sample. A procedure with a codebook was composed, providing the strategy regarding how to include/exclude articles in the two rounds. Only the titles and abstracts were analyzed in a first round. In this phase the main question was whether the article dealt with entrepreneurship education in higher education or not.

[1] We consider Europe as the entire continent, including all Scandinavian countries, Russia and the UK.

[2] 'Entrepreneur* education' stands for 'entrepreneurship education' or 'entrepreneurial education', 'fem*' stands for 'female' or 'feminine'.

Table 1 Overview of the collection and exclusion rounds

Sample	Collection/exclusion method	Amount of articles
Gross sample	Collecting all articles	6171
Net sample 1	Exclusion of duplicates	2104
Net sample 2	Does the article deal with EE in HE?	532
Net sample 3	Does the article deal with gender?	87

Source: Own table

The subjectivity of coding (including or excluding an article) was tested under *intercoder reliability* (Lombard et al. 2002). The main researcher first coded all of the articles. In addition, three other researchers (coders 1, 2 and 3) each independently coded one-third of the total sample, following the instructions in the codebook. The three coders were first independently trained: 5% of the articles for each coder were analysed together with the main researcher. Discussions about including or excluding an article were done in this phase as a means to ensure that every coder knew how the expected criteria were to be measured. In a second phase, every researcher (coders 1, 2 and 3) coded the articles independently. Krippendorff's α was calculated: the observed α gave scores of 0.916, 0.918 and 0.851 respectively for every coder, each time compared to the main researcher. Comparing this outcome with the required minimum of $\alpha = 0.800$ (Krippendorff 2012) indicated that the level of acceptance had been reached; the data possessed a fair degree of reliability.

Every article where there were still doubts following the comparison was included or excluded based on the decision made between the main researcher and the respective coder. 532 peer-reviewed articles were available following the first exclusion round. In a second exclusion round, all the articles were studied in-depth by the main researcher regarding whether the article dealt with issues like gender, females or women. Only 87 papers remained in the list following this second exclusion because in all the other articles, these terms only appeared in their references.

These 87 articles were integrated into a database that collected and manually examined 54 characteristics of every paper. Since the field of entrepreneurship education under gender aspects is heterogeneous and still under-researched, a combination of *deductive and inductive coding* approaches was applied in this content analysis (Epstein and Martin 2005). After setting up the different codes, all the articles were integrated and coded into the database. After all of the articles were examined, all of the codes were revised, and the references of the selected articles were screened to investigate whether there were other articles (cross-references) which were not seen during the previous phases. With the exception of a few articles in other languages and articles which did not originate from 2006 to 2016, no others were found except non-peer-reviewed articles.

3 Findings

This section consists of two parts. The worldwide sample is briefly discussed in the first part, followed by a descriptive analysis with a focus on the papers conducting research on European students. Here, all articles are categorized according to the respective paper's method (quantitative, qualitative, mixed or conceptual). For every categorization, the study design, the characteristics of the samples, and the stimulus (what kind of EE?) are discussed. In the second part, all European-based papers are categorized according to their topics, discussing the key findings in general and the key findings regarding gender for each of them. A general overview of the articles with their key findings and descriptive analyses is clustered according to topic and can be found in the table in Appendix.

3.1 Descriptive Analysis of the Sample with a Focus on the European Articles

The first research question concerns what kind of research is involved in the study, as well as how it is performed worldwide and, in greater detail, for the European samples. This systematic literature review started with a very broad sample, with an initial selection of 2104 articles. 87 articles from around the world were categorized as performing research on gender and EE, of which 31 articles used gender only as a control variable. While the total amount here is very poor, the last 10 years have in fact seen a positive evolution, as shown in Table 2. These articles are found in 42 different journals with disciplines including education, business, entrepreneurship, gender, social sciences, management and technology. The journals having the most articles are *Education and Training* (14), *Journal of Enterprising Culture* (6), *International Entrepreneurship and Management Journal* (5) and *International Journal of Gender and Entrepreneurship* (5).

In the 87 articles about gender and EE, 31 articles are based on studies with samples of European students from one country, while 12 compare different European samples, or one sample from Europe and one sample from another continent. 40 studies deal with non-European samples, and 4 studies are meta-regressions based on worldwide samples. The two first categories with a total of 43 articles based on (at least) one European sample are of particular interest for this study. The descriptive analysis will now focus in greater detail on the methods used, the study design, the sample characteristics, and the stimulus (what kind of EE was applied?) of these 43 European articles. Appendix provides the overview of the different papers which will be discussed in further detail. Table 3 gives an overview of the categorization of the European samples according to their method.

Of these 43 European papers, four articles are *conceptual*, based on literature reviews of previous research. The study designs of these papers vary. One article evaluates entrepreneurship programs in Germany using other literature, another

Table 2 Worldwide overview of the amount of articles about EE and gender during the last 10 years (only January–June for the year 2016)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total
All articles	1	1	2	6	11	7	12	13	13	14	7	87
Gender as main focus	1	1	2	3	8	6	9	6	11	6	3	56
Gender as control variable	0	0	0	3	3	1	3	7	2	8	4	31

The research sample is from January 2006–June 2016, so 2016 is only partially integrated into the sample. This explains the decline
Source: Own table

Table 3 Categorization of the European samples according to their method

Conceptual	4
Qualitative	5
Mixed method	1
Quantitative	33
Regression	12
SEM	3
ANOVA	4
Pre-/post-t-tests	4
Chi-squared	3
Descriptive analysis	3
Other methods	4
Total European articles	43

Source: Own table

investigates if and how veterinary students can benefit from EE, a third focuses on women entrepreneurship in university education, and the last one conceptualizes the idea of testing entrepreneurial self-efficacy in relation to personality, gender and propensity to risk.

In addition, five articles are purely *qualitative*. One of them is based on semi-structured interviews with 122 students to find out how entrepreneurial courses should be organized. The other four use case studies composed of documents or diaries of students and educators, or using an evaluation of a study day for educators. These four articles deal with the following topics: EE and female entrepreneurship, the impact of EE on students' competencies and propensity, and the beliefs of students about the characteristics of entrepreneurs.

Only one article of the 43 uses a *mixed method*, with a regression analysis combining in-depth interviews to focus on the organization of EE programs in universities with 95 respondents from four different countries.

The majority (33) of the European papers base their findings on a quantitative analysis. 12 of these 33 quantitative papers use different regression techniques (sometimes combined with other techniques). Eight of the regression analyses perform studies on the entrepreneurial intention (EI) of students. Several studies directly use EI as an independent variable, while others investigate the three antecedents of EI (perceived behavior control, subjective norms, and attitude towards behavior) of the theory of planned behavior. The other five regression analyses test the need for achievement, the ambition of students, their perceived learning outcome, their entrepreneurial aptitude, or their competencies. Furthermore, in eight of the regression papers, students attended (obligatory or voluntary) entrepreneurship lectures or workshops, while in three others the samples were mixed, with students both attending or not attending EE courses. Two also worked with samples where no business students were involved. Here, the articles measured the beliefs of students concerning entrepreneurship courses.

Along with the papers using regression analyses, three papers apply structural equation modeling to perform tests on EI or its antecedents. Two of these papers

look at how EI changes over several years, while the other one measures EI in its interaction with culture and gender. In one of the articles, the stimulus (what kind of EE is offered?) is not specified, while in the other two papers students from different fields of study were examined.

In addition, four papers use ANOVAs to focus on the beliefs and attitudes of students about becoming an entrepreneur (1), EE courses (2), or their entrepreneurial intention (1). Here the stimulus is not available for three articles, while in one of the articles EE courses are optionally offered.

Four other papers use different t-tests in a pre- and post-test design to study the change in self-efficacy or EI, the change in entrepreneurial knowledge and skills, or the attitude towards an entrepreneurial course. The kind of EE reviewed here varies between one entrepreneurial course to different entrepreneurial programs, of which some are residential and others are not.

Three other papers use chi-squared tests to search for differences in attitudes towards entrepreneurship or entrepreneurial intentions among different student groups, with different control variables such as taking courses on entrepreneurship education and gender or not.

Three other articles work only with a descriptive analysis to see what the proportion of participants is in EE courses, or the impact EE programs have on entrepreneurial aptitude. The remaining four articles use other methods such as rank tests, trend analyses, data mining or multi-level techniques to test beliefs or attitudes of students towards EE courses or EI in general.

Although the samples in the quantitative analyses differ greatly, in most of the papers, the amount of students tested is between 100 and 500 elements. Most studies consist of an equal amount of male and female students.

3.2 Thematic Analysis of the European Samples

The second research question concerns the main issues and their general and gender-related key findings for every topic. Based on the deductive and inductive coding, six research topics were identified: EE and female entrepreneurship, the impact of EE on students' competencies and/or entrepreneurial propensity, the study of EI and/or its antecedents in relation to EE, the beliefs of students about the characteristics of entrepreneurs, the beliefs and attitudes of students about entrepreneurial courses, and the beliefs and attitudes of students about entrepreneurship (starting up). Table 4 gives an overview.

In the following sections, all articles per topic will be described with a special focus on the general conclusion, and with a specific look at gender. Implications for educators, policymakers and further research are briefly mentioned to show the direct link to this paper's study design. The main implications will be analyzed in detail during the discussion. The papers in Appendix are placed in chronological order when used for the first time in this section, making the comparative analysis easier to follow.

Table 4 Overview of the topics

Topic	#
EE and female entrepreneurship	4
Impact of EE on students' competencies and/or entrepreneurial propensity	8
EI and/or its antecedents in relation to EE	18
Beliefs of students about characteristics of entrepreneurs	3
Beliefs and attitudes of students about entrepreneurial courses	4
Beliefs and attitudes of students towards entrepreneurship (starting up)	6
Total	43

Source: Own table

The research topics of *EE and female entrepreneurship* cover four articles. Henry and Treanor (2010) performed a literature review to conclude that EE could help women in veterinary medical fields overcome gender-specific barriers. Moreover, during a discussion workshop, educators concluded that EE courses in non-business disciplines will become increasingly important in the future, especially in sectors where more males are currently self-employed (Treanor 2012). Tegtmeier and Mitra (2015) performed a literature review on women's entrepreneurship research with a focus on university education. They state that more research is needed on the topic. Rae et al. (2012) provide a descriptive overview of enterprise education in the UK, surveying 116 higher educational institutions (HEIs). They state that there is a significantly higher proportion of male students compared to females in EE programs, meaning fewer women become entrepreneurs. Although entrepreneurship might be seen as a conventionally "male" interest, policymakers and HEIs should promote entrepreneurship as a desirable cultural norm in general as well as in courses.

The *impact of EE courses on students' competencies or entrepreneurial propensity* comprises eight articles. Competencies or propensity involve intended knowledge, skills, aptitudes and abilities to start up. Petridou and Sarri (2011) found a positive impact of EE on the *knowledge, skills and entrepreneurial aptitude* of students. Here, a greater portion of men are interested in entrepreneurship than women. Since female entrepreneurs face different obstacles than males, females should be encouraged to follow an entrepreneurship program. In the study by Vilcov and Dimitrescu (2015), 171 students appeared to obtain more competencies via entrepreneurship education, while gender differences manifested themselves only later in their career choices.

Radovic-Markovic et al. (2012) studied how *entrepreneurial abilities* can be stimulated via EE; their study had a specific focus on women. Using qualitative in-depth interviews and a quantitative approach with 95 respondents, they noticed that entrepreneurial abilities can be best fostered when multi-dimensional relationships are established between the course concepts and entrepreneurship experiences. Gender-based EE should facilitate a more "women-centered" approach with an adaptation to everyone's individual needs. Here, more freedom in learning and reducing existing stereotypes is important to promote the self-confidence and

individual development of the students. Jones et al. (2008) found that males initially showed more *commitment* towards a future entrepreneurial career, although both sexes displayed a very high rate of interest following the course. The authors concluded that enterprise education can have a positive impact on entrepreneurial career aspiration. More studies should be taken into account in a longitudinal setting to investigate whether these results are transferable to other countries. Kriz and Auchter (2016) found that educational simulation games increase the entrepreneurial knowledge and skills of students. Gender-based, extended debriefing appears to promote the entrepreneurial motivation of women. Because of this, the authors suggest organizing different game formats and programs for specific target groups. Following a thematic analysis of surveys on German-speaking students, Kailer (2009) furthermore infers that more variation is needed in EE when it is applied to specified target groups. Based on other studies, he states that female students express a special need for individual coaching and networking events where experienced and female entrepreneurs could serve as role models. Tiago et al. (2015) deduced that attending an EE course was the main determinant of the differences between students' propensity to start a company, while age and gender showed no significant results. Kurczewska et al. (2014) performed a content and thematic analysis comparing Finnish with Egyptian students. The enthusiasm seen by Finnish females is less than with their Egyptian counterparts, an outcome that is probably the result of their national culture.

The third research topic, the *study of EI and/or antecedents in relation with EE* covers eighteen articles. Only the articles which measured entrepreneurial intention directly or via its antecedents are discussed in this section (articles measuring other variables were discussed as part of the second research topic). This means that these studies are based on the theory of planned behavior or the entrepreneurial event model. Two different subcategories can be distinguished here: differences in EI among gender, and the effects of EE on EI.

A number of papers discuss the *differences among gender* concerning the level of EI. Kurczewska and Bialek (2014) found via paired t-tests in their survey of 232 bachelors and masters students at a faculty of economics and sociology that females show less EI, although entrepreneurial self-efficacy (ESE) is not the key driver. This means that educators should focus not only on ESE but look for other ways to increase EI as well. Yordanova and Tarrazon (2010) tested the moderating effects of gender on EI and its antecedents via binary logistic regression in a cross-sectional design. Women showed less EI here as well. Other papers with regression analyses arrived at the same result (Vukovic et al. 2015; Karhunen and Ledyaeva 2010). Joensuu et al. (2013) found via structural equation modeling that females have fewer initial entrepreneurial intentions. These results are in line with research that uses other methods (Shneor et al. 2013; Maresch et al. 2016; Schwarz et al. 2009; Teixeira et al. 2012). However, Dabic et al. (2012) found that men are more willing to start a company, although with EI itself, the differences are less distinctive. All in all, most of the articles conclude that females show initially lower EI scores than males. Most of these papers suggest that educators and policymakers should create effective EE programs that are customized to deal with specific gender needs.

A traditional approach of an entrepreneurial course should be supplemented by guest lecturers, including female entrepreneurs, to more intensively promote female students who have a lower initial level of EI.

When searching for the *effects of EE courses on the EI* of students, the conclusions are more diverse. In a 3-year longitudinal study, Joensuu et al. (2013) found that the EI of students decreased over time and education. This declining EI was even stronger for females. This conclusion is in line with the paper by Varamäki et al. (2015) where a path analysis measured active-based and lecture-based courses, revealing a decrease in female EI. Packham et al. (2010) also found that a single course where students create a business model has less effect on the entrepreneurial attitudes of females compared to males.

Several papers did in fact find that EE courses positively influence EI, while the differences in gender are not obvious (Küttim et al. 2014; Turker and Senem Sonmez 2009). Vukovic et al. (2015) observed that EE has a positive impact on students' attitudes and knowledge. Here EE is less successful in motivating students to actually start work as an entrepreneur. Shneor and Jenssen (2014) noticed that entrepreneurial experience, social norms, self-efficacy and age influence both genders, while the direct effect of EE and risk perceptions are only significant for female students. Maresch et al. (2016) also found that EE has a positive effect on EI in their cross-sectional study of 4548 Austrian students (64% female) taken from the 2011 GUESS project. Agapitou et al. (2010) found that initial differences in EI between male and female students who participated in EE courses diminishes over time.

All in all, measuring the effects of EE on EI shows a more diverse outcome. Researchers nevertheless agree that different types of and customized EE programs can help students more effectively. Here, a multidimensional approach can be effective in raising entrepreneurial intentions.

The fourth research topic *beliefs or attitudes of students about characteristics of entrepreneurs* comprises three articles which deal with the research questions of who the perfect entrepreneur is and what kinds of characteristics this person should have. Hytti and Heinonen (2013) analyzed the diaries of students to investigate the entrepreneurial identities that are acceptable and attractive to them. Male participants could identify themselves more with the *heroic* identity, while females relied on a *humane* identity of running a low-tech firm with modest business goals. With this in mind, EE courses should not only foresee business knowledge and skills but also pay attention to the role models entrepreneurs could use to effectively operate their business. The two other articles (Jones 2014, 2015) discuss the differences in EE from a *feministic discursive approach*. Jones suggests that entrepreneurship is more closely related to the traits of a masculine world. Gender is discussed as socially constructed, and is not based on the difference between being male or female, but by masculine and feminine characteristics. Analyzing diaries and interviewing students, she concludes that females believe that becoming an entrepreneur requires certain "masculinized" traits, i.e. they should perceive male entrepreneurship as natural and unquestionable. With the other five topics, "gender" is used as a synonym for "sex," while in the articles within this topic, gender is more based on the masculine and feminine characteristics of individuals. This gives rise to the question of what

research could be performed when the effect of EE is measured on EI, not only with testing for the variable "sex" (being male or female) but also for the socially constructed "gender" (having masculine or feminine characteristics).

The fifth research topic covers the *beliefs or attitudes of students concerning entrepreneurship education*. Beynon et al. (2014) noticed that students will follow entrepreneurship programs when they want to obtain more knowledge or gain further skills. Females here sought more advice before starting the course. In terms of content, female students should be provided with a customized learning program (which could be gender-specific). Petridou et al. (2009) concluded via descriptive analysis that there is a higher enrollment of males than females in entrepreneurship courses. Female students are also more interested in acquiring knowledge, developing skills, and networking with local businesses than male students; here they state that a customized program is needed for these kinds of activities. Hytti et al. (2010) analyzed that educators should not take for granted that students are simply motivated to follow entrepreneurship courses, but that a differentiation in motivation can influence the learning outcomes of students. Different course formats could be the solution: team-based learning could have a positive effect where every individual can play their own role. This last approach is in line with the research of Hoogendoorn et al. (2013) who found that teams with an equal gender mix perform better in terms of sales and profits than male-dominated teams. The authors state that this is because men and women can complement each other's skills and knowledge.

The last research topic deals with the *beliefs or attitudes of students about starting up an entrepreneurial career*. Jones et al. (2011) performed a qualitative semi-structured data collection method of 122 Polish students who were taking an entrepreneurial course. They found that male and female students have different perceptions and attitudes towards an entrepreneurial career. Boissin et al. (2011) noted that the entrepreneurial aptitude of women is lower, and is related to risk aversion. However, female students are more positively stimulated than males when they meet entrepreneurial role models. Moreover, in a European comparison, Bergmann et al. (2016) concluded that significantly more male students become entrepreneurs compared to female students, which is in line with other papers (Staniewski and Szopinski 2015; Oehler et al. 2015). Still, they state that initiatives and programs that aim to encourage students to become entrepreneurs make a difference, which is also seen in other research (Castiglione et al. 2013). Again, interesting role models and customized EE programs could encourage female students to start companies and lower their risk aversion.

4 Discussion

This first aim of this literature review was to give an *overview of the recent state* of gender and EE in Europe. Recent years have seen a modest increase in work performed here, although the total amount of research remains scarce. In a first phase, 2104 articles were selected for further analysis. Only 43 articles address this

topic with European samples. This small amount of relevant articles is in line with former research about the effects of EE (Rideout and Gray 2013) and with former research about women entrepreneurship and university education (Tegtmeier and Mitra 2015). Although some papers are conceptual or qualitative, the majority of the papers selected applied a quantitative method. This implies that more research is generally needed, and from a methodological point of view, more qualitative research or mixed methods would fill the current research gap. And from a quantitative perspective, additional research with more samples is needed to discover the similarities and differences between EE and gender in every European country. Path analyses and structural equation modeling in particular should be performed more to measure/identify the structural relationships between different variables that could strengthen the entrepreneurial intentions and aptitudes of women.

The second goal of this paper was to identify the general and gender-specific *main topics and key findings* to find implications for practitioners and policy. The first three topics discuss the impact of EE on women entrepreneurship, entrepreneurial competencies, and entrepreneurial intentions. The other three topics discuss the beliefs and attitudes of students towards the characteristics of entrepreneurs, entrepreneurial courses, and an entrepreneurial career. Analyzing the key findings provides interesting insights concerning the difference of entrepreneurial intentions or aptitude between men and women, and what kind of role entrepreneurship education can play to foster women entrepreneurs.

An overall conclusion is that women initially show fewer entrepreneurial intentions than men, have less interest in an entrepreneurial career compared to males, and that there are also fewer females pursuing entrepreneurial paths. These findings are in line with the current situation in Europe where fewer women have an entrepreneurial career compared to men (European Commission 2014). Since women are less present in the entrepreneurial world, the next question is whether entrepreneurship education can foster women entrepreneurship. If so, how should this specifically be done?

The conclusions of the analyzed papers regarding the capacity of entrepreneurship education to increase the entrepreneurial aptitude of women and the amount of female entrepreneurs in general are very diverse. In some studies EE positively influences the entrepreneurial intention of both genders, sometimes only more explicitly for males, sometimes more explicitly for females. The effect and duration can also vary: EI can be fostered by EE for a shorter or longer period, or the positive impact is only temporary, followed by a sharp decrease in self-efficacy after 6 months. In other studies, EE directly caused a decline in EI, especially for women.

All in all, there is no clear conclusion whether EE has a positive impact on entrepreneurial intentions or not. Because of this, many articles question whether entrepreneurship education is being offered correctly. EE could indeed stimulate (female) students to become self-employed if it were offered differently. The *implications for educators* here are twofold. Courses could be created in a more customized fashion, and also be more in tune with women/gender and their specific requirements.

A number of suggestions emerge from the *didactical perspective* to elaborate on courses addressing the specific needs of different student groups. Educators should

refrain from creating one uniform educational program, and instead have different course formats. A team-based practical method could achieve better results than pure lectures, especially when a business plan needs to be created. Variation between lecture-based and activity-based courses can develop the entrepreneurial intention of students to even greater degrees. Along with specific, non-uniform courses, students prefer networking, tutoring and coaching activities instead of lectures and seminars. If possible, EE programs should consist of effective assessments and interesting stories from and about entrepreneurs offered in a more specialized contextual setting. This makes flexibility in courses that recognize the needs of specific student groups all the more important.

Translating these didactical needs especially when focusing on gender and female entrepreneurship, EE should provide a more *women-centered approach*. Customized entrepreneurship programs to respond to gender-specific needs will increase the entrepreneurial participation of women. More specifically, females need more individual coaching and networking events. Women entrepreneurs could here serve as role models by conveying their success stories. Furthermore, research on behavioral beliefs reveals that participation in entrepreneurship is lower than men's due to risk aversion (Boissin et al. 2011). Here too, the success stories of female entrepreneurs could help remove this feeling of insecurity.

This women-centered approach is a good basis to start upon, and could even be extended when educators not only look at the differences between sexes, but also at the students and their *diversity in general*. This kind of approach is related to the issues of socially constructed gender where a difference is made between masculine and feminine characteristics. More "feminine-focused" countries like Norway evaluate the virtues of masculine characteristics (e.g. entrepreneurship) differently than in more patriarchal societies such as Turkey (Shneor et al. 2013). EE programs should be implemented in a way specific to the gendered context, or could even differ per country based on the individual cultural context. More concretely, Shinnar et al. (2009) found that women from Belgium and the USA perceive fear of failure and lack of competencies as serious barriers, while Chinese women don't. This implies that EE should be adjusted to meet the specific needs of the country or culture in question. Indeed, educators must be aware of differences in gender, culture and national settings when creating EE courses.

Implications for European policymakers can be developed structurally. The government should create the blueprint for more entrepreneurial courses, allowing educators to organize them on a voluntary or compulsory basis to enhance entrepreneurial intentions and behavior in a more structured fashion. Policymakers could also better inform young people about the possibility of an entrepreneurial career. Fostering adequate knowledge will increase the aptitude to start a company, which is why policymakers should support universities and help students become entrepreneurs. Many women state that they feel a lack of support when it comes to this, so assistance via structural, institutional support providing diversified entrepreneurial courses to heighten and improve entrepreneurial skills is a good idea. Figure 1 gives an overview of the most interesting outcomes which could be used for further research.

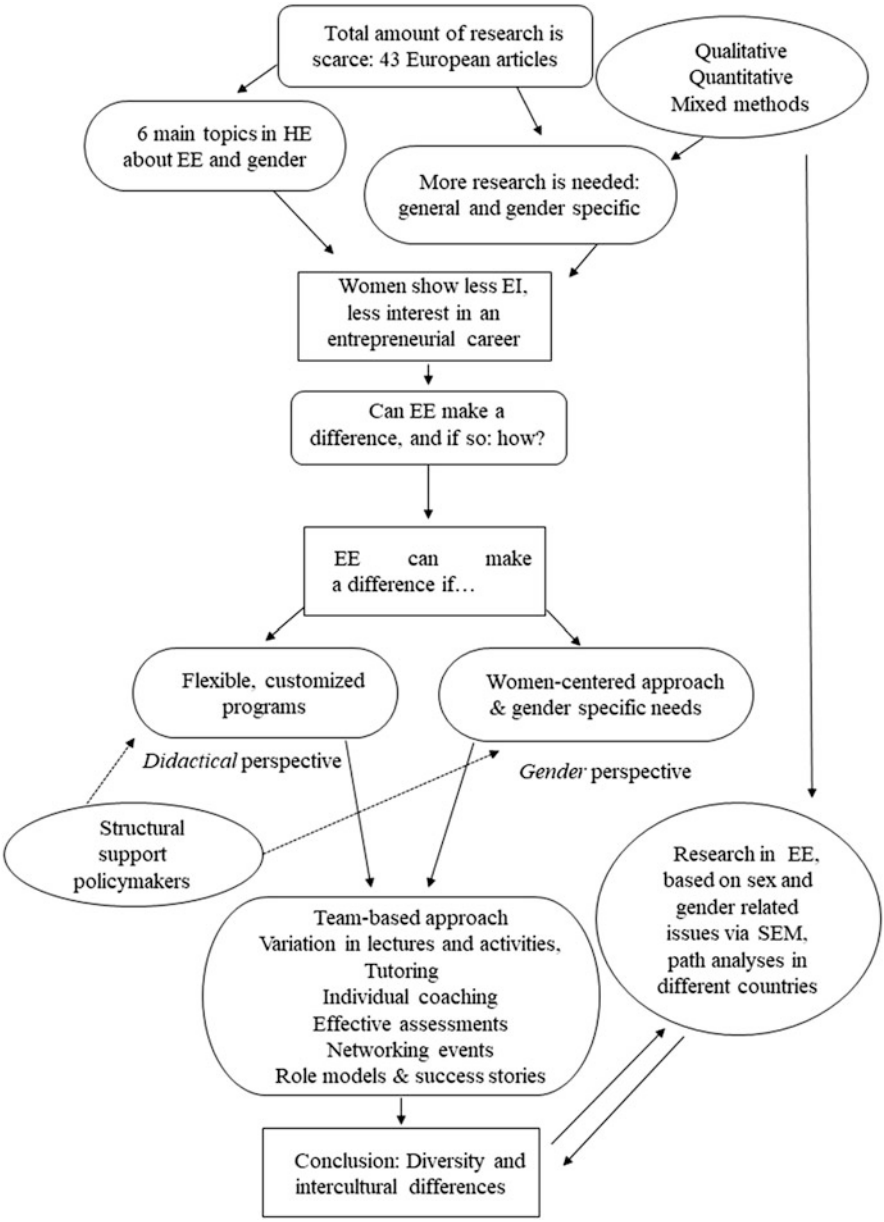

Fig. 1 Conceptual overview of how EE can play a role in stimulating student EI. Source: Own figure

5 Conclusion and Future Research Implications

The purpose of this paper was to create a topical map of research in EE and gender in an effort to identify implications for European educators and policymakers when fostering the female entrepreneurial ecosystem. This research was performed to understand why there is still a minority of women entrepreneurs in Europe, and to provide an answer on how FEI differences within European countries can be countered. Although the total amount of research on this topic is very limited, several conclusions were obtained. In many of the articles, women are seen as having initially lower entrepreneurial intentions and/or interest in an entrepreneurial career, which causes a lower amount of them to become entrepreneurs. Entrepreneurial education could reduce this gender gap in entrepreneurship if it is offered the right way. Customized, women-centered and diversified educational programs could allow female students to become more interested in an entrepreneurial career and have higher entrepreneurial intentions. Networking events, tutoring sessions, testimonials of successful women entrepreneurs and female role models from the educational realm, combined with structural support from European and national governments are the key to stimulating female entrepreneurship.

This review has several limitations. First, although the systematic method of Pickering and Byrne is used, it is still possible that not every single paper on EE and gender from the past 10 years was included in this research, especially since the search was performed in only four databases. A second limitation is the method used to include or exclude articles in the final database. Although the selection reliability was tested with three other coders besides the main researcher, there is still some subjectivity possible in the selection. A third limitation could be found in the setting of the main research topics. Since these were established by only one researcher, they could be biased as well. There are also limitations in the reviewed studies. The state of research on this topic is not as advanced as it could be because a number of the studies were done using non-equivalent, non-randomly-assigned groups.

Our study also includes *some implications for further research*. More research on a larger scale in more countries is needed, and when possible on a longitudinal basis. Secondly, non-economic or non-business students should also be tested. From a third perspective, and something that is of key importance for this review, more research is needed from a customized EE perspective. Research could be performed on the ideal learning style of individuals in an effort to achieve different pedagogical strategies. Personal and environmental factors should also be analyzed in greater depth. More research could be performed concerning intercultural differences and how they affect individuals from different European countries who want to become entrepreneurs. Finally, research on gender stereotypes and the differences in characteristics might offer indicators for explaining EI instead of simply looking at the differences between men and women. All in all, more qualitative and quantitative empirical research is needed to test what kind of EE will help female students become more motivated to start an entrepreneurial career in Europe.

Appendix

Author names	Year	Study design with measures	Sample characteristics	Method—analysis	Stimulus: what kind of EE is being reviewed?	Key findings	Key findings reg gender
Henry, Colette Treanor, Lorna	2010	How can entrepreneurship education benefit veterinary students	No sample	Conceptual paper—literature review	None	Entrepreneurship education has the potential to make a valuable contribution to veterinary medicine curricula	The inclusion of entrepreneurship within veterinary curricula will become increasingly important in the future since EE helps women to overcome gender-specific barriers
Treanor, Lorna	2012	Gender in entrepreneurship education	No sample	Qualitative case study	None	EE within veterinary curricula and more in general over in non-business disciplines is important	The need to positively impact upon entrepreneurial self-efficacy, especially among female students, was considered important
Tegtmeier, Silke Mitra, Jay	2015	Literature review about research in women's entrepreneurship with a focus on university education	No sample	Conceptual paper—literature review	No sample	Quantity of papers is still very limited although more and more attention is drawn to the subject	Most of the authors use either only gender (or search terms: women or females) as a control variable, or that they do not focus on education in their articles

(continued)

Author names	Year	Study design with measures	Sample characteristics	Method—analysis	Stimulus: what kind of EE is being reviewed?	Key findings	Key findings reg gender
Rae, David Martin, Lynn Antcliff, Valerie Hannon, Paul	2012	An overview of curricular and extra-currricular EE in UK	116 HEI are surveyed	Trend analyses	NA	HEI's have a major contribution to make to innovation and economic development. This can only be achieved through developing entrepreneurial people	More males are following more accredited programmes in enterprise than females
Petridou, Eugenia Sarri, Katerina	2011	Knowledge, skills and attitude of students following an EE-course	904 Greek students of business or science following EE-courses (47% fem)	Pre-post-analysis with paired samples and t-tests	2 different entrepreneurial programs focusing on business competences in 2 different institutions	The knowledge, skills and attitudes towards the undertaking of entrepreneurial activities are positively influenced	Men are more interested in entrepreneurship than women
Vilcov, Nicoleta Dimitrescu, Mihaela	2015	Entrepreneurial competences of students and partnership of schools with other stakeholders	171 students enrolled in several HEI 61% fem)	comparative and descriptive analysis	Entrepreneurial skills trainng concerning designing and implementing a product idea	Entrepreneurial training gives students more insights and competences	Gender seems to influence the carreer choice
Mirjana Radović-Marković, Carl Edwin Lindgren, Radmila Grozdanić, Dušan Marković, Aidin Salamzadeh	2012	Entrepreneurial abilities	95 respondents over 4 countries	Mixed method: regression analysis and in depth interviews	Not specified	Entrepreneurial abilities can be best fostered when there are multi-dimensional relationships between the course concepts and entrepreneurship experiences	The new entrepreneurship education strategy should provide a more women centred approach
Jones, Paul Miller, Christopher Jones, Amanda Packham, Gary	2011	Attitudes and motivations	122 Polish students (51% fem)	Qualitative semi-structured interviews	Course about starting a new enterprise	Male and female Polish students have different perceptions and attitudes towards an entrepreneurial career	There is a need to provide tailored provision to meet their gender-specific needs

Kriz, Willy C. Auchter, Eberhard	2016	Entrepreneurial competences and aptitude to start up	1217 Austrian and German students who followed a simulation business game (35% fem)	Regression analysis, correlation tables	Business games	Overall increase in the participants' entrepreneurial knowledge and business plan preparation skills	Males tend to have more entrepreneurial attitude but extended debriefing seem to reduce this decrease in the motivation of women
Kailer, Norbert	2009	Evalution of EE in Germany: literature review	Surveys of former researchers are analyzed	Conceptual paper—literature review	Not specified	The impact of diverse course designs should bere-evaluated	Female students express a special need on individual coaching and networking events
Tiago, Teresa Faria, Sandra Couto, João Pedro Tiago, Flávio	2015	What are the contextual factors influencing entrepreneurial propensity	734 students (46% fem) in 4 - European universities	Multifactorial variance analysis	Not specified	EE seems to be an important indicator for entrepreneurial propensity	Sex and age are not key determinants for EI
Kurczewska, Agnieszka Kyrö, Paula Abbas, Amal	2014	Impact of EE programs + students understanding about the venture creation process	298 master students of Finland and Egypt (49% fem in Egypt, 22% fem in Finland)	Content and thematic analysis	More than half of the students followed a (not further specified) course in EE	The way that society and education systems are organized, has a strong impact on understanding of EE	Finnish females showed lessenthusiasm and inclination towards venture creation
Kurczewska, A. Bialek, J.	2014	EI and entrepreneurial behavior are the depending variables	232 Economic students from Poland (59% fem)	χ^2 tests, two means t-test, coefficient of correlation test and Mann-Whitney U test	Students from the faculty of economics and sociology (no specification about EE-courses)	Males have substantially higher EI than females	Gender was not mediated by self-efficacy but directly affected entrepreneurial intentions

(continued)

Author names	Year	Study design with measures	Sample characteristics	Method—analysis	Stimulus: what kind of EE is being reviewed?	Key findings	Key findings reg gender
Yordanova, Desislava I. Tarrazon, Maria-Antonia	2010	EI and the antecedents of the TPB	366 Bulgarian university students in Economics (50% fem)	Binary logistic regression	1/3 of the respondents have taken compulsory or elective EE-courses	Women have lower EI than men	Gender effect on EI is fully mediated by perceived behavioral control and partially mediated by SN and ATB
Vukovic, K. Kedmenec, I. Korent, D.	2015	The effect of EE on EI and the 3 antecedents SN, ATB and PBC of the TPB of students in one of the 5 years of their study of Economics	347 Croatian students (71.6% females) of Economics of Entrepreneurship	Multiple Regression analysis on EI and antecedents, combined with Levene-test, ANOVA, Welch-test and Tukey Post hoc	Students get during their 5 years of study all kinds of finance and accounting courses, but also specifically entrepreneurship-orientated courses	EI do not increase due to exposure to entrepreneurship education, but the antecedents are significant in the model	Sex turned out to be a statistically significant variable: males have significant more EI than females
Karhunen, PÄIvi Ledyaeva, Svetlana	2010	Entrepreneurial interest/attitude and risk tolerance via the 3 antecedents of TPB: SN, ATB and PBC by perceived Self-efficay	200 Russian students of 3 economic and technical universities in their 3rd, 4th or 5th year of studes (52% fem)	Ordered logit regression	Economic students with business courses versus engineering students without business courses	Students with higher ESE are more risk tolerant and show more entrepreneurial interest.	Females, students of technical specialties, students without entrepreneurial experience and students with lower ESE tended to have a lower degree of risk tolerance
Joensuu, Sanna Viljamaa, Anmari Varamäki, Elina Tornikoski, Erno	2013	EI, ATB, SN, PBC and the change over years	192 Finnish students from 7 different universities of applied sciences (60% female)	Latent growth modeling and structural equation modeling	Students followed 7 different study fields with or without EE	EI decreases during the studies. Males show initially higher levels of EI. The initial level of intentionsdoes not affect the future development of intentions	Male students have a higher initial level of intentions, which do not decrease that much as their female counterparts

Maresch, Daniela Harms, Rainer Kailer, Norbert Wimmer-Wurm, Birgit	2016	The effect of EE on EI and the 3 antecedents SN, ATB and PBC of the TPB in a cross-sectional design	4548 business and engineering students	Ordered logistic regression on EI and its antecedents	Entrepreneurial education was measured by the number of entrepreneurship courses that each student had taken; examples included Business Planning, Creativity, Entrepreneurial Marketing, and others	General support for a positive effect of EE on EI, but in a rather low way (improvement of EE is the key)	EE seems to positively affect EI when controlled for age, gender, and motivational drivers. Female students (control variable) however, have a lower degree of EI
Schwarz, Erich J. Wdowiak, Malgorzata A. Almer-Jarz, Daniela A. Breitenecker, Robert J.	2009	3 predicters of EI: general attitude, attitude toward entrepreneurship and the perception of university environment & start-up infrastructure	2124 students from 7 Austrian universities (53% fem)	Linear regression analysis and ANOVA's	Different study fields with and without business related items: medicine, law, technical,natural, social and business science	No significant differences in the predictors is discovered between the different fields of study	Male students students have more intention to start up
Shneor, Rotem Metin Camgöz, Selin Bayhan Karapinar, Pinar	2013	EI in interaction with culture and sex	401 Norway students (55% fem) and 292 Turkish student (52% fem) of business education	Non-parametric ANOVA	Not specified	Turkish students, regardless of sex, exhibit significantly higher levels of EI and ESE	Male students, regardless of national background, exhibit higher levels of entrepreneurial intentions, self-efficacy and social norms
Dabic, Marina Daim, Tugrul Bayraktaroglu, Elvan Novak, Ivan Basic, Maja	2012	EI measured by perceived feasiblity (PF) and perceived desirability (PD) (Entrepreneurial Event Model)	3420 university students in more than ten countries	Mann-Whitney Test	Different programs, according to the country or the university	Female students are less willing to start their own businesses compared to men	The gender differences appear less in terms of EI but more in terms of PF and PD

(continued)

Author names	Year	Study design with measures	Sample characteristics	Method—analysis	Stimulus: what kind of EE is being reviewed?	Key findings	Key findings reg gender
Varamäki, Elina Joensuu, Sanna Tornikoski, Erno Viljamaa, Anmari	2015	EI is measured together with entrepreneurial potential, and also the 3 predictors and the impact of EE in the change of EI	197 Finnish students of HE institutes (61% female)	Structural equation modeling and path analysis	The difference between lecture-based or active-based entrepreneurship education	EI of students decreased over time.	Intentions and attitude of female students decreased signficantly compared to the male students
Küttim, Merle Kallaste, Marianne Venesaar, Urve Kiis, Aino	2014	ATB, SN, PBC in combination with age, gender and EE	55,781 European students from 17 countries (56% fem)	Binary logistic regression	Lectures, seminars, networking and coaching	Students want less lectures and seminars, but more networking and coaching activities. EE-courses influence positively EI	The difference in EI of both sexes is not that big. Women think they will be an entrepreneur within 5 years rather than right after their studies
Turker, Duygu Senem Sonmez, Selcuk	2009	EI measured with self-confidence, perceived level of education and perceived opportunities on entrepreneurial propensity	300 of 4 Turkish universities (49% fem)	Lineair regression	Students of natural and social sciences are tested in various years of studies	Educational and structural support strengthen the EI of students	No conclusions about gender are taken in this study
Shneor, Rotem Jenssen, Jan Inge	2014	EI is measured, based on the study of Kolvereid and adopted with 3 additional items. 12 independent variables are added	1782 students from all the departments and programs of the University of Agder (UiA) in Norway (58% fem)	Multiple regression and path analysis	Since students come from different departments, no discussion about the kind of EE is given (except the impact of the major Economics which is more general)	The effects of entrepreneurial experience, social norms, self-efficacy and age have a positive impact for both sexes	The direct effect of entrepreneurship education and risk perceptions are only evident among females. The direct effects of role models and taking an economics major are only evident among males

Agapitou, Sofia Tampouri, Petros Bouchoris, Nikolaos Georgopoulos and Alexandros Kakouris	2010	Entrepreneurial intentions and beliefs	413 Greek students in science or economics of 2 universities (43% fem)	Correlation and ANOVA tests	Optionally offered courses in the format of case studies	Males tend to have more intention than females. EE courses are needed.	Gender differences disappear within the subgroup of those who have participated entrepreneurship education
Packham, Gary Jones, Paul Miller, Christopher Pickernell, David Brychan, Thomas	2010	Entrepreneurial attitude by impact of EE	237 undergraduate students in France, Poland and Germany (49% fem)	Two tailed t-tests and ordinal regression (pre-post test)	A single course given in all three universities about developing a viable business idea	EE has a positive impact on entrepreneurial attitude of French andPolish students, but not for German studetnts	The impact of enterprise education on entrepreneurial attitude is actually more significant for male students
Barakat, Shima Boddington, Monique Vyakarnam, Shailendra	2014	Self-efficacy as predictor to entrepreneurial activity (= starting up) with direct correlation to creativity and innovation by a self created and validated tool	Students and postgraduates of different universities mainly in UK, but also in Finland, Portugal, Greece and Ireland (45% fem)	Pre and post test, combined with a follow up after 6 months	Different entrepreneurial programs, some residential, some only for women programs	Different learning activities can lead to specific entrepreneurial programs to help students in becoming entrepreneurial in a more customized way	In the women's only group students had a sharper increase of ESE and then a drop off at 6 months after the course
Teixeira Dina, Simoes Jorge Simões, Silva Maria José Madeira	2012	ESE in relation with personality, level of education, gender, professional experience and propensity for risk	No sample	Conceptual paper—literature review	None	The relationship between Entrepreneurial Self-efficacy and Personality, Professional Experience, Level of Education, Gender and Propensity for Risk should be investigated	/

(continued)

Author names	Year	Study design with measures	Sample characteristics	Method—analysis	Stimulus: what kind of EE is being reviewed?	Key findings	Key findings reg gender
Shinnar, Rachel S. Giacomin, Olivier Janssen, Frank	2012	EI and entreprneurial perceptions in interaction with culture and sex	761 university students (45% fem) from 3 different nations (China, Belgium, USA), which give 3 different cultural backgrounds	Structural equation modeling	Not specified	There are signficant differences in barrier perceptions	Women of USA and Belgium perceived fear of failure and lack of competency more important barriers than men
Hytti, Ulla Heinonen, Jarna	2013	Identities of entrepreneurs	Qualitative case study analysis of diaries of 7 students	Qualitative case study	Entrepreneurship program with business skills	Students should identify themselves with entepreneurs before becoming an entrepreneur	Male participants rely more to the heroic identity while females rely more to the humane identity who is running a low-tech firm with modest business goals
Jones, Sally	2015	Beliefs about entrepreneurs	2 UK female students and 1 educator	Qualitative case study	Entrepreneurship course with discussion about ethnic minorities	Students and staff misrecognize the masculinization of entrepreneurshipdiscourses that they encounter as natural and unquestionable	Students heard that entrepreneurship requires certain (masculinized) traits or you that you have to be special to become an entrepreneur

Jones, Sally	2014	Masculine and feminine characteristics of the entrepreneurship theory	No sample of student, only some documents and diaries were analyzed	Qualitative case study	None	Feminist concerns with social categorisation are important to analyze deeper	HE entrepreneurship education currently encourages students to develop a sense of fictive kinship with the entrepreneurs but since the foundations of entrepreneurship theory are masculinised, this could cause problems for those who do not accept this socially constructed form of masculinity
J. Beynon, Malcolm Jones, Paul Packham, Gary Pickernell, David	2014	Motivation to follow an EE-course	720 students in an undergraduate enterprise program (53% fem)	New data mining technique (CaRBS)	Undergraduate entreprise degree program	Students follow EE courses when they are motivated to acquire more knowledge or skills	Female students were more discerning in their responses regarding motivational characteristics than their male counterparts: EE-courses should be gender specific
Petridou, Eugenia Sarri, Aikaterini Kyrgidou, Lida P.	2009	Proportion of participants in EE (differences in gender and study field), attitude towards course	1639 Greek students following EE-courses (46% fem)	Descriptive analysis	An entrepreneurship course that varies from one till three semesters in different universities	Differences in participation rates, attitudes towards entrepreneurship education and perceptions about required skills between the two genders	Higher enrollment rates of males than females

(continued)

Author names	Year	Study design with measures	Sample characteristics	Method—analysis	Stimulus: what kind of EE is being reviewed?	Key findings	Key findings reg gender
Hytti, Ulla Stenholm, Pekka Heinonen, Jarna Seikkula-Leino, Jaana	2010	Perceived learning outcome, motivation, team behavior	117 students in EE-courses (47% fem)	Regression analysis, pre-post-analysis and follow up	Obligatory basic level entrepreneurship course where a viable business idea is developed	Extrinsic motivation has a positive influence on learning outcomes, intrinsic has a negative influence	Age nor gender are associated with the learning outcomes of the students
Hoogendoorn, Sander Oosterbeek, Hessel van Praag, Mirjam	2013	Need for achievement, need for power, perseverance, risk aversion,self-efficacy and social orientation among others	516 undergraduate students divided in 43 student teams	Analysis of team performances , regression	Starting up a venture as part of their curriculum	Teams with an equal gender mix perform better than male-dominated teams in terms of sales and profits	Men and women in mixed teams may complement each others' skills and knowledge
Jones, Paul Jones, Amanda Packham, Gary Miller, Christopher	2008	Attitude towards EE-course, impact of EE-course and future intent	50 Polish students (53% fem)	2-taled t-tests on a pre- and post design	An entrepreneurship course where students get knowledge and skills about business planning	Students had limited prior entrepreneurial experiences and expectations and welcomed the opportunity to undertake enterprise education	Male students show more entrepreneurial intent
Boissin, Jean-Pierre Branchet, Bénédicte Delanoë, Servane Velo, Veronica	2011	Behavioral beliefs affecting Attitude towards entrepreneurship (ATB)	941 French students (56% fem) of different universities	χ^2 tests	Not all students have the same courses of EE since they are enrolled in different universities	Female students show less aptitude to start as entrepreneur.	Women's attraction and participation in entrepreneurship are lower than men's due to risk aversion: this could be countered by stories of role models

Bergmann, Heiko Hundt, Christian Sternberg, Rolf	2016	Propensity to start up in relation with individual and contextual factors	Analysis of student entrepreneurs in 41 European countries via micro-data of the 2011 Global University Entrepreneurial Spirit Students' Survey (GUESSS)	Multi-level techniques	NA	Entrepreneurship education has a positive effect on nascent entrepreneurship behavior of students	On the individual level, age,being male, and parental self-employment have a consistent and significant positive impact on nascent and new entrepreneurial activity
Staniewski, M. W. Szopinski, T.	2015	Entrepreneurial attitude/readiness to start	253 Polish students of Finance, management and engineering	χ^2 tests	NA	Polish students exhibit a strong interest in establishing their own businesses, which is promising for the Polish economy	Men were found more eager to start as an entrepreneur than women
Oehler, A. Hofer, A. Schalkowski, H.	2015	Entrepreneurial knowledge, education and ambition of young bachelor students	386 undergraduate German students (49% females) without having entrepreneurial courses yet	Crosstab analysis, regression analysis and ordered logistic regression	Students knowledge and interest in entrepreneurship were measured before any entrepreneurial course	Students' age, their knowledge and ambition to become entrepreneurs substantially influence the gaps in knowledge and competences	Female students show less aspiration to become entrepreneurs
Castiglione, C. Licciardello, O. Sánchez, J. C.	2013	Entrepreneurship motivations and difficulty measures to start up, more related to family business	100 engineering students (50% fem)	ANOVA and student t-test	NA	Students who had a family business background show a stronger entrepreneurial orientation than who had not a family business background	Educational institutions should organize trainings in order to prepare new generations to theenterprise culture for both genders

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