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Does gender balance in entrepreneurship education make a difference to prospective start-up behaviour?

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Abstract

Purpose – This study aims to examine the role of gender balance in forming individuals' understanding of entrepreneurship as manifested in the graduates' occupational choices, asking: Does gender balance in entrepreneurship education influence start-up behaviour after graduation? Based on gender mainstreaming, this study builds on the assumption that gender balance influences classroom and student community discourses. This study presents two hypotheses suggesting a positive relationship between gender balance (student and mentor gender balance, respectively) and the likelihood of engaging in start-up behaviour after graduation.

Design/methodology/approach – The context is an international one-year master's programme in entrepreneurship and innovation, which adopts an experienced-based pedagogical approach to support learning. This study applies binary logistic regression analysis to test the hypotheses on a sample of 107 graduates who responded to a web-based questionnaire on post-graduation career paths.

Findings – This study finds support for the first hypothesis indicating that student gender balance in the classroom has a significant positive impact on graduates' likelihood of engaging in start-up activity post-graduation. In the interpretation of these findings, this study emphasizes that a master's programme in entrepreneurship is an important arena where students' attitudes, values, aspirations and intentions towards entrepreneurship are shaped and their identity developed.

Originality/value – While studies have demonstrated gender bias in the discourses on entrepreneurship education and content, there is little evidence of its consequences or how it is addressed. Findings of this study point directly to this gap by revealing that improved gender balance is not only beneficial to the underrepresented gender, but to the overall student group.

Keywords Entrepreneurship education, Gender balance, Graduate start-up, Masculine norm

Paper type Research paper

Introduction

Entrepreneurship is a gendered phenomenon, where masculinity overtrumps femininity (see e.g. Wheadon and Duval-Couetil, 2019a). The masculine image of entrepreneurship is found in policy (Ahl and Nelson, 2015; Pettersson, 2012), in entrepreneurial ecosystems (Brush *et al.*, 2019) and in education (Cochran, 2019; Jones, 2014). For a long time, this has impacted how we understand entrepreneurship as a phenomenon and, hence, who considers themselves as potential entrepreneurs (e.g. Ahl, 2002; Wheadon and Duval-Couetil, 2019b).

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Since the 1980s entrepreneurship education has been promoted as a panacea for solving economic inequalities and increasing innovativeness in western societies (Berglund, 2013). As a result, educational initiatives have seen exponential growth (Morris and Liguori, 2016; Neck and Liu, 2020), where experiential learning through a combination of theory and practice is endorsed as the ideal pedagogical approach to spur entrepreneurialism (Nabi *et al.*, 2017; Neck and Corbett, 2018).

However, the experience-based approach in entrepreneurship education has mainly been adopted within business and engineering schools (Jones and Penaluna, 2013; Lackéus and Williams Middleton, 2015) attracting a highly skewed audience of students often representing a majority of business school students. Despite the fact that the number of female students undertaking higher education is constantly increasing, they constitute a distinct minority in most entrepreneurship programmes (Cochran, 2019; Jones, 2015). Hence, the phenomenon of entrepreneurship education still mirrors the gender skewness in entrepreneurial activity, resulting in a majority of male students in the entrepreneurial classroom. In particular, experience-based entrepreneurship education has been found to be masculine in its social construction (Jones and Warhuus, 2018), something that may influence entrepreneurial outcomes for male as well as female students (Shinnar *et al.*, 2014).

Since the 1990s, gender mainstreaming has been introduced as the key tool to address gender inequalities in various areas of society, which is strongly promoted by institutions such as the United Nations and the European Union (Stratigaki, 2005). In gender mainstreaming, a balanced representation of men and women in various arenas is a central aspect (Lombardo and Meier, 2006). While strongly encouraged, gender mainstreaming has also been criticized for being too simple and underestimating the resistance to changing gendered institutions that are embedded in society, such as in power relations (Benschop and Verloo, 2006). Nevertheless, gender balance remains an equality goal and is promoted in a variety of arenas from education to politics and corporate boards (Drudy, 2008; Skjeie and Teigen, 2005). This is also the case in the area of entrepreneurship, where a particular focus has been on the share of women among entrepreneurs, the so-called gender gap (Bernat *et al.*, 2017; Bönte and Piegeler, 2013).

In discussions about what causes the gender imbalance in entrepreneurship, the educational setting is of particular interest as education is a core arena for socialization processes; the processes through which social constructions are formed, transferred and confirmed (Tierney, 1997; Weidman, 1989). The timeperiod of university studies also coalesces with the emerging phase of adulthood as described by Arnett (2000), which is a turbulent time often characterized by ambiguity, instability and experimentation that provides ample grounds for students to reconsider their norms. During entrepreneurship education, students become familiar with entrepreneurship as a phenomenon and a process. In this process, the students' attitudes and intentions related to entrepreneurship are formed (Donnellon *et al.*, 2014; Kassean *et al.*, 2015) alongside the development of their identity and understanding of themselves as potential entrepreneurs (Frederiksen and Berglund, 2019). By interacting with others, such as peers and faculty members, the students learn about cultural norms and the behaviours that are expected of entrepreneurs. This implies socialization processes through which students learn the behaviours and skills to fulfil new entrepreneurial roles and the gendered values that are equated with success in this domain (Sallee, 2011). Consequently, education is an arena where the gendered understanding of entrepreneurship can be formed and challenged, with implications for which students identify with the entrepreneurial role.

We set out to examine the role of gender balance in forming an understanding of entrepreneurship as manifested in the occupational choices of graduates. Specifically, we ask: Does gender balance in entrepreneurship education influence start-up behaviour after graduation? In line with the idea of gender mainstreaming, we build on the assumption that

gender balance influences the discourses in the classroom and among the student community, and hence, the inputs to the construction of entrepreneurship. As acknowledged in the study by King *et al.* (2010), numeric representation might impact the psychological climate in the group and thereby influence outcomes. In a gender-balanced group, the masculine norm of entrepreneurship may be challenged, as the minoritizing processes where female students are singled out as diverging from the (male) norm are likely to be reduced (Kanter, 1977). We further argue the social constructions of entrepreneurship created in the classroom are likely to influence whether a particular student conceives entrepreneurship as "something for me" and, therefore, her/his tendency to engage in entrepreneurial behaviour after graduation (Hytti and Heinonen, 2013). Hence, we examine whether gender balance among students and mentors in the study programme influences (male and female) students in choosing entrepreneurship after graduation.

Theoretical background and hypothesis development

Entrepreneurship education

Entrepreneurship education has been seen as an important means for developing entrepreneurial skills and knowledge among students, fostering an entrepreneurial identity and thereby increasing the pool of entrepreneurs (Chatzichristou and Henry, 2014; Williams Middleton and Donnellon, 2014). Previous studies of entrepreneurship education have addressed issues such as curricular design, course content and pedagogical approaches (Hägg and Gabrielsson, 2020). Several studies have also highlighted the importance of role models, reflected in the engagement of mentors and guest lecturers (Cochran, 2019; Jones and Underwood, 2017; Miettinen, 2006). The importance of role models is closely connected to the increased attention to experience-based approaches that typically dominate the field of entrepreneurship education (Hägg and Kurczewska, 2019; Robinson *et al.*, 2016).

Over the past decades, the focus on action orientation and experience-based approaches in the curriculum has generated a specialization of entrepreneurship programmes in the form of venture creation programmes (Lackéus and Williams Middleton, 2015; Rasmussen and Sørheim, 2006). Venture creation programmes mimic the actual practice of entrepreneurs with the aim of preparing students to take on the role of entrepreneur. A core characteristic of such programmes is that they seek to create an active community among students similar to those found in incubators, with a focus on peer-to-peer learning, mentoring and learning from involvement with the creation of a venture. Venture creation programmes have been found to influence students' motivation and intention to become entrepreneurs, as well as their development of an entrepreneurial identity (Donnellon *et al.*, 2014; Williams Middleton and Donnellon, 2017). However, venture creation programmes also grapple with the masculine domination of entrepreneurship as a phenomenon (Jones and Warhuus, 2018). Entrepreneurship education is gendered when it comes to its conceptualization of entrepreneurship (Jones, 2015), its discourses (Jones, 2014), its recruitment of mainly male students (Cochran, 2019; Jones and Warhuus, 2018) and its outcomes (Westhead and Solesvik, 2016). However, so far, there is little inquiry into how the masculine norm of entrepreneurship can be challenged.

The inherent gender bias in entrepreneurship

More men than women engage in entrepreneurial activities in almost all countries (Elam *et al.*, 2019). Furthermore, feminist analyses have revealed gender as inherent in structures, institutions, discourses and cultural practices related to entrepreneurship (Lewis, 2006). Gendered norms of entrepreneurship are found in entrepreneurship policy (Ahl and Nelson, 2015; Foss *et al.*, 2019), within support systems (Lindholm-Dahlstrand and Politis, 2013;

Marlow and McAdam, 2012), in access to financial capital (Alsos and Ljunggren, 2017; Malmström *et al.*, 2017), as well as in the symbolic valuation of human and cognitive capital (Wheadon and Duval-Couetil, 2019a). The dominant discourse implicitly holds the understanding that women are bringing gender into entrepreneurship. Hence, in its traditional characterization entrepreneurship is seen as gender-neutral, while women entrepreneurs represent the deviation (Lewis, 2006). Consequently, scholarly analyses and policy debates tend to discuss how women entrepreneurs differ from, or are similar to, their male counterparts (Ahl and Marlow, 2012). In contrast, feminist scholars argue that instead of analysing differences between women and men, we should see entrepreneurship as fundamentally gendered, meaning that distinctions between men and women, as well as between the masculine and the feminine, underpin our understanding of entrepreneurship (Lewis, 2006).

Not only is entrepreneurship understood as essentially masculine, but the masculinity embedded in entrepreneurship is generally invisible (Bruni *et al.*, 2004; Lewis, 2006). This invisibility means that the role of gender is not actively reflected upon unless it is brought to the table, such as in the use of gender mainstreaming as a tool promoted by the United Nations (Stratigaki, 2005). Given that gender is fairly invisible in entrepreneurship, the male dominance works as a self-strengthening process. A few women entering the arena might not change this as they are often made "tokens" of their gender (Joecks *et al.*, 2013; Kanter, 1977), explicitly constructed as different and marked as "the deviation from the norm" (Diaz-García and Welter, 2013; Pritchard *et al.*, 2019). Due to the benefit of being the norm, men are unaware that their gender plays a role (Lewis and Simpson, 2010).

Gender balance as an attempt to challenge the masculine norm

Gender balance is often introduced as a measure to promote gender equality, assuming that participatory balance will reduce gender inequality as women and men are then given the same opportunities (Skjeie and Teigen, 2005). A numeric balance between women and men is an aim in a variety of situations, such as among elected members in political parties (Bush, 2011), speakers at seminars (Casadevall, 2015) and in management positions (Ogden *et al.*, 2006). Gender balance is considered a means to achieving gender equality by placing more women in decision-making roles in the business sector and giving women equal opportunities to use their abilities such as taking seats on a board of directors as women's talents are currently underutilized at decision-making levels (Terjesen *et al.*, 2015) or because women bring different perspectives (Adams *et al.*, 2011; Campbell and Mínguez-Vera, 2008). Hence, improved gender balance is suggested to influence a variety of outcomes.

Kanter (1977) pointed to the issue of numerical gender representation as important for decreasing gender bias in the business sector. She argued that when severely underrepresented, women become "tokens", i.e. perceived to differ from the rest of the group ("the dominants"). Tokens do not fit into the stereotypical role that is perceived to be appropriate by dominant members of the group and are, therefore, marginalized. In addition, the tokens become highly visible as different and there is often a tendency to exaggerate the difference between the tokens and the dominant members (Kanter, 1977; Lewis and Simpson, 2012). In an attempt to become assimilated, tokens may respond by keeping a low profile (Lewis, 2006) or adopting the behaviours and characteristics of the dominant group. This has been associated with a liberal feminist perspective that assumes that gender disadvantages can be overcome by creating a more gender-balanced group (Lewis and Simpson, 2012).

Empirical tests of Kanter's tokenism theory in various contexts have shown mixed results (Gustafson, 2008; Stichman *et al.*, 2010; King *et al.*, 2010; Yoder, 1991). The theory has been criticized for over-emphasizing the effects of numerical representativeness and thereby overlooking the fact that gender bias favours masculinity as a source of social status and power (Lewis and Simpson, 2012). Other social and cultural factors that privilege the

masculine also come into play in more balanced communities (Gustafson, 2008; Yoder, 1991). It has even been suggested that improved gender balance might "reinforce rather than destabilize the normative power of men as women 'take up' masculine practices and values" (Lewis and Simpson, 2012, p. 153).

Gender balance in a formative context such as entrepreneurship education

The context of the above discussions of gender balance and tokenism is typically larger organizations where power structures are already in place. The context of this study is an education programme, hence an arena where the norms and values of young people are developed through socialization processes (Tierney, 1997; Weidman, 1989). The literature on socialization during higher education affirms that while students enter higher education with certain values, aspirations and personal goals, they are socialized during education through normative pressures via social relationships with faculty members and peers and consequently change or maintain these values, aspirations and goals (Weidman, 1989). The issue of gender balance in education has been widely discussed (Drudy, 2008). Studies have found that gender balance among students and faculty members influences learning and the discussions in the classroom (Opie *et al.*, 2019; Tatum *et al.*, 2013). Building on this, we here argue that gender balance in entrepreneurship education may influence the discourses of entrepreneurship that take place in a class, thereby impacting how entrepreneurship is constructed.

A learning context in a venture creation programme consists of a group of students and the faculty that often includes practicing entrepreneurs who may act as mentors and role models for the students (Bisk, 2002; Hägg and Politis, 2017; Miettinen, 2006). In such a community, practices, beliefs, values and understanding emerge as part of this mutual engagement (Holmes and Meyerhoff, 1999). Hence, the conceptualization of entrepreneurship is shaped and reshaped in this socialization process, during which a shared identity tends to develop in the group (Lefebvre *et al.*, 2015).

We argue that the group composition is essential for the gendered conceptualization of entrepreneurship developed in the class. Similar to Kanter (1977), Wheadon and Duval-Couetil (2019a) state that in highly skewed groups, the majority becomes synonymous with the characteristics of the occupation in question, in this case, entrepreneurs, while the individuals in the minority represent "tokens", i.e. "women-entrepreneurs". It is only when the minorities in the group composition exceed a certain threshold that they cease to be "tokens" and instead can collaborate on more equal terms as entrepreneurs without the prefix "women". Moreover, the structural representation of women in a group (i.e. token status) relates to the context that they individually perceive (the psychological climate), which influences their attitudes and behaviours (King *et al.*, 2010). Although gender bias still favours masculinity (Lewis and Simpson, 2012), we suggest that among students in a class where the entrepreneurship discourse is on the agenda, the masculine norm will also be discussed and challenged, particularly in more gender-balanced classes. This could help to reduce the gendered stereotypes found in contexts where entrepreneurship is promoted (Malmström *et al.*, 2017; Wheadon and Duval-Couetil, 2019b).

Hypothesis development

This study analyses the influence of gender balance in an experience-based entrepreneurship programme on subsequent entrepreneurial outcomes. While outcomes of entrepreneurship education are frequently debated, a vast amount of the literature has measured students' entrepreneurial intentions (Karimi *et al.*, 2016; Nabi *et al.*, 2017), emphasizing theoretical assumptions where the intention is seen as a predictor of future action (Ajzen, 1991; Krueger *et al.*, 2000). Although the importance of intentions should not be neglected in the discussion

on entrepreneurial action (Liguori *et al.*, 2020), the present study seeks to understand the formation of actual entrepreneurial behaviour (Rauch and Hulsink, 2015). Hence, in this study, we focus on the likelihood that graduates from entrepreneurship education will engage in entrepreneurial behaviour, conceptualized as a new business start-up.

If enactments of entrepreneurship in a student group can help extend the understanding of what entrepreneurship entails and who can take the role as an entrepreneur, other forms of entrepreneurship can be promoted. With both male and female students present in sufficient numbers in an entrepreneurship class, the identity of the "heroic entrepreneur" can be supplemented by an alternative identity of the "humane entrepreneur" who does not seek high-growth or to be positioned as high-tech but instead builds on more internal goals for becoming entrepreneurial in different contexts (Hytti and Heinonen, 2013). Consequently, entrepreneurial activity can be made more relevant not only for women but also for men who do not identify themselves with the narrow masculine understanding of the "heroic entrepreneur". While it is naïve to assume that gender balance at the group level will circumvent gendered understanding of entrepreneurship in society, we suggest that it *can* play a certain role in changing the understanding of entrepreneurship among group participants such as students within entrepreneurship programmes.

Student gender balance. Based on our above discussion of the influence of gender balance for how constructions of entrepreneurship are shaped in a class and the role of these commonly held constructions in individuals' career choices, we suggest that gender balance in the student group influences the occupational choices that students make after graduation, in particular, the decision to become an entrepreneur. We argue that a broader and more inclusive understanding of entrepreneurship requires challenging the masculine norm of the "heroic entrepreneur". In this respect, a gender-balanced entrepreneurial classroom can decrease the minoritizing processes marking women students as "tokens" that deviate from the entrepreneurial norm (Lewis, 2006). Consequently, the shared identity construction in more gender-balanced classes can be more inclusive, opening up for other understanding of what entrepreneurship is. Different "models" of entrepreneurship or entrepreneurial identities may emerge (Hytti and Heinonen, 2013). A more inclusive understanding is likely to increase the likelihood of students perceiving themselves as capable of undertaking the role of entrepreneur. Hence, we suggest that:

H1. There is a positive relationship between student gender balance in class and the likelihood of engaging in start-up behaviour after graduation

Mentor gender balance. In experience-based entrepreneurship education, external mentors are often assigned to the students, typically entrepreneurs or others from industry with expertise related to entrepreneurship (Hägg and Politis, 2017; St-Jean and Audet, 2009). Mentors give advice and act as role models for the students. Studies on role models in educational settings have pointed to gender as relevant for the impact of career role models (Kofoed, 2019). Female students in male-dominated areas have been found to benefit from examples of outstanding women, illustrating that gender barriers can be overcome (Lockwood, 2006). In addition, access to same-sex role models seems to enhance educational performance for both sexes (Bettinger and Long, 2005) and influence career choices (Kofoed, 2019). Furthermore, similar to the arguments for gender balance in the student group, we assume that gender balance among mentors contributes to a more diverse understanding of entrepreneurship. The gender diversity of role models can challenge the masculine norm of entrepreneurship, thereby making an entrepreneurial career more attractive to a broader set of students. As apprentices in the entrepreneurship community, students seek to learn what it means to be an entrepreneur and will absorb attitudes, ideas, values, norms, language and behaviours to feed perceptions of self and others (Handley *et al.*, 2006; Holmes and Meyerhoff, 1999). In this process, they are influenced by mentors as representatives of the "core", as

strong norm holders for what entrepreneurship is. Hence, the gender composition of mentors can signify something for the students and thereby influence their decision to engage in start-up behaviour after graduation. Accordingly, we suggest the following hypothesis:

H2. There is a positive relationship between mentor gender balance and the likelihood of engaging in start-up behaviour after graduation

The analytical model, illustrated in Figure 1, described the proposed relationship between the independent and dependent variables as well as the control variables that could impact the likelihood of graduates engaging in entrepreneurial behaviour post-graduation.

Method

Context

The context of the study is an international one-year master's programme in entrepreneurship and innovation at a Business School located in a Swedish university. The study programme offers two tracks where one focuses on new venture creation (NVCR) and the other on corporate entrepreneurship and innovation (CEIN). The programme was established in 2007 and applies an experienced-based pedagogical approach to support experiential learning. The experienced-based pedagogical approach implies that all study courses are designed to encourage students to try out new ideas, knowledge and skills in practice along with formative feedback to support their experiential learning. The courses are taught by faculty members as the main lecturers but are closely connected to the entrepreneurship ecosystem surrounding the university. This means that the courses involve a high degree of external guest lecturers such as practicing entrepreneurs, alumni from the programme, mentors, representatives from the private sector and other experts within the field of entrepreneurship. The external element of teaching is carried out by providing guest lectures, panel discussions with invited external actors, workshops and seminars where students receive feedback from external actors on their presentations of business projects. The study programme also has an integrated mentorship programme with a pool of external

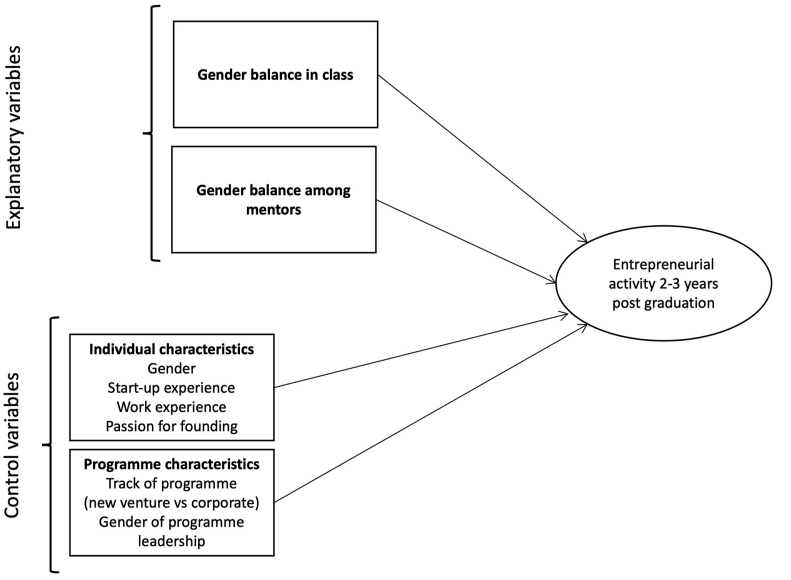

Figure 1.
Analytical model

mentors. In the new venture creation track, each student is assigned an individual mentor, while in the corporate and innovation track, each student team is assigned a mentor from the internship company. The new venture creation track has been running since its inception in 2007, while the corporate entrepreneurship and innovation track was initiated in 2011. In the venture creation track, a real-life business start-up serves as the main learning vessel (Lackéus and Williams Middleton, 2015), which means that students initiate and carry out a new business start-up as their entrepreneurial project. The entrepreneurial project course is supported by various courses related to the entrepreneurial process, including opportunity recognition, entrepreneurial marketing, venture finance, entrepreneurial leadership and the degree project consisting of the master thesis. In a similar vein, the corporate and innovation track engages in highly experiential learning by means of an internship, where students work on an intrapreneurial project for a company. To support their experiential learning a set of courses related to the corporate entrepreneurship context are provided, including corporate entrepreneurship, organizing for innovation and entrepreneurship, innovation management and open innovation, entrepreneurship project and research methods and internship and a degree project (including a master thesis). Both tracks attract a diverse pool of students with a wide range of study backgrounds, ranging from mainstream areas such as business, economics and engineering to areas in the humanities and social sciences, e.g. arts and political studies. While located in Sweden, the programme is highly international with, on average, 81% of students from outside Sweden. There is a diversity of nationalities (73 countries represented) covering all parts of the world, but with a majority from Europe (67%).

Data collection

Both primary and secondary data were collected to fulfil the aim of the study. A web-based questionnaire was distributed in October 2018 to the full population consisting of 472 graduates from both tracks of the programme. In total, 11 cohorts graduated from the programme between 2008 and 2018. The questionnaire generated data measuring post-graduation career paths, demographics, educational experience, contact and engagement of alumni. After four reminders, we received 201 valid responses (43%). To enable an analysis of the potential effect of time and perseverance in pursuing an entrepreneurial career post-graduation, information on students' occupations up to two-three years after graduation was deemed necessary. Therefore, we excluded 94 responses from the last 3 cohorts (2016–2018), which gave us a final sample of 107 respondents.

Secondary data were collected at both individual and programme levels. The individual-level data includes information about student demographics such as age, gender, educational disciplinary background, country of origin and previous work experience at the time of applying to the programme. The individual-level data were collected from the admission database (NyA-Webben), which provided access to various documents such as CVs, statements of purpose and academic qualifications. The programme-level data include information about the gender of programme directors in the study programme, gender distribution among external mentors and gender distribution of students for each year since the start of the programme in 2007 (Table 1).

Measures

The measures were derived from a careful review of previous theoretical and empirical work on entrepreneurship education (Duval-Couetil, 2013; Westhead and Solesvik, 2016; Jones and Warhuus, 2018; Rauch and Hulsink, 2015; Hägg and Gabrielsson, 2020), entrepreneurial careers (Scherer *et al.*, 1990; Kofoed, 2019; Ligouri *et al.*, 2020) and gender balance (Lewis, 2006; Tatum *et al.*, 2013; Opie *et al.*, 2019). A description of how the variables were constructed can be found below.

Table 1.
Gender distribution among mentors and students per year and track

	Share of female mentors (%)		Population (N = 472) Gender distribution students (females %)		Sample (n = 107) Gender distribution students (females %)	
Grad. year	NVCR*	CEIN*	NVCR	CEIN	NVCR	CEIN
2008	0.06	–	0.31	–	0.20	–
2009	–**	–	0.39	–	0.20	–
2010	–**	–	0.27	–	0.00	–
2011	–**	–	0.22	–	0.14	–
2012	0.11	0.38	0.27	0.29	0.50	0.33
2013	0.12	0.30	0.25	0.33	0.43	0.20
2014	0.17	0.00	0.29	0.31	0.31	0.33
2015	0.23	0.13	0.31	0.39	0.33	0.36

Note(s): * Track specialization: New venture creation (NVCR), Corporate Entrepreneurship and Innovation (CEIN)
** Missing data for gender distribution of the mentors in years 2009, 2010 and 2011

Dependent variable
Self-employment and new venture creation are widely used as indicators of entrepreneurial activity (Gartner, 1985; Cohen *et al.*, 2008; Rauch and Hulsink, 2015). *Start-up after graduation* was measured by a binary variable indicating whether the graduate is self-employed in her/his own venture during the second and/or third year after graduation. The measure includes two forms of self-employment; full-time self-employment and hybrid entrepreneurship in which the graduate combines paid employment (for an employer) and self-employment (Folta *et al.*, 2010; Thorgren *et al.*, 2016). The questionnaire data provide us with information about the graduates' main occupational status for each year after graduation up to 2018. Given that a real-life business start-up constitutes the main learning vessel within the venture creation track, it is likely that graduates from the programme continue engaging in start-up activity immediately and/or shortly after graduation. To enable the analysis of time lags in the potential effects of the programme, we measured self-employment during a time window that takes place two-three years after graduation. Following this logic, start-up after graduation was operationalized through a discrete dichotomous variable indicating whether the graduate is self-employed in her/his own venture in the second and/or third year after graduation (=1) or not (=0).

Independent variables
Student gender balance was measured by a metric variable, using Blau's (1977) index of heterogeneity $(1 - \sum p2i)$, where pi is the proportion of group members in each of the i categories. Values of the index range from 0 to a maximum of 0.5, which occurs when the composition of students in class comprises an equal number of men and women. The variable measuring student gender balance relates to the specific year for which the graduate was enrolled in the programme. *Mentor gender balance* was measured by a metric variable, also using Blau's (1977) index of heterogeneity based on the ratio of male and female entrepreneurs recruited as external mentors for the programme. The external mentors serve as an individual sounding board for the students and the relationship is built based on the students' needs. In a similar vein, the variable measuring mentor gender balance represents the specific year for which the student was enrolled.

Control variables
We included six control variables that might have an impact on students' start-up behaviour after graduation. First, due to a general underrepresentation of women in new venture

creation activities (Minitti *et al.*, 2005), we expect that the tendency to engage in start-up activity after graduation varies with gender. Therefore, we included *Female student* as a binary variable indicating whether the graduate is a woman (=1) or a man (=0). Furthermore, students starting a venture during the programme can be expected to continue with this venture after graduation (Lackéus and Williams Middleton, 2015). We controlled for *Track specialization* by a binary variable indicating whether the graduate followed the NVCR track (=1) or the CEIN track (=0). Previous research shows that human capital in the forms of prior experience has an influence on future start-up activity (Cooper *et al.*, 1994; Shane, 2000). We, therefore, included two control variables capturing human capital; one on prior work experience and another on prior start-up experience. *Prior work experience* was measured by a metric variable, indicating the accumulated work experience of the graduate when entering the programme measured in/by the number of years of work experience. *Prior start-up experience* was measured by a binary variable, indicating whether the graduate had on her/his own, or together with others, started a new business before entering the programme (=1) or not (=0). Students might also differ in terms of entrepreneurial passion, which influences their propensity for engaging in start-up behaviour after graduation (Karimi, 2020). To control for this, we used a four-item scale developed by Cardon *et al.* (2013) to measure *Passion for founding*. This multi-scale variable contains three items that measure intense positive feelings towards tasks and entrepreneurial activities associated with founding such as "Establishing a new company excites me", "Owning my own company energizes me" and "Nurturing a new business through its emerging success is enjoyable" (Cronbach's $\alpha = 0.86$), as well as one item measuring the identity centrality of the founder role; "Being the founder of a business is an important part of who I am". In accordance with the guidelines by Cardon *et al.* (2013) and Cardon and Kirk (2015) for treating passion as a multiplicative interaction between intense positive feelings towards an activity and the identity centrality of the individual, a final score was obtained by averaging the three feelings items into a composite measure and multiplying it by the identity centrality item, leading to a weighted score.

Finally, previous studies have emphasized the influential role the faculty plays in promoting certain entrepreneurship discussions or discourses in the classroom (Bettinger and Long, 2005; Opie *et al.*, 2019; Tatum *et al.*, 2013), which in turn may impact on how students construct entrepreneurship and evaluate the attractiveness or feasibility in engaging in start-up behaviour. In line with this, we controlled for *Programme leadership*, which is measured by a binary variable, indicating whether the entrepreneurship programme is led by a male (=0) or a female (=1) director.

Sample description

To assess whether the results from the respondents in the sample can be generalized to the total population of graduates, we conducted chi-square tests with regard to age, graduation year, gender, track, educational background, years of work experience, geographical background and start-up experience. We found a significant bias ($p = 0.004$) in the sample with respect to a higher number of responses among graduates from three graduation years (2013–2015). This is not surprising, as alumni who have graduated in more recent years can be expected to have a stronger emotional connection to the study programme and thus more likely to complete the survey. Apart from this, no major statistically significant response bias was detected.

The gender distribution in the sample is 31% female graduates and 69% male graduates, where the NVCR track accounted for 28% of female graduates, with 34% in the CEIN track. The data show that 50% of the respondents are in paid employment in an existing organization, while 40% are running their own businesses. Of those running their own businesses, 58% are full-time self-employed, while 42% combine self-employment with paid

employment in another organization, so-called hybrid entrepreneurs (Folta *et al.*, 2010; Thorgren *et al.*, 2016).

Analysis and results

We applied a binary logistic regression analysis to test our hypotheses as our research model consists of a binary-dependent variable and a collection of metric- and binary-independent variables. Before running the analysis, we performed careful observations to judge the quality of our dataset, which included control of residuals, normal probability plots and the potential presence of unequal variances. We also examined correlations, variance inflation factors and tolerance and condition indices to detect potential multicollinearity problems. All results were below the accepted maximum thresholds for logistic regression analysis (Midi *et al.*, 2010). Overall, these controls suggest that the dataset meets the assumption for the logistic regression analysis. Descriptive statistics are presented in Table 2.

To separate the effects of control and independent variables, we introduced them in different steps in the regression analysis. The control variables were first entered into an initial model, which is reported as Step 1 "control". Next, we entered the independent variables related toH1 andH2. The results are reported as Step 2 in the "control" and "independent" rows in the final model.

Table 3 presents the results from the regression analysis with odds ratios (B), standard error (SE) and Wald statistics for each covariate. A positive regression coefficient implies that an increase is associated with a higher likelihood of start-up behaviour after graduation. The predicted values (B) entail the "log-odds" that an event will occur, which is analogous to that of linear regression. The Wald statistics test, which parallels the use of the *t*-ratio in linear regression, shows whether the individual regression coefficient differs from zero. The final model (step 2, all covariates included) was statistically significant, $\chi^2(8) = 43.751$, $p < 0.000$, which indicates that a significant relationship exists between the entire set of independent variables and the dependent variable. The final model has a contribution compared to the initial model, with an increase in R^2 (Nagelkerke) of 14%. The final model explained 45% of the variance (Nagelkerke R^2) in start-up behaviour after graduation and correctly classified 78.5% of cases. The Hosmer and Lemeshow measure of the correspondence between the actual and predicted values of the dependent variable was non-significant for the model, which is another indicator of good model fit.

As can be seen from the results presented in Table 3, two of the control variables showed a significant impact on students' start-up behaviour after graduation. Students who are involved in a real-life venture as part of their studies seem to be more likely to engage in start-up behaviour after graduation. This is not surprising considering that students graduating from venture creation programmes can be expected to continue working with their venture projects after their graduation. Secondly, students with a strong passion for founding are more likely to be involved in start-up activity after graduation, which corresponds with insights found in Gielnik *et al.* (2017).

Hypothesis one states that student gender balance has a positive effect on the likelihood of students starting a new venture after graduation. The findings show a positive and significant association between student gender balance and start-up behaviour after graduation. Hence, we find support in our data that student gender balance has a positive impact on students' propensity to engage in start-up activity post-graduation.

Hypothesis two states that mentor gender balance has a positive effect on the students' likelihood of engaging in a start-up behaviour after graduation. This hypothesis was not supported, as there was no association between mentor gender balance and the likelihood of starting a new venture after graduation in our model. Thus, gender balance in the group of mentors does not seem to have any impact on the start-up behaviour of graduates. While this was not what we expected and hypothesized, the finding could be explained by the fact that

Means, SDs and correlations	1	2	3	4	5	6	7	8	Mean	SD
1. Start-up after graduation	–	–	–	–	–	–	–	–	0.47	0.50
2. Female student	−0.058	–	–	–	–	–	–	–	0.31	0.46
3. Track specialization	0.252**	−0.062	–	–	–	–	–	–	0.77	0.43
4. Prior start-up experience	0.071	−0.110	0.208*	–	–	–	–	–	0.38	0.49
5. Prior work experience	0.112	−0.018	0.212*	0.240*	–	–	–	–	4.42	3.77
6. Programme leadership (female)	0.053	0.085	0.444**	0.075	0.017	–	–	–	0.39	0.49
7. Passion for founding	0.449**	−0.033	0.251**	0.167	−0.013	0.094	–	–	29.23	13.09
8. Student gender balance	0.142	0.075	−0.457**	−0.137	−0.233*	−0.065	−0.054	–	0.41	0.04
9. Mentor gender balance	−0.183	−0.065	−0.034	0.020	0.048	0.156	−0.146	−0.140	0.26	0.11

Note(s): * Correlation is significant at the 0.05 level (one-tailed); ** correlation is significant at the 0.01 level (one-tailed)

Table 2.
Means, SDs and correlations

Step	Variables	*B*	(SE)	Wald	Start-up after graduation Nagelkerke R^2	Cox and Snell R^2	*−2 log likelihood*	χ^2 (df)
1	*Control*							
	Female student	−0.22	0.49	0.20				
	Start-up during programme	0.98	0.64	2.34				
	Prior start-up experience	−0.28	0.48	0.33				
	Prior work experience	0.07	0.06	1.17				
	Programme leadership (female)	−0.28	0.50	0.31				
	Passion for founding	0.08**	0.02	16.32	0.31	0.23	119.75	28.13 (6)
2	*Control*							
	Female student	−0.52	0.54	0.94				
	Track specialization	2.17**	0.89	7.02				
	Prior start-up experience	−0.33	0.53	0.39				
	Prior work experience	0.12	0.08	2.72				
	Programme leadership (female)	−0.49	0.58	0.71				
	Passion for founding	0.09**	0.02	16.67				
	Independent							
	Student gender balance	24.36**	7.50	10.55				
	Mentor gender balance	−2.92	2.49	1.37	0.45	0.34	104.13	43.75 (8)

Table 3.
Logistic regression

Note(s): Significance levels: * <0.05 and ** <0.01

mentors do not act as a group in relation to the students but instead develop one-to-one relationships with each student or student team. Hence, the role of the individual mentor seems to be more important for the students' development than the diversity of the mentor group composition.

The effects of improved gender balance are often assumed to be larger for women than for men, as the improvement assumes a change from a more male-dominated situation. However, our findings suggest that increased gender balance in the classroom has a positive effect on entrepreneurial behaviour in the whole student group, including both male and female graduates. Unfortunately, our sample size does not allow us to run separate models for female students, but as a robustness check, we have run the model for male students only. This analysis confirms our results. Hence, the results of increased gender balance in the classroom and its effect are not only applicable to female graduates' entrepreneurial behaviour but also to male graduates. We find that gender balance in the classroom is positively related to the likelihood of *male* students starting a new venture 2–3 years after graduation.

Discussion

In this study, we sought to examine whether the gender balance in an experience-based entrepreneurship education programme could play a role in the likelihood of students choosing entrepreneurship as a career option after graduation. Based on discussions about

gender mainstreaming (Drudy, 2008; Lombardo and Meier, 2006; Skjeie and Teigen, 2005), we built on the assumption that gender balance influences the classroom and student community discourses, hence providing inputs to the construction of entrepreneurship. The literature on how gender balance influences individuals' decisions to become entrepreneurs is almost non-existent (see e.g. Wheadon and Duval-Couetil, 2019a), so we looked beyond the main field. Our point of departure was Kanter's (1977) theory on tokenism and later discussions about the role of numeric representation for the sustainability of masculine norms (Lewis, 2006; Lewis and Simpson, 2012), together with insights from educational research on the role of both student and faculty gender balance for learning (Tatum *et al.*, 2013). In particular, we argue that gender balance is not only a numbers game (King *et al.*, 2010; Lewis and Simpson, 2012) but rather can serve as a means to change the perceptions of and discourse on who might be a prospective entrepreneur (Hytti and Heinonen, 2013; Jones, 2014), thus challenging taken for granted norms that developed over time.

To address the issue, we formulated two hypotheses suggesting that gender balance in the student group and among mentors positively relate to the likelihood of (male and female) students engaging in entrepreneurial activity post-graduation. Our findings suggest that student gender balance in class has a significant and positive impact on graduates' likelihood of engaging in start-up activity post-graduation. While previous research on the outcomes of entrepreneurship education shows inconclusive results regarding whether entrepreneurship education strengthens or weakens the intention to start a venture (Nabi *et al.*, 2017), some claim there may be a longer-term impact if the education can influence graduates' career inspiration (Souitaris *et al.*, 2007) or identity (Donnellon *et al.*, 2014). As the influence of student gender balance seems to be strong after graduation, it may indicate a relationship connected to inspirations, identity and norms that can have long-term effects.

In the interpretation of these findings, we emphasize that a master programme in entrepreneurship is an important arena where students' attitudes, values, aspirations and intentions towards entrepreneurship are shaped and their identity developed. The literature on socialization in higher education supports this interpretation (Weidman, 1989). Even though students might embark on their studies with certain pre-established norms (values, aspirations and personal goals) developed during childhood and tied to their upbringing, the educational context serves as an important arena for re-considering one's norms. In this respect, becoming an adult is a turbulent process that is often characterized by a highly formative phase full of ambiguity, instability and experimentation making students more apt to reconsider their norms (Arnett, 2000). As part of this process, socialization also influences students' identity development (Weidman *et al.*, 2014) and subsequently their career aspirations and choices (Weidman, 1989; Wolniak and Engberg, 2019). Hence, the way entrepreneurship education influences students' decision to start a venture after graduation may differ depending on the characteristics of the study programme (Nabi *et al.*, 2017) and the discourses taking place in the classroom. Our findings suggest that student gender balance is one characteristic that plays a role in this relationship. Importantly, our findings do not indicate that improved gender balance is only of importance for female students but rather that the increased likelihood of engaging in entrepreneurial behaviour after graduation applies to both male and female students.

Our findings support Kanter's (1977) theory on tokenism as we find that the numerical gender balance influences the outcomes. Hence, we extend the understanding of tokenism to the higher education context. Further, our findings indicate that tokenism does not only influence women as the underrepresented group, but both the male and female group members. We have argued that an explanation for the relationship between gender balance in class and students' engagement in entrepreneurship after graduation is that more gender-balanced groups help to broaden the construction of the entrepreneur concept, thereby influencing the socialization process in a way that makes a career in entrepreneurship

relevant for a wider range of students. As both male and female students play the role of entrepreneurs in a venture creation programme, a larger variety of entrepreneurial identities may become visible, thereby challenging the dominant masculine norm of the "heroic entrepreneur" (Hytti and Heinonen, 2013). Although the numeric representation might not replace the masculine norm (Lewis and Simpson, 2012), our findings suggest that the socialization that takes place in gender-balanced classes makes entrepreneurship a relevant career option for a larger part of the student group compared to male-dominated classes. A potential reason for this observation is that the masculine norm becomes less dominant within a gender-balanced student community. Male and female students are likely to bring in different experiences and perspectives to the ongoing discussions on entrepreneurship during the study programme, thereby contributing to a broader and more inclusive understanding of what entrepreneurship is, and can be, within the student community. This line of reasoning is supported by feminist scholars, who argue that the combination of a masculine stereotype of entrepreneurship and the fact that the majority of entrepreneurs are men singles out women entrepreneurs as "different" (Lewis, 2006). In addition, men who do not identify with the masculine norm of entrepreneurship may also be discouraged. By opening up for a broader set of identities, the likelihood that each of the students sees themselves as potential entrepreneurs increases. While our study does not offer empirical tests of such explanations, the findings suggest that these issues should be further examined to better understand how the gendered aspects of entrepreneurship can be challenged. Our findings here are analogous to previous research focusing on the share of women on corporate boards, where a critical mass of women in the boardroom has been found to be associated with various outcomes such as innovation (Torchia *et al.*, 2011) and firm performance (Joecks *et al.*, 2013). Further, the results support Wheadon and Duval-Couetil's (2019a) argument that tokenism influences participation rates in entrepreneurship.

Mentors are often seen as a potentially important source of socialization and influence on education (Riddell and Tett, 2010; Weidman, 1989). We, therefore, hypothesized that gender balance among the mentors allocated to the students would show similar effects to the student gender balance. However, this hypothesis was not supported in our analysis. An explanation might be that we have considered gender balance in the group of mentors, while students are not equally influenced by mentors as a group but rather utilize and value the individual mentoring relationships and the dyadic dynamics characterizing these relationships. Furthermore, the mentors in our study comprise industry mentors who engage with student teams on their venture development from time to time and are not present in the class on a daily basis. There might be other factors in the mentoring relationship that are more important for influencing the student potential start-up behaviour, such as the mentor's industry-specific knowledge or ability to provide feedback (Hägg and Politis, 2017), variables that are more related to the individual in question. The present study does not capture the mentor-mentee dyad that could shed more light on how gender plays a role in graduates' start-up behaviour. Previous studies have suggested that a same-sex mentoring relationship can have a positive influence on outcomes, particularly for the underrepresented sex (Bettinger and Long, 2005). Furthermore, students may find other role models outside the structured education where mentors develop specific ties to their mentees (St-Jean and Audet, 2009). Moreover, as pointed out by Riddell and Tett (2010), it might be more relevant to examine the way gender is performed rather than counting the presence of men and women as role models.

Conclusion

Returning to the research question: Does gender balance in entrepreneurship education influence start-up behaviour after graduation? the main finding shows that increased gender

balance in the classroom has a positive effect on entrepreneurial behaviour in the whole student group. This fairly simple relationship has important implications for research as well as for practice.

While the gender imbalance among students in entrepreneurship education has achieved some interest in the literature, the focus has mainly been on explaining the reasons for, rather than the consequences of, the lack of gender balance. Previous studies have emphasized differences between young men and women's knowledge, attitudes or intentions (e.g. Kourilsky and Walstad, 1998; Petridou *et al.*, 2009) or gender bias in presentations of entrepreneurship education (Jones and Warhuus, 2018) as reasons for gender imbalance. While analyses have demonstrated gender bias in the discourses on entrepreneurship education (Jones, 2014) and in entrepreneurship education content (Leffler, 2012), there is little evidence on the consequences of gender bias, nor how it can be addressed. Our findings point directly to this gap by revealing that failure to recruit a fairly gender-balanced student group has negative consequences for the overall outcomes of an entrepreneurship education programme. Hence, improved gender balance is not only beneficial to the underrepresented gender. These insights have important implications for educators in deciding the efforts they should devote to recruiting female students to entrepreneurship education, such as by adjusting information and marketing material and communication, examining if recruitment policies are gender-biased and more directly directing information towards female students.

Limitations and implications

This study is of an exploratory nature and has limitations. Most importantly, while our findings indicate a positive relationship between increased gender balance among students and their likelihood of engaging in entrepreneurial activities after graduation, the analyses do not provide insights into the processes through which this effect occurs. We suggest that gender balance in the classroom influences the discourses of entrepreneurship taking place in the classroom and within the student group. However, future studies are needed to examine the gendered processes of entrepreneurship education and investigate how they are influenced by the gender balance, as well as how an understanding of entrepreneurship as a relevant-for-me career outcome is created. Issues such as gender balance among the educators, gender representations in the course literature, in teaching cases and examples are also likely to impact the gendered understandings of entrepreneurship developed in the classroom.

Moreover, while our results indicate a relationship between gender balance in the classroom and entrepreneurial activity post-graduation, they do not account for the multitude of factors influencing individuals' decision to become an entrepreneur, such as market opportunities, resource access, alternative employment opportunities and so forth. In particular, we do not take into account the gendered structural mechanisms that underpin the assumption that fewer women than men make entrepreneurship a career choice. Not only the education but also factors in the communities where students are embedded after graduation are likely to influence their career choices.

Another issue is that the sample is limited when it comes to testing both sides of possible gender imbalance on start-up behaviour post-graduation. In this respect, we are unable to account for situations when there is a majority of women in class in our analysis. Even if the skewed sample reflects the reality of entrepreneurship education, it is nevertheless important to keep this limitation in mind when interpreting the findings.

In addition, our study is conducted in a Swedish university context, i.e. one of the most gender-equal countries in the world (World Economic Forum, 2020). Although students were of many nationalities and cultures, we cannot account for how the Swedish context influenced our findings. Replications in other geographical settings would, therefore, be of interest. Similarly, replications in other types of entrepreneurship education programmes, as well as

different education levels, would help examine the boundaries of the results. Finally, we have considered start-up activity up to three years after graduation as our outcome measure. It has been recently acknowledged that outcomes of entrepreneurship education can be broader than merely start-up activity (Duval-Couetil, 2013; Nabi *et al.*, 2017) and longer-term outcomes should also be studied.

Contributions to the literature

Despite these limitations, the results of this study make several contributions to the literature. Firstly, they add to the scarce literature on gender in entrepreneurship education. While previous studies have examined whether male or female students benefit the most from entrepreneurship education (Packham *et al.*, 2010; Shinnar *et al.*, 2014; Westhead and Solesvik, 2016) or analysed the experiences of female students in particular (Cochran, 2019), our results suggest that we should go beyond analysing gender differences in inputs or outputs of entrepreneurship education to examine the gendered aspects of the education itself. We have examined only *one* way in which education is influenced by gender, focusing on gender balance among students and mentors. However, our results suggest that examinations of gender in the classroom can provide important insights into how entrepreneurship education should be designed to produce the best results for both male and female students. We encourage future studies of gendered processes not only in the classroom but also in the university ecosystem, as well as gendered analyses of curriculum and teaching (Jones, 2014; Leffler, 2012).

Secondly, the results support theories suggesting that the socialization of students is an important contribution made by higher education (Padgett *et al.*, 2010; Weidman, 1989; Weidman *et al.*, 2014). Three decades ago, Scherer *et al.* (1990) pointed to gendered socialization as important for recruitment to entrepreneurship. The findings from our study support this argument. The impact of education on students seems to go beyond the explicit course content and skills that they learn, also being derived from inspirations, norms and identities developed during the studies. That said, research on gender balance in the classroom suggests that gender balance leads to a more open and inclusive learning environment, something which facilitates more active student participation in the classroom (Tatum *et al.*, 2013).

Thirdly, the results of this study also contribute to the ongoing debate on the gendered construction of entrepreneurship and its implications (Marlow and Martinez Dy, 2018). We have studied the influence of a balanced presence of women and men in education, representing an arena where constructions of entrepreneurship are shaped and values, inspirations and identity towards entrepreneurship are developed. The dominant masculine understanding of entrepreneurship promoted in policy, the support system and education narrow the definition of the "normal" entrepreneur to the extent that it does not fit many men (Rumens and Ozturk, 2019). Hence, the gendered construction of entrepreneurship may have a negative influence on the entrepreneurial activity of men *and* women, and, importantly, the findings suggest that gender balance in a relevant community can play a role in reducing this influence.

Consequently, the results of this study feed into the debate on critical mass when it comes to the representation of women as a minority group in the business domain. In line with the theory of tokenism originally developed by Kanter (1977), our study suggests that it is not sufficient that women are present in a group, but there needs to be a critical mass of women to avoid tokenism. When there are only a few women present, they tend to be defined as "different", thereby giving rise to stereotypes (Shore *et al.*, 2011). However, when the gender composition becomes more balanced, stereotypes can be challenged and diversity can contribute to positive outcomes (Joecks *et al.*, 2013; Torchia *et al.*, 2011). This view supports the findings of King *et al.* (2010) indicating that numeric representation might influence the

psychological climate in the group and thereby influence outcomes. Hence, although a different context, the results of this study add to previous studies suggesting that gender balance on corporate boards (Campbell and Mínguez-Vera, 2008), in teams (Hoogendorn *et al.*, 2013), or in the workforce (Herring, 2009) has an impact on outcomes.

However, importantly, we do not suggest that the masculine norm and dominance in entrepreneurship can simply be altered by recruiting more female students to entrepreneurship education. Considering that students entering entrepreneurship education have already seriously considered entrepreneurship as a possible career, the insignificant difference in start-up behaviour after graduation between male and female students cannot be generalized outside of graduates self-selecting into entrepreneurship education Furthermore, many factors not tested in our study might play a role in determining who engages in start-up behaviour after graduation, suggesting that this can also be influenced by class size, the pedagogical approach and student background characteristics. The results merely demonstrate that improved gender balance has an influence on the choice of an entrepreneurship career for both male and female graduates, which is why it is important to consider gender balance when discussing a largely and historically male-dominated phenomenon-like entrepreneurship.

Finally, this study also has practical implications for educators and policy makers. The entrepreneurship classroom tends to be dominated by male students (Cochran, 2019; Jones and Warhuus, 2018). This study suggests that gender balance among students matters, not only in terms of who gets access to entrepreneurship education but also in terms of the outcomes of the education. Hence, to create better conditions for developing a gender-balanced entrepreneurial community universities should have an interest in taking measures to increase the pool of female students who apply for entrepreneurship education. However, recruiting more female students is not a straightforward task and here the programme directors play an important role when selecting applicants to create a balanced class. Early-stage socialization processes leave young women less primed to see entrepreneurship as a potential career (Petridou *et al.*, 2009) and they may be influenced by older female students' experiences of entrepreneurship education as an arena where women struggle (Cochran, 2019). Hence, an effort is needed to reduce the gendered understanding of entrepreneurship from an early age, as well as for providing entrepreneurship education programmes that are attractive for women and for men.

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