Entrepreneurial intention of Danish students: A correspondence analysis
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Abstract
Purpose. This paper purpose is to describe the entrepreneurial intention (EI) among Danish university students applying the theory of planned behaviour (TPB).

Design/methodology/approach. Using cross-sectional data from the Danish GUESSS 2013 (n = 1,027) the analysis is based on a joint correspondence analysis (JCA) investigating the relationships between the variables.

Findings. Results indicate that students prefer a career as employee showing a low EI. Both very high and very low EI are related to very high/low self-efficacy and perception of entrepreneurial climate and learning.

Research limitations/implications. The study points to an improvement of entrepreneurship education through customized offers dependent on the student’s level of EI and entrepreneurial self-efficacy.

Originality/value. Moreover, this study has proven that the JCA is a useful method to analyse the relationship between EI and other related variables in an exploratory study.

Keywords: entrepreneurial intention, entrepreneurial education, students, Denmark, correspondence analysis

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Introduction

The importance of entrepreneurial activity as a driver of employment opportunities, (technological) innovation and national as well as international competitiveness has been widely acknowledged (Nabi and Liñán, 2013; Wennekers et al., 2005). Thus, entrepreneurship is one of the drivers of economic growth (Carree and Thurik, 2003) and in the past decade, entrepreneurship conditions have become a focus for policy-makers (Schøtt and Jensen, 2008). This has led to investments in various activities in countries around the world to foster entrepreneurial activities and entrepreneurship among young people (World Economic Forum, 2009). Amongst others, Denmark invested in its entrepreneurship education - especially at the university level (Schøtt, 2009). Policy-makers expected that investments in entrepreneurship in general and entrepreneurship education in particular increase students’ knowledge, motivation and intention to start a new business. However, these investments seem not to show a particular impact. Even if new venture creation has been slightly increasing in Denmark since the financial crises, the level is still below pre-crisis (OECD, 2015), a trend that is supported by the Global Entrepreneurship Monitor (GEM) reports. According to the GEM report 2014, entrepreneurial intention (EI) in Denmark is considered as the lowest among European countries (Singer et al., 2015). This might be the result of lower perceived capabilities and a higher fear of failure even though the opportunities were observed to be higher in Denmark compared to the average of European economies (Schøtt, 2011; Singer et al., 2015). Furthermore, entrepreneurship can be seen as a social activity that is influenced by the social environment (Román et al., 2013). Thus, entrepreneurial activity can be hindered or facilitated by socio-cultural factors (Krueger et al., 2013). Schøtt (2011) argues that welfare state models and national cultures as contextual factors enable us to explain different forms of entrepreneurship. The Danish culture characterized as collaborative and egalitarian but also change-oriented and individualistic enhances entrepreneurial activity in general whereas the welfare state model might direct this entrepreneurial ambition to innovations in organisations (Kvist and Greve, 2011).
Simultaneously to the attention by policy-makers EI has become a rapidly evolving research field (Liñán and Fayolle, 2015). One major stream of research has integrated the theory of planned behaviour (TPB) (Ajzen, 2002) from the area of social psychology analysing behaviour in general and personal and environmental factors that directly or indirectly influence beliefs and attitudes to effective action (Linán et al., 2013; Liñán and Chen, 2009). Most studies, that investigate determinants of EI, use correlations or regression analysis as well as structural equation modelling to determine the factors that influence EI (Gelard and Saleh, 2011; Kristiansen and Indarti, 2004; Linán et al., 2013; Shneor et al., 2013; Turker and Selcuk, 2009). This study uses a different methodological approach. To determine the factors influencing EI of students, a joint correspondence analysis (JCA) is applied (Greenacre, 1988) thereby using data gathered through the Danish Global University Student Spirit Survey (GUESSS) that contains responses from 1,027 students. JCA is part of a group of descriptive methods and a multivariate extension of the correspondence analysis (CA). It is conceptually similar to the principal component analysis and allows investigating the pattern of relationships of three or more categorical variables. An important feature is the multivariate treatment of the data through multiple categorical variables. An advantage is the graphical display. A JCA uses a geometrical method by locating each variable of analysis as a point in a low-dimensional space.

In addition to a different methodological approach, this study operationalizes EI through an aggregated measure. The GEM survey investigates EI as the percentage of individuals involved in any stage of entrepreneurial activity. While this approach is an objective and a reliable measure, a potential weakness of the GEM data is that individuals who seriously think about becoming an entrepreneur at some point in their lives but have not pursued any activities into this career path are regarded as non-entrepreneurs. To account for this, this study uses an EI scale developed by Liñán and Chen (2009) to measure the degree by which an individual considers to pursue a career as an entrepreneur.
The objective of this paper is twofold: First, it aims to explore students’ career choices, EI and related contextual factors influencing entrepreneurial activities of students in Denmark - a Nordic welfare country. Second, this paper investigates the patterns of EI using a multivariate extension of correspondence analysis.

The article is organized as follows. Section 2 describes the theory of planned behaviour as the theoretical framework used to explain the relationship between the EI and other variables. In addition, it summarizes studies on EI and influencing contextual variables. Section 3 introduces the data used and the applied joint correspondence analysis. Section 4 presents the results. Finally, Section 5 discusses the findings and Section 6 presents a conclusion.

**Theoretical framework**

The theory of planned behaviour (TPB) (Ajzen, 2002) is - not only in social psychology - one of the most influential models for the explanation of human behaviour. The theory assumes and empirical studies have also shown this, that behavioural intention is the best predictor of human behaviour (Ajzen et al., 2009). Within the entrepreneurship research, this also applies to EI (Fitzsimmons and Douglas, 2011; Kautonen et al., 2013; Liñán and Chen, 2009). It is particularly important to examine behavioural intentions with regard to the phenomena such as entrepreneurial behaviour because this kind of behaviour is rather rare, difficult to observe and it takes place in an unpredictable period (Krueger and Carsrud, 1993).

According to the TPB behavioural intention is influenced by three conceptually independent factors: attitudes towards the (specific) behaviour, subjective norms and perceived behavioural control, which is the expectation of how easy or difficult it is to perform the behaviour (Ajzen, 2002). *Attitudes towards the behaviour* refer to settings that specifically apply to the contemplated behaviour. They describe the attractiveness, to perform the specific behaviour. Several studies in entrepreneurship research have validated the
relationship between entrepreneurial attitude and the intention to pursue a career as a founder (Thomas et al., 2014).

The conviction of a person, how important people in the social environment - for example, parents, friends and fellow students - perceive and evaluate a particular behaviour, is determined by subjective norms (Ajzen, 2002). These beliefs can be as important as the attitudes towards the behaviour to predict the behavioural intention. Recently, Schlaegel and Koenig (2014) confirmed this assumption in a meta-analysis.

The third factor is the perceived behavioural control: the conviction how easy or difficult it is to execute a particular behaviour. It was added to the theory to take into account situations in which people can influence the intended behaviour only slightly or not at all (Ajzen, 2002). Studies have shown that perceived behavioural control is a strong predictor of entrepreneurial behaviour (Shook et al., 2003). According to Ajzen (2002) perceived behavioural control involves two components: perceived self-efficacy and perceived controllability. Self-efficacy is based on Bandura’s (1997) social cognitive theory and refers to the perception, how difficult or easy it is to perform a specific behaviour. Self-efficacy is measured context-sensitive, so that entrepreneurial self-efficacy will be used in the present study (McGee et al., 2009). A positive relationship between entrepreneurial self-efficacy and EI has been confirmed by numerous studies (Fitzsimmons and Douglas, 2011; Thomas et al., 2014). Perceived controllability describes the extent to which a person believes that the execution of a behaviour can be influenced by him-/herself or not (Ajzen, 2002). Perceived controllability summarizes the cognition about various resources (for example, time, money, skills) (Ajzen, 2002) and is frequently measured with locus of control (Rotter, 1966). Internal locus of control occurs when a person believes that a positive or negative event is the consequence of his or her own behaviour. If an event is perceived as independent from the own behaviour, meaning that the person believes that uncontrollable external factors such as influential people and forces play a role, then it is external locus of control. High levels of
general internal locus of control are thereby positively related to the desire to pursue a career as an entrepreneur (Mueller and Thomas, 2001; Zellweger et al., 2011).

In addition to variables of TPB various studies are investigating the influence of background variables on career choice and EI. Liñán and Fayolle (2015) conducted a systematic literature review and identified five groups of studies dealing with EI and influencing variables: 1. core EI models, 2. personal-level variables, 3. entrepreneurship education, 4. context and institutions and 5. entrepreneurial process. For this study, the first three groups are relevant. The core EI model forms the TPB presented above. Among the personal-level variables, psychological variables such as risk taking and demographic predictors like age, gender, the field of study and the family background are of interest. Furthermore, the design, content, and effects of entrepreneurship education are of interest and play a major role in academic research on EI (Lima et al., 2014).

Personality characteristics and their impact on various areas of life are - despite some criticism - popular research variables. In addition to the Big Five and their impact on EI (Zhao et al. 2010), specific personality traits such as the above-mentioned general internal locus of control as part of the TPB and risk propensity are considered. Segal et al. (2005) show in their study a positive relationship between entrepreneurial risk-taking and a higher propensity to become an entrepreneur. Nabi & Liñán (2013) examine entrepreneurial risk perception, entrepreneurial motivation and EI. Using structural equation modelling they show a relationship between entrepreneurial risk perception and entrepreneurial motivation. Entrepreneurial motivation depends, in turn, on EI. The effect of entrepreneurial risk perception on EI is thus mediated by the entrepreneurial motivation.

Although Ajzen (2002) in her TPB assumes that demographic variables have only an indirect influence on the behaviourial intention, several studies have examined the relationship with entrepreneurial behaviour. EI and gender differences are an often-addressed topic and these studies form by far the largest group of studies in Liñán and Fayolle’s (2015) literature
review that deal with one single research topic. For instance, Mazzarol et al. (1999) show that the probability to found a new company is lower for women than for men. Men also show a more positive attitude towards entrepreneurship and have a higher EI than women (Strobl et al. 2012). The results of a longitudinal study of the impact of family background and gender on interest in small firm ownership indicate that gender is the primary influence with males showing a higher level of interest than females (Matthews and Moser, 1996). The same study showed that individuals EI changes with age because it might take some time to develop an interest to be one’s own boss and to overcome the anxiety of risking the loss of investment (Matthews and Moser, 1996).

Educational background is thus a relevant variable when it comes to EI. Wu and Wu (2008) show that educational level, academic major and academic achievement influence personal attitude that in turn has an impact on EI. In addition, does the academic major affect EI - mediated by perceived behavioural control. Wang and Wong’s (2004) study found educational background, amongst others, to affect entrepreneurial interest.

The family background also plays an important role in students’ career choice (Jodl et al., 2001) and subsequently also for their EI. Previous research has shown that a higher proportion of students from families with self-employed parents choose to become entrepreneurs (Lasita et al., 2012). Parents as role models influence the entrepreneurial career behaviour or interest of their children (Matthews and Moser, 1996; Scherer et al., 1989; Wang and Wong, 2004). Bhandari (2012) shows the direct link between the occupation of parents and the EI of their children.

The majority of studies on entrepreneurship education focus on entrepreneurship education programmes (EEP): The characteristics of the participants, effects of EEP and the evaluation of EEP (Liñán and Fayolle, 2015). The results are not always clear. Lima et al. (2014) therefore distinguish two lines of research: 1. studies with positive effects and 2. studies with no or a negative effect on entrepreneurship and EI. Peterman and Kennedy (2003) show
that an enterprise education program can develop a positive behaviour among the participants towards entrepreneurship. Oosterbeek et al. (2010), however, come to a contrary conclusion. The evaluated study programme did not have the intended effects: Compared with the control group, the EI of the students who have participated in the programme, is negative and the self-assessment of their entrepreneurial skills is not significant. However, it is to be noted that students can benefit from an entrepreneurship education - regardless of whether they want to start a business or not. In the context of entrepreneurship education, they accumulate specific knowledge in the field of entrepreneurship, so they can also use this knowledge when they pursue a career path in a company or public administration.

The theoretical framework is summarised in Figure 1. EI is according to the TPB dependent on the attitude towards entrepreneurship, subjective norm and perceived behavioural control (containing the two sub-factors perceived controllability or locus of control and perceived entrepreneurial self-efficacy). The framework is embedded into the environment including several contextual factors such as personal-level variables (age, gender, educational and family business background, individual risk perception) and the entrepreneurship education.

**Methodology**

**Sample**

The sample used in this analysis was generated in the GUESSS² project in 2013. Several studies have used GUESSS data to study students’ entrepreneurial and succession intentions (Bernhofer and Han, 2014; Laspita et al., 2012; Sieger and Monsen, 2015) and

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² Global University Entrepreneurial Spirit Students’ Survey (GUESSS) investigates students’ career choice intentions in 34 countries. See http://www.guesssurvey.org/ for further information.
student samples are commonly used in entrepreneurial research (Krueger et al., 2000). This allows a prospective view without survivor bias because students have not started professional careers yet (Carter et al., 2003). A Swiss and a German university initiated the GUESSS project in 2003. Students are surveyed biannually in at the moment 34 countries around the world (Sieger et al., 2014). GUESSS has three main goals: 1. systematic and long-term observation of EI and activities of students; 2. identification of antecedents and boundary conditions in the context of new venture creation and entrepreneurial career in general, and 3. observation and evaluation of universities’ activities and offerings related to the entrepreneurial education of their students (for more details see Sieger et al. (2014)). In the sixth data wave, carried out in 2013, Denmark participated for the first time. A core team consisting of senior faculty members of a major Swiss University developed the comprehensive questionnaire. In spring 2013, an email invitation was sent out to all approx. 28,000 students at the University of Southern Denmark (SDU). 1,027 responses could be collected, which represents a response rate of about 3.7 per cent. As this study wants to investigate the entrepreneurial activities and motivation of Danish students, all exchange students (21) and persons who did not indicate whether they were exchange students or not (12) were excluded. This reduces the data set to 994 students.

Measures and data analysis

Entrepreneurial intention. Students’ entrepreneurial intention is captured through six items where students were asked to indicate their level of agreement with their general intention to become an entrepreneur in the future (Liñán and Chen, 2009). A sample item is ‘I am ready to do anything to become an entrepreneur’. Cronbach’s Alpha reached 0.96.

Theory of planned behaviour variables. Attitude toward behaviour is based on Liñán and Chen’s (2009) five items that capture students’ attitude toward becoming an entrepreneur. A sample item is ‘Being an entrepreneur implies more advantages than disadvantages to me’. Cronbach’s Alpha reached 0.94. The concept of ‘subjective norm’ captures the reaction that individuals expect from close peers if certain behaviour is executed. Following Liñán and
Chen (2009) subjective norm is captured using the question how three groups of people (close family, friends and fellow students) react if they would pursue a career as an entrepreneur. Cronbach’s Alpha reached 0.82. Perceived behavioural control is captured with two dimensions: perceived controllability and self-efficacy. The perceived controllability dimension is captured using a general locus of control measure based on (Rotter, 1966). A sample item is ‘I am usually able to protect my personal interests’. Cronbach’s Alpha was 0.74. The self-efficacy dimension is a context related measure, capturing entrepreneurial self-efficacy with four items (Souitaris et al., 2007). A sample item is ‘For me, being self-employed would be very easy’. Cronbach’s Alpha was 0.88.

**Contextual variables** cover three areas:

1. **The university context**: The university context is captured with the entrepreneurial climate dimension and the entrepreneurial learning dimension. Entrepreneurial climate is measured with three items based on Geißler (2013) and Franke and Lüthje (2004). A sample item is ‘The atmosphere at my university inspires me to develop ideas for new businesses’. Cronbach’s Alpha was 0.89. Entrepreneurial learning was captured measuring students’ learning progress relating to entrepreneurship during their studies. The five-item measurement is based on Souitaris et al. (2007) perceptual learning scale. The students were asked in general if the courses and offerings they attended increased their ‘understanding of the attitudes, values and motivations of entrepreneurs’ or enhanced their ‘ability to identify an opportunity’. Cronbach’s Alpha reached 0.91. In accordance with Laspita et al. (2012) entrepreneurship class were also included with a dummy variable (0 = no class, 1 = attended at least one entrepreneurship course).

2. **The family context**: The question if the student's father, their mother, or both of them are currently self-employed and/or major shareholders of a firm were used to capture the family context. The variables were recoded to a dummy variable (0 = no entrepreneurial parents, 1 = entrepreneurial parents).
3. The social context is covered by the subjective norm, which is part of the TPB. Another important issue in the cultural context is to what extent becoming an entrepreneur is regarded as risky. Perceived risk is a key aspect of entrepreneurship and is related to cultural dimensions such as the level of uncertainty avoidance in a society (Hofstede, 2001). Students were asked to indicate their level of agreement with three items (Pennings and Wansink, 2004). Cronbach’s Alpha reached 0.82.

Items in all scales were measured on a 7-point Likert scale ranging from 1 (strongly disagree/not at all) to 7 (strongly agree/very much).

Background variables. As mentioned above several background variables have been identified to influence EI. The student’s age is included as a categorical variable (1 = younger than 24 years, 2 = between 25 and 30 years, 3 = over 30 years). For gender this study uses a dummy variable (0 = male, 1 = female). Field of study is included as a categorical variable with four categories: 1 = Business, Economics and Law (BECL), 2 = Natural Science (NSM), 3 = Social Science (SSC) and 4 = other field of studies.

For the applied joint correspondence analysis three supplementary (passive) variables were included. Supplementary variables are variables that are mapped into the graphical overview of the correspondence analysis without influencing the identified dimension. Whether the students are already in the phase of founding their own business or not (nascent entrepreneur) were included as a passive variable. In addition, the relationship between the included variables and the students’ career choice intentions right after studies and five years after graduation were of interest. Both variables were included as categorical variables with three values: 1 = employee, 2 = founder and 3 = successor.

Results
In the following, first, some descriptive results of the Danish GUESSS study are presented using the above-indicated theoretical considerations as a basis. In a first step, the description of the sample focuses on students’ career choice intentions in general, EI in
particular and TPB related variables as well as the contextual variables. The results are reported across the background variables gender, age and fields of study.

In a second step, this study examines the relationship between EI, the TPB variables and the contextual variables with the help of a joint correspondence analysis or more precise, how the observed variables correspond with each other.

Sample description

The sample consists of more female (60.9 per cent) than male (39.1 per cent) students. Respondents’ mean age is 24.9 years. One-third of the respondents (33.2 per cent) studies Natural Sciences and Medicine (NSM), followed by Business, Economics and Law (BECL) (25.6 per cent) and Social Sciences (SSC) (25.5 per cent). Concerning the students’ entrepreneurial activities, only 6.9 per cent are nascent entrepreneurs, meaning those students currently in the process of starting a business and becoming self-employed. In addition, 4.7 per cent are already running their own business or are self-employed (active entrepreneurs). Students whose parents are self-employed and/or are majority owners of a business are the so-called potential successor. This share of students with family business background among the sample is 25.1 per cent.

Career choice intentions

Students were asked, which career path they do intend to pursue right after completion of their studies, and which career path five years after completion of studies. Most students (82.7 per cent) want to work as an employee in a paid job right after studies. When it comes to the type of employment 19.7 per cent of Danish students want to work for a small firm and 17.4 per cent in medium-sized firms. Only 11.8 per cent intend to work in a large firm. Every fifth student (20.9 per cent) wants to work in the public sector right after studies.

Referring to five years after completion of their studies, there are some major shifts in the students’ career intentions: Fewer students intend to work in small (8.4 per cent) and in
medium-sized firms (14.6 per cent) and in the public sector (13.0 per cent). By contrast, working for a large firm becomes more attractive (19.1 per cent).

Concerning entrepreneurship as a career choice, a minor share of students wants to follow this career path right after studies. Only 3.0 per cent intend to become a founder working in their own firm and 0.5 per cent want to become a successor in the family or some other firm. After five years 1.3 per cent of the students prefer to be a successor, which is still very low considering that 89 per cent of all firms in Denmark are family owned (Bennedsen et al., 2004). Five years after graduation founding an own firm is becoming a more preferred career choice intention among the students (15.6 per cent). Most of these students wanted to be an employee right after studies (12.7 per cent). This pattern – at first to be an employee and after this become a founder – is consistent with the international sample (Sieger et al., 2011, 2014).

**Entrepreneurial intention**

On average the EI is quite weak (M = 2.43, SD = 1.70). An analysis based on the fields of study shows the expected differences. The average EI is highest for BECL students (M = 3.08, SD = 1.78), followed by students in other study fields (M = 2.63, SD = 1.87) and NSM students (M = 2.20, SD = 1.57). The lowest EI can be found among SSC students (M = 1.99, SD = 1.47). An ANOVA, comparing EI in the four groups, indicate a significant effect \([F(3, 920) = 20.15, p = 0.000]\). Post hoc comparison using Tukey HSD test showed that only students from other study fields and NSM students did not differ statistically significant in their EI. Students younger than 25 years reported a higher EI (M = 2.48, SD = 1.70) than students between 25 and 30 years (M = 2.27, SD = 1.63) and over 30 years (M = 2.21, SD = 1.54). The differences between the two groups of older students compared to the youngest are also significant \([F(2, 698) = 1.65, p = 0.000]\). A test for gender differences reveals a significant lower mean value \([t(921) = 5.80 p < 0.05; d = 0.392]\) for female students (M = 2.19, SD = 1.60) compared to male students (M = 2.83, SD = 1.76). However, the general picture shows that the EI is rather low – independent from gender, age or fields of study.
Theory of planned behaviour variables

Similar to EI entrepreneurial attitude is low (M = 3.13, SD = 1.80). Entrepreneurial attitude is significantly higher for male students (M = 3.60, SD = 1.80) and for BECL students (M = 3.78, SD = 1.77). Students report a high subjective norm (M = 5.37, SD = 1.17), which does not differ significantly across gender and age. Only among the fields of study students differ significantly [F(3, 919) = 3.75, p < 0.01]), but only with a very small effect size (f = 0.095).

Results for perceived controllability (locus of control) across gender, age and fields of study show no significant differences with a high average level among students (M = 4.84, SD = 1.15). Again, only among the fields of study students differ significantly [F(3, 919) = 3.88, p < 0.01]) with BECL students having the highest perceived controllability (M = 5.05, SD = 1.10), but with a very small effect size (f = 0.097). The degree of entrepreneurial self-efficacy is - similar to the other entrepreneurial measure - rather low among the students (M = 3.66, SD = 1.40). Male students’ self-efficacy (M = 3.84, SD = 1.35) is significantly higher than females’ (M = 3.54, SD = 1.43) with a rather small effect size [t(919) = 3.24 p < 0.05; d = 0.219]. Significant differences among students were also found for fields of study [F(3, 918) = 8.82, p = 0.001; f = 0.160]. BECL students indicate the highest entrepreneurial self-efficacy (M = 4.03, SD = 1.35), SSC students the lowest (M = 3.38, SD = 1.39).

The above results indicate that students in general rate the different TPB factors as rather low. However, with one exception: subjective norm. The majority of the students experience a high degree of support from close peers to pursue a career as entrepreneur independent from gender, age and study fields.

Contextual variables

The majority in the sample (81.0 per cent) have not attended a course on entrepreneurship so far. Only 2.7 per cent study a specific programme on entrepreneurship; 13.4 per cent have at least one compulsory course as part of their study and 7.1 per cent have attended at least an elective entrepreneurship course.
The entrepreneurial climate is rated as neutral (M = 3.30, SD = 1.40). It is most positive among BECL students (M = 3.41, SD = 1.41). The other study fields do not differ significantly: NSM (M = 3.26, SD = 1.48), SSC (M = 3.20, SD = 1.28) and other study fields (M = 3.37, SD = 1.37) have similar average entrepreneurial climate levels. Gender and age differences are not to be found.

Respectively, entrepreneurial learning is also perceived as rather low (M = 3.07, SD 1.49). The average entrepreneurial learning is perceived highest among BECL students (M = 3.77, SD = 1.41). The other fields of study do not differ very much: Entrepreneurial learning among NSM and SSC students is on average M = 2.75 (SD = 1.45) and M = 2.79 (SD = 1.36), respectively. These differences are also significant [F(3, 979) = 28.93, p < 0.001] with a small effect size (f = 0.292). Male students rate the entrepreneurial learning significantly higher (M = 3.32, SD = 1.48) than female students (M = 2.91, SD = 1.48), but with a small effect size [t(980) = 4.17 p < 0.05; d = 0.272].

Overall, 23.8 per cent of the students have a father, mother or both parents who are self-employed. In detail, 5.3 per cent of all respondents report that both parents are self-employed. A similar share of 4.8 per cent has a self-employed mother, 13.7 per cent a self-employed father.

Concerning entrepreneurship as a career choice 24.7 per cent of the students with entrepreneurial parents intend to be a founder or successor in their parents’ (or in another) firm five years after graduation. This share is only 14.2 per cent for students without entrepreneurial parents. While it is easier for students with entrepreneurial parents to take over their parents’ firm one day, this study also observes a difference between the share of students who intend to found their own firm (20.3 per cent) and without an entrepreneurial family background (13.9 per cent).

Based on the TPB this study investigates the subjective norm or social pressure that is carried out by close peers. Another social and cultural key factor of entrepreneurship is
perceived risk. Given the low EI among the students, it is not surprising, that on average the perceived risk to start an own business was rated quite strongly (M = 5.05, SD = 1.28). The students do not differ across gender and age with regard to entrepreneurial risk. Only across fields of study differences are significant [F(3, 918) = 2.92, p < 0.05)] with a marginal small effect size (f = 0.079), whereupon BECL students have the lowest entrepreneurial risk perception (M = 4.96, SD = 1.24) compared to students from other study fields with the highest rating (M = 5.31, SD = 1.18).

To summarize, students’ EI, their attitude towards entrepreneurship as well as their perceived controllability and entrepreneurial self-efficacy is low. This applies also to contextual factors related to the university education: Students perceive only a neutral level of entrepreneurial climate and learning at their university. Exceptions are the subjective norm and perceived entrepreneurial risk. Students, especially BECL students, seem to have a higher entrepreneurial activity and perception compared to students from other fields of study.

**Correspondence analysis**

In order to summarize the empirical findings and discover any relations between EI and possible determinants, this study presents a graphic overview using the joint correspondence analysis (JCA) (Greenacre, 1984, 1988), a procedure based on the simple correspondence analysis (CA). The idea of the CA is related to the main component analysis and allows presenting the correlations between the categories of cross-classified tables within the area. The JCA applies to contingency tables involving three or more variables or sets of categories. For both - CA and JCA - in the graphical overview physical closeness, or more precisely, the common position of the categories in distance from the centre of the presentation is to be interpreted as the correlation or correspondence of the categories. The dimensions (or axes in the graphic overview) determined in order to present the correlations present the variations of the input data with decreasing amounts of explanation. In order to
perform a correspondence analysis, all scale values presented above were recoded from mean scores into integer values (1 to 5).3

The JCA shows a three-dimensional solution explaining 80.8 per cent of the principal inertia. The first axis (Dim. 1) absorbs 60.4 per cent of the variance, the second axis (Dim. 2) 13.8 per cent and the third axis (Dim. 3) 6.6 per cent. Figure 2 shows the results for the first two dimensions. The size of the circles and triangles show the variables contributions to dimension 1 and 2, respectively (cf. Tables A.1 and A.2). The positive side of dimension 1 is characterised by non-entrepreneurial students in the field of social sciences with very low EI, very low entrepreneurial attitude and very low entrepreneurial self-efficacy. This side of the dimension is also dominated by students without entrepreneurial parents and by those students who have not participated in any entrepreneurial class. The negative side of the first axis is characterised by entrepreneurial students with very high EI and attitude and very high entrepreneurial self-efficacy. Contrary to the positive side of the dimension the negative part is explained by BECL students who have entrepreneurial parents and who have participated in entrepreneurial classes. Not surprisingly, do these students perceive a very positive entrepreneurial climate and learning at their university.

Figure 2 about here

Dimension 2 distinguishes those students with low EI and medium entrepreneurial attitude on the positive side from those students with both extreme characteristics. The negative side of dimension 2 is characterised by students who from one perspective have a very high EI, entrepreneurial attitude, entrepreneurial self-efficacy as well as locus of control and perceive a very high entrepreneurial learning. By contrast, students with very low entrepreneurial

3 The scales’ mean scores were recoded the following: 1 to 2.2=1 “VH_var” (very low values), 2.21 to 3.4=2 “L_var” (low values), 3.41 to 4.6=3 “M_var” (medium values), 4.61 to 5.8=4 “H_var” (high values) and 5.81 to 7=5 “VH_var” (very high values).
attitude, entrepreneurial self-efficacy and a very low perception of entrepreneurial learning explain the negative area of the dimension. Most of the variables in dimension 2 explain some of the variance in this dimension. They do, however, have an explanatory contribution in the first dimension.

The variation of EI is the focal point. Looking at the closeness of variables to the different levels of EI Figure 2 shows that a very low EI is related to a low perceived controllability (locus of control), a medium subjective norm and low entrepreneurial self-efficacy. They also perceive a very low entrepreneurial learning and very negative entrepreneurial climate at their university. Looking at the supplementary variables included in the JCA, the analysis shows that especially those students with a very low EI, are those who do not know what career path to pursue after their studies and five years after graduation. Especially students in social sciences are not sure about their career path right after studies. Low EI is only related to students with a medium entrepreneurial attitude. A similar pattern emerges for medium EI. Interestingly, both students with low and medium EI show a connection to the career intention of becoming a successor in their parents or another firm five years after graduation. Students, who have a high EI, perceive the entrepreneurial climate at their university as being very supportive. They also show a very high-perceived controllability (locus of control). Looking at supplementary variables, this profile of high EI can be found among future founders: students, who want to become a founder five years after graduation and students, who are in the process of founding their business (nascent entrepreneurs). The highest EI (very high) can be found among those students, who also report a very high entrepreneurial attitude and entrepreneurial self-efficacy. They also perceive the entrepreneurial learning at their university as being very high. Very high EI is closely related to the career path of becoming a founder and successor right after graduation. Another interesting result of the JCA can be found among the BECL students. They perceive a positive entrepreneurial climate, have a high entrepreneurial self-efficacy and they have participated in entrepreneurial classes. However, they also perceive a very high subjective
norm, which is related to a family business background supporting their effort in becoming an entrepreneur and/or successor.

**Discussion**

This study investigates career choice intentions and EI of students in Denmark using joint correspondence analysis. This offers several valuable contributions to the literature.

First, this study shows that Danish students prefer a career as an employee - both right after graduation and five years later. This reflects the high proportion of employees in Denmark, which is one of the highest among the European Union countries (Teichgraber, 2015). EI in general is embedded in social and cultural contexts (Krueger, 2009). One of these contexts is the business environment (Naffziger et al., 1994). Important environmental business factors are according to Shapero (1984) societal attitudes toward starting a business, societal attitudes toward business in general, the economic climate of the market and the availability of accessible funds. Thus, the social status of entrepreneurship emerged as a good predictor of entrepreneurial interest (Begley and Tan, 2001). Subsequently, subjective norms do not only express the reaction of close peers about a certain behaviour, but also the ‘institutional environment in which the individual operates’ (Autio et al., 2001, p. 150). For the student, the university context, in particular, is such a setting (see below). On a cultural level, cross-cultural studies point to the fact, that EI in individualistic societies is shaped by the entrepreneurial experience of the individual (Mueller et al., 2014). In addition, the GEM data shows that high innovation intentions and activities in Denmark are considered as important quality dimensions (Schøtt, 2011). This Danish business environment indicates that intrapreneurship replaces independent entrepreneurship to some extent (Kelley et al., 2011).

Second, in line with the employee-orientation of the Danish students, this study reveals a very low EI. This comes not as a surprise as the recent GEM reports already indicated a low EI. The question is, how this lack of EI in Denmark can be explained. The joint correspondence analysis points to two important key factors: perceived behavioural control
and the university context. Both very low and very high EI are related to these two factors. Students with very low EI perceive their controllability (locus of control) and entrepreneurial self-efficacy as low. In other words: They believe that their fate is beyond their own personal control and they do not believe in their ability that they would succeed in founding a business. This applies especially to social sciences students, who are not sure about their career path - right after graduation and five years later. The same students have a rather sceptical perception of the entrepreneurial environment at their university. Both entrepreneurial learning and climate are rated very low. With self-efficacy being in the centre of Bandura’s (1997) social cognitive theory, which stresses the role of observational learning, social experience and self-perception, entrepreneurship education at the university becomes one of the key factors in improving EI. To foster EI universities need to alter their students (entrepreneurial) self-efficacy through more purposeful and customised entrepreneurship courses. Those who have doubts about their future career and do not believe that they might be able to found an own business need to be approached differently with regard to learning than those who already have a high EI and entrepreneurial self-efficacy. They need entrepreneurship education, which does promote creativity, opportunity recognition and problem-solving abilities.

Students with a very high EI on the contrary need to be addressed differently. These students also reported a very high entrepreneurial attitude and self-efficacy and perceive the entrepreneurial learning at their university to be very high. Contrary to the students with very low EI they have a clearer picture of their future career: They want to become a founder or successor right after studies and are already equipped with the necessary personal characteristics. While their self-efficacy is already characterised by an entrepreneurial self-perception that fosters their EI, they might need - in addition to courses that emphasise creativity and problem-solving - differently customised offers that relate more to the funding and network capabilities necessary to establish a business. However, these students might also have formed their career intention already before they entered the university and
selected appropriate study programmes that offer a certain level of entrepreneurship education.

**Conclusion**

This study gives a comprehensive insight into Danish students’ entrepreneurial motivation and intentions. Its observations point to the fact, that entrepreneurship education at Danish universities needs to be improved; not only through increased offers of higher education programmes, courses and activities in entrepreneurship education but also through customised offers dependent on the student’s level EI and entrepreneurial self-efficacy. In addition to these practical implications, the differences between the levels of EI and related variables indicate an explanation for the contradicting results with regard to research on entrepreneurship education, which Lima et al. (2014) mention in their study. Lautenschläger and Haase (2011) criticise the current entrepreneurship education to be ‘rather a contemporary fashion and far from being effective’ (Lautenschläger and Haase, 2011, p. 154). They propose that educational systems should promote creativity and problem solving instead of focusing on imparting knowledge. In addition to that, the authors of the present study suggest that entrepreneurship education should be more customised to the different needs depending on the level of EI and entrepreneurial self-efficacy. The development of self-efficacy should be a major area of concern. Self-efficacy plays a significant role in the development of social skills, which are at least of the same importance as “hard” skills, like writing a business plan, when it comes to entrepreneurship (Kolb, 2011; Robinson and Stubberud, 2014).

Like most empirical research, the present study is not without limitations. First, this study only relies on cross-sectional data, which prevents us from drawing causal conclusions. However, previous studies emphasise that the TPB accurately predicts planned behaviour in different settings (Armitage and Conner, 2001). Nevertheless, entrepreneurship research would benefit from more longitudinal studies. One example is a recent study from Kautonen et al. (2013), who use longitudinal data to demonstrate the relationship between TPB’s
attitudinal factors and EI and the effect of EI on entrepreneurial behaviour. However, more research in different cultural settings and with larger samples are needed.

Second, there is a potential source of bias. Previous studies have shown that students have a more favourable attitude towards entrepreneurship than the overall population (Haase and Lautenschläger, 2011). However, by comparing the findings with the recent GEM data, this study finds a similar low EI among Danish students compared to the overall population in the GEM survey (Singer et al., 2015). Nevertheless, this study is only able to draw conclusions for the Danish student population.

Our study might inspire future research in several ways. Most importantly, this study has demonstrated that different levels of various independent variables influence the levels of EI. This study encourages scholars to conduct further research in that area to shed more light on the drivers behind EI at university with a more nuanced perspective. Following a critical incident approach, the authors suggest to research both successful and unsuccessful student entrepreneurs. In addition, the authors claim more comparative studies to identify institutional variables - also outside the university context -, that influence EI.
References


risk perception and economic context in shaping the entrepreneurial intent”, 


Figure 1: Theoretical framework (Ajzen, 2002)

Figure 2: Graphical overview over the joint correspondence analysis
Appendix
<table>
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<th>Dimension 1 (60.4 per cent)</th>
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Table A.1: Correspondence analysis dimension 1 (sqcorr > 0.50 and contrib > 1/53)
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Table A.2: Correspondence analysis dimension 2 (sqcorr > 0.50 and contrib > 1/53)