

Entrepreneurship education as an arena for career reflection: the shift of students' career preferences after a business planning course

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ABSTRACT

Purpose

The purpose of this paper is to examine the impact of entrepreneurship education (EE) in the form of a business planning course on students' career intentions and preferences. While there is extensive research in which traditional survey scales have been applied to study students' entrepreneurial intentions, this study takes a novel approach by extending the construct of entrepreneurial intention to include preferences for intrapreneurship and team entrepreneurship. Furthermore, the use of conjoint analysis captures students' unconscious decision-making processes when presented with different career opportunity scenarios, thereby overcoming many of the limitations of self-reported survey measures.

Design/methodology/approach

The study uses a quasi-experimental design with a novel application of conjoint analysis in EE research. A two-part survey combining a traditional questionnaire with conjoint analysis was distributed to students enrolled in a business planning course at two campuses of a Norwegian university, resulting in 99 matched pre- and post-test responses.

Findings

Two main findings arise from the study. First, there is a significant decrease in entrepreneurial intention among students in the EE course. Second, the conjoint analysis contributes to a better

understanding of this decrease by illustrating how students shift their career preferences from entrepreneurship to employment during the EE course. This suggests that EE provides a space for students' career reflections where they can explore, commit to and reconsider entrepreneurship as a career.

Research limitations/implications

A limitation of the study is that it focuses on a small sample of undergraduate students from two campus locations in Norway. Thus, further investigation is still necessary to establish whether the findings are valid in other contexts. The research has implications for higher educational institutions, policymakers and researchers in the field of EE.

Practical implications

The study contributes with a novel perspective on EE as a trigger for career reflection, a perspective that is important for educators teaching EE courses, as well as for higher education institutions who decide to implement EE in study programmes.

Originality/value

By focusing on the development of students' career preferences through conjoint analysis, the study expands knowledge on the impact of EE on students' careers, while also accentuating the value of the application of conjoint analysis in research on EE.

Keywords: entrepreneurship education, business planning, entrepreneurial intention, intrapreneurial intention, impact study, quasi-experimental design, conjoint analysis

1.0 INTRODUCTION

Entrepreneurship is recognized as an important factor for economic growth and prosperity (Audretsch et al., 2006; Baumol and Strom, 2007) and entrepreneurship education (EE) has been identified as one means of boosting entrepreneurial activity. In recent decades, there has consequently been a considerable growth in EE programmes worldwide at all education levels (Katz, 2003; Kuratko, 2005). The positive impact of EE on socio-economic development is said to have become conventional wisdom, and it is reported that it can increase entrepreneurial intention (Fayolle et al., 2006; Kolvereid and Moen, 1997), entrepreneurial self-efficacy (Wilson et al., 2007) and entrepreneurial behaviour (Elert et al., 2015; Lange et al., 2007).

One of the most frequently employed pedagogical approaches in EE is business planning courses (Pittaway and Edwards, 2012). Positioned in traditional management theories, business planning courses provide a systematic approach to teach EE that aligns well with the academic tradition within business schools (Honig, 2004). The business planning approach has however been the subject of considerable debate among EE scholars and it is claimed that such courses do not prepare students for the real world of entrepreneurship (Honig, 2004; Jones and Penaluna, 2013; Neck and Greene, 2011). For instance, Neck and Greene (2011) argue that business planning courses place too much emphasis on ideas and on entrepreneurship as a linear process, which makes students spend a disproportionate amount of time honing secondary research skills rather than learning about the complex, chaotic and non-linear practice of entrepreneurship. With this criticism in mind, it is important to have empirical evidence about the impact of business planning courses in order to understand its value as an EE teaching method.

Despite this, empirical evidence on the impact of business planning courses is scant. Following Fayolle and Gailly (2015), one reason for this could be multiple teaching methods in EE courses, which complicate the disentangling of isolated effects of EE teaching approaches. However, EE impact research in general is also facing challenges. Research on EE impact has increased in parallel with the exponential growth in EE courses and yet the empirical evidence remains inconclusive and there is a lack of rigorous quantitative studies to support claims of an overall positive impact of EE (Bae et al., 2014; Lorz et al., 2013; Martin et al., 2013). Consequently, there have been several calls for more research to explain the contradictory findings of impact studies, for instance by including person-, context- and model-specific moderators (Fayolle, 2013; Lorz et al., 2013; Nabi et al., 2017).

This study seeks to answer this call by providing novel insight into the impact of business planning courses in EE. Since business planning is one of the most frequently applied

approaches in EE, it is important to understand its impact. While there are several important outcomes of EE impact, this study takes a career development perspective. The study extends prior research on EE impact on entrepreneurial intentions by introducing intrapreneurship and the team aspect of entrepreneurship. Furthermore, it goes beyond analysing the mere increases and decreases in intention levels and explores the potential of EE as an arena for career reflection. Drawing upon career development theory, the purpose of the study is to examine whether students' career preferences for entrepreneurial behaviour change during an EE business planning course. In this paper, entrepreneurial behaviour is defined as being an entrepreneur starting up a new venture or being an intrapreneur portraying entrepreneurial behaviour in an existing company. Career preferences refer to the relative importance of a career alternative compared with other alternatives. Thus, the study seeks to answer the following research question: *How does participation in a business planning course impact students' career preference for entrepreneurship and intrapreneurship?*

The study answers the call for more rigorous impact studies on EE by applying a quasi-experimental design with pre-/post-measurement and a control group. Data were collected at two Norwegian university campuses using a two-part survey with conjoint analysis. Conjoint analysis is a marketing research technique that captures trade-off effects and unconscious decision-making processes that are not registered in traditional surveys (Hair et al., 2014; Orme, 2010) and the application of conjoint analysis is novel in EE research. This enables an in-depth understanding of career choice mechanisms which previous EE impact research has not been able to address.

Three main contributions emerge from this study. First, the study provides rigorous empirical evidence on the impact of business planning courses. The business plan as a pedagogical intervention has received criticism for being too linear and many have questioned its relevance to the education of entrepreneurial students. However, the empirical evidence for its effectiveness—or lack thereof—remains scarce. Second, the paper questions the widespread use of entrepreneurial intention in EE. By predominantly focusing on one aspect of EE impact on students' careers, there is a risk of neglecting the complexity of entrepreneurship as a career choice, its underlying decision-making processes and the potential of EE as an arena for career reflection. Finally, the study suggests a novel method for investigating the changes in career preferences triggered by EE. To our knowledge, this is the first application of conjoint analysis in the context of EE. The application of conjoint analysis provides valuable information about students' unconscious decision-making processes that cannot be captured by survey rating scales.

The paper proceeds as follows. In the next section, the theoretical background and hypotheses on EE and career impact are introduced. A description of the methodological approach follows, before the quantitative findings are presented. The paper concludes with a discussion of the findings, their implications for practice and EE research and suggestions for further research.

2.0 THEORETICAL BACKGROUND AND DEVELOPMENT OF HYPOTHESES

With the rapidly expanding number of EE courses, a myriad of EE pedagogics has emerged (Fayolle, 2013; Kuratko, 2005). There are many ways to categorize EE pedagogics, but a predominant one is the three-category framework of learning *about*, *for* and *through* entrepreneurship (Hannon, 2005; Jamieson, 1984). While learning *about* entrepreneurship deals with awareness creation through a theoretical understanding of entrepreneurship, learning *for* entrepreneurship is focused on preparing aspiring entrepreneurs for the future. Learning *through* entrepreneurship takes a more active approach, in which students learn through actually ‘doing’ entrepreneurship. The EE course studied in this paper, is on business planning and uses a learning *for* entrepreneurship approach. This is one of the most frequent teaching methods in EE (Honig, 2004; Pittaway and Edwards, 2012). In business planning courses, students typically develop written documents and/or pitches that outline a new product, service, concept or organization. While business planning is a frequent feature in EE courses, it is also heavily criticized for creating a gap between what is taught and what entrepreneurs actually do in practice (Neck and Greene, 2011). Business planning belongs to a traditional view of entrepreneurship as a linear process where the entrepreneur sets a goal and thereafter selects the means to achieve it. Sarasvathy (2001; 2009) describes this as causation and she coined an alternative decision-making logic for entrepreneurs as effectuation. As opposed to causation, effectuation starts with the means under control and explores options for what can be done with these to create opportunities (Fisher, 2012). While there is no one best way to teach entrepreneurship (Fayolle and Gailly, 2008), concerns have been raised about providing EE that focuses too much on causation and thereby misses out on the learning experience that effectuation offers (Günzel-Jensen and Robinson, 2017).

An important motivation for investing in the development and implementation of EE courses is the inherent assumption that EE will make students think and act more entrepreneurially in their future careers (O’Connor, 2013; Valerio et al., 2014). EE impact research has consequently focused on impact measures such as entrepreneurial knowledge and

skills (e.g. Nabi et al., 2018; Volery et al., 2013), affect and entrepreneurial passion (e.g. Gielnik et al., 2017; Zampetakis et al., 2015), entrepreneurial self-efficacy (e.g. Huber et al., 2014; Karlsson and Moberg, 2013), entrepreneurial intention (e.g. Oltedal et al., 2017; Sánchez, 2011; Souitaris et al., 2007), early-phase entrepreneurship (e.g. Gielnik et al., 2015; Rauch and Hulsink, 2015) and venture creation (e.g. Gielnik et al., 2015; Gielnik et al., 2017). While the outcome measures are many and widespread, careers are a common denominator, since all of the outcomes above have or can have implications for the future careers of EE students. Findings on EE career impact are, however, conflicting and several scholars have called for more research to better understand the phenomenon of EE impact (Fayolle, 2013; Lorz et al., 2013; Nabi et al., 2017). Against this backdrop, three hypotheses are developed below on the impact of EE on entrepreneurial intentions, intrapreneurial intentions and career preferences, with the objective of advancing knowledge of the career impact of EE.

2.1. Entrepreneurial and intrapreneurial intentions

There has been increasing recognition of the role entrepreneurship can play as an engine for development and economic growth (Audretsch et al., 2006; Baumol and Strom, 2007). Along with this realization, policymakers and scholars seek to understand more about the decision to become an entrepreneur. Research on entrepreneurial intentions has been important in this regard. The construct of entrepreneurial intention was introduced to entrepreneurship research through contributions by Shapero and Sokol (1982), Bird (1988) and Krueger et al. (2000) and can be defined as “*the cognitive state temporally and causally prior to the decision to start a business*” (Krueger, 2017). This implies that entrepreneurship is an intentional behaviour and that entrepreneurial behaviour can be predicted by the intentions towards that behaviour, which has been supported in empirical studies by, among others, Goethner et al. (2012), Kautonen et al. (2015) and Kolvereid and Isaksen (2006).

Entrepreneurial intention has also become an important construct in EE research. Today, EE is a priority area at educational institutions worldwide. One desired outcome of EE courses is that they should result in more start-ups after graduation. However, a major challenge for research on the relationship between EE and start-up rates is that, for EE students, starting a company will happen some years in the future (Fayolle et al., 2006). Thus, measuring the impact of EE on start-up rates becomes challenging. Entrepreneurial intention has therefore been suggested as an alternative measure to overcome this challenge (Fayolle et al., 2006; Liñán and Chen, 2009). Entrepreneurial intention is now a frequently applied outcome measure in EE

impact studies; however, the empirical evidence remains conflicting. A meta-analysis by Bae et al. (2014) took a closer look at 73 studies on the relationship between EE and entrepreneurial intention and found a small significant positive correlation. However, when controlling for the intentions that students had before EE, the association was no longer significant. These equivocal findings and methodological deficiencies are also supported by a systematic literature review by Longva and Foss (2018), which found that there were only 10 studies with a rigorous experimental design on the relationship between EE and entrepreneurial intentions. Of these 10 EE impact studies, five reported a positive impact (Gielnik et al., 2015; Rauch and Hulsink, 2015; Sánchez, 2011, 2013; Souitaris et al., 2007), two found no significant difference (Nabi et al., 2018; Volery et al., 2013), one found both non-significant and negative impacts depending on the pedagogics (Varamäki et al., 2015) and two found a negative impact (Huber et al., 2014; Oosterbeek, et al., 2010). Accordingly, even if entrepreneurial intention is a frequently applied outcome measure in impact studies, empirical evidence on the impact of EE remains inconclusive. The reasons for the equivocal findings are poorly understood and need to be further researched. This study seeks to contribute to the knowledge base of EE career impact by examining the effect of participation in an EE business planning course and the following hypothesis is proposed:

H1a: At the end of an EE course, EE students will have higher entrepreneurial intention than at the beginning of the course compared with a control group that did not take part in the course.

The career impact of EE has traditionally been viewed as whether or not EE influences the decision to become an entrepreneur. This is in line with the entrepreneurial career choice decision of Katz (1992), which is defined as “*the vocational decision process in terms of the individual’s decision to enter an occupation as wage-or-salaried individual or as a self-employed one*” (p. 30). However, entrepreneurial behaviour does not necessarily only take place in new ventures. A third alternative could be introduced to the entrepreneurial career choice, namely intrapreneurship. Intrapreneurs are individuals who act entrepreneurially within an existing organization (Pinchot III, 1985) and thereby use the same skill set as entrepreneurs to create value and help increase competitiveness for the organization they are employed in (Lumpkin and Dess, 1996; Miller, 1983). Intrapreneurship, which is also referred to as corporate entrepreneurship, has received increasing attention from scholars in recent decades

and has developed into a sub-field of entrepreneurship (Antoncic and Hisrich, 2003; Corbett et al., 2013; Dess et al., 2003). The impact of EE on intrapreneurship has, however, been given less attention (Heinonen, 2007; Hytti and Heinonen, 2013). In entrepreneurship research, empirical studies on intrapreneurship intention have found it to be a separate construct from entrepreneurial intention (Douglas and Fitzsimmons, 2013), although this insight has yet to find its way into EE impact research. Since the objective of EE is to promote entrepreneurial behaviour in all organizations, and not only in new ventures (Bacigalupo et al., 2016), there is a need to examine the impact that EE can have on intrapreneurial intention. Thus, the following hypothesis is proposed:

H1b: At the end of an EE course, EE students will have higher intrapreneurial intention than at the beginning of the course compared with a control group that did not take part in the course.

2.2. Entrepreneurship education as an arena to explore career preferences

In empirical studies on the career impact of EE, the focus has, as reviewed above, traditionally been on career choice intentions, nascency or start-up rates. A perspective that has received little attention is the value of EE as a space for career reflection. Career reflection is a concept from career development theory and refers to the ability to reflect on personal capacities and motivations, which is an important career competency in the 21st century world of work (Akkermans et al., 2012; Kuijpers and Scheerens, 2006). According to Porfeli et al. (2013), career development takes place through an interwoven process of career exploration, career commitment and career reconsideration, which together forms the pathway of establishing vocational identity. Career exploration is a process with an internal component (understanding more about oneself) and an external component (understanding more about the world of work), while career commitment refers to both making a choice and committing to it, as opposed to career reconsideration which involves re-examining current commitments (Porfeli and Lee, 2012). From a career development perspective, EE can accordingly be seen as an opportunity for career exploration in which, students' career reflections include both self-exploration and environmental exploration of the world of work. Career exploration in an EE course can lead to both commitment to an entrepreneurial career or a reconsideration with orientation towards other vocational opportunities.

Despite its relevance for EE and entrepreneurial career choices, career development literature has remained somewhat separate from EE literature. This perspective is, however, in line with the literature on entrepreneurial identity, which suggests that EE can serve as an arena for identity work (Blenker et al., 2011; Donnellon et al., 2014; Hytti and Heinonen, 2013). There are also quantitative studies along the same lines that address the sorting effect (Fretschner and Lampe, 2018; Von Graevenitz et al., 2010) that EE can have on students' entrepreneurial intentions. The sorting effect refers to the mechanisms in play when students receive signals during EE regarding whether or not they are suited to entrepreneurship. As described by Günzel-Jensen and Robinson (2017), the entrepreneurship classroom thereby provides the opportunity to experiment with and "try on new professional selves" (p. 793). Thus, in line with previous research on entrepreneurial identity work and the sorting effect, career development literature provides a theoretical foundation for seeing EE as a career exploration activity where students "try on entrepreneurship". Through reflection on the career exploration experience, students might change or adjust their career preferences. This suggests that EE can serve as an arena for career reflection. If EE is an arena for career reflection, where students explore, commit and reconsider these reflections, students in an EE course should make more changes in their career preferences than had they not taken part in the course. Hence, the following hypothesis is proposed:

H2: At the end of an EE course, EE students will have made more changes to their career preferences than a control group that did not take part in the course.

3.0 METHODOLOGY

Empirical data were collected from students at two campuses, campus A and campus B, of a Norwegian university in the spring of 2017. Impact studies on EE have received substantial criticism for not being methodologically rigorous (Bae et al., 2014; Lorz et al., 2013; Martin et al., 2013). To overcome methodological deficiencies, we employed a quasi-experimental design with ex-ante/ex-post measurement and a control group as described by Cook and Campbell (1979). The pre-test (T1) was conducted at the beginning of the EE course and the post-test (T2) was conducted immediately after the teaching component of the course had finished. Both tests (T1 and T2) were distributed to both the treatment and control group. None of the authors were involved in the teaching of the course.

While the second part of the survey consist of a traditional questionnaire applying validated item scales (see Appendix I), the first part of the survey has a novel application of conjoint analysis in EE research. Conjoint analysis is a statistical technique from market research that is used to determine how respondents value different attributes in a decision-making process (Green and Rao, 1971; Orme, 2010). An important argument for using conjoint analysis is that peoples' stated, or self-reported, attitudes often differ from their actual unconscious attitudes (Greenwald and Banaji, 1995; Payne et al., 2008). For example, people may say they like to donate to charities when asked, but do not actually intend to donate. Techniques to capture unconscious or implicit attitudes are therefore important for gaining a better understanding of attitudes. Conjoint analysis captures implicit attitudes through measuring the relative importance of all attributes used to describe alternatives in multi-attribute conditions. In this paper, we measure the relative importance of different career attributes of career opportunities. The students evaluated the attractiveness of different attribute level compositions of career scenarios (see Appendix I for attributes, attribute levels and samples of career scenarios in the survey), which resulted in a relative importance, or part worth utility, for each attribute for each individual respondent. Implicit attitudes were inferred from the pattern of these career scenario trade-offs. In this way, conjoint analysis overcomes the challenge of rating everything at the higher end of survey scales by capturing the trade-off that underlies an actual choice. Hence, it offers a technique for obtaining a more realistic understanding of respondents' decision-making processes and for decomposing unconscious structures of the decision policies (Hair et al., 2014). In other words, conjoint analysis gives us better insight into what people really prefer relative to explicit, stated measurement such as those captured on Likert scales. While conjoint analysis has been suggested as a valuable methodology for studying decision making in entrepreneurship (Lohrke et al., 2010; Shepherd, 2011), it has not yet been applied in EE research.

3.1 Course description

The EE 'treatment' examined in the study is a business planning course applying a learning *for* entrepreneurship approach (Hannon, 2005). The course is offered to students at two campus locations and lasts for one semester (five months). Students attending the course are in the second, third or fourth year of study within study programmes in business, biology and engineering. Hence, students from different study programmes attend the same EE course and are in the same classroom. During the course, students receive theoretical input on how to develop ideas and start a company, but also work in groups to develop a business plan for their

own ideas. The topics covered are evaluation of business ideas, business plan development, market prospects, competitor and sector analysis, business model development, intellectual property rights and basic financial analysis. The teaching methods include lectures, guest lectures, group exercises, workshops and case discussions. While the student assessment is wholly based on a business plan handed in at the end of the semester, students receive faculty guidance on written drafts and oral presentations several times during the semester. Students are also given the opportunity to participate in a business plan competition, in which they pitch their ideas to an external jury.

3.2 Sample

The study draws on a sample of 99 students, 44 of whom attended the EE course and 55 who did not. In the first week of the course, the survey was distributed to 150 treatment group students at both campuses and to 124 control group students at campus A. The survey was also distributed to control group students at campus B but, as the authors do not have access to lists of students at this campus, it is unknown how many of them received it. The students in the control groups were on the same study programmes as the treatment group (business, biology and engineering), but did not attend the business planning course. In the first round, we received 65 complete survey responses from the treatment group and 74 from the control group. In the second round, 52 survey responses from the treatment group and 73 from the control group were found usable for further analysis. Thereafter, respondents from the first and second surveys were matched according to a self-generated identification code that only the respondents knew¹. This resulted in 99 matched surveys for pre- and post-measurement, i.e. 44 for the treatment group and 55 for the control group. The sample characteristics of the respondents are presented in Table 1.

¹ The self-generated identification code consisted of the first letter in the mother's first name, the second letter in the father's first name and the number of the month of birth, as previously applied by von Gravenitz et al. (2010).

Table 1: Characteristics of survey sample (n=99)

Characteristic	Treatment group (n=44)	Control group (n=55)
Gender		
Male	20	12
Female	24	43
Age (years)		
19–22	18	31
23–26	19	15
27–30	5	3
31–34	1	2
35–38	1	3
39–42		1
Study programme		
Business studies	20	25
Biology studies	15	19
Engineering studies	9	11
City of study		
Campus a	33	44
Campus b	11	11

3.3 Measurement

The survey consisted of two parts: a conjoint analysis and a standard questionnaire. Adaptive conjoint analysis using Sawtooth software version 9.8.1 (Sawtooth Software, Provo, UT) was employed for the first part of the survey, while SPSS software version 26 (SPSS Inc, Chicago, IL) was used for further analyses. Respondents were presented with career scenarios comprising seven different job attributes developed in the work of Longva and Strand (2018). The seven attributes each had three to four attribute levels which are listed in Appendix II along with the samples of career scenarios with which students were presented to. This paper focuses on the attribute ‘job description’ in the conjoint analysis survey. The attribute levels for the attribute ‘job description’ were: (1) Entrepreneur—start a company alone; (2) Entrepreneur—start a company with two to five others; (3) Intrapreneur—intrapreneurial tasks in a permanent position in an existing company; and (4) Employee—non-intrapreneurial tasks in a permanent position in an existing company. The conjoint analysis task captures the trade-off effect between the four career preference attributes and the relative importance of these at T1 and T2, thereby enabling a comparison of changes among the individual respondents.

The standard survey part of the questionnaire captured demographics, previous experience with entrepreneurship and intentions towards entrepreneurship and intrapreneurship. Two validated scales were used to measure items regarding entrepreneurial intention (EI) and intrapreneurial intention (II). Both were measured on a five-point Likert scale; the items of the scales can be found in Appendix II. The measurement of EI used a six items scale validated by Thompson (2009) to capture students' intentions to pursue entrepreneurship, as this has become a well-established scale in entrepreneurship research. The measure has a Cronbach's α -value of 0.841. The construct of II was developed from a three-item scale by Moberg et al. (2014), which is one of few validated II scales.. A fourth item, "Developing new products for the company I work for", as suggested by Longva and Strand (2018), increased Cronbach's α -value from 0.727 to 0.770.

4.0 RESULTS

The analysis considers three effects of the business planning course. First, the impact on EI is addressed, followed by the impact on II. Finally, the changes in career preferences are considered in order to test the potential of EE as an arena for career reflection.

4.1 Impact of entrepreneurship education on entrepreneurial and intrapreneurial intentions

The means and standard deviations of the intentions across the two periods are shown in Table 2.

Table 2: Descriptive statistics for entrepreneurial intention (EI) and intrapreneurial intention (II) across two time periods (n=99)

Intention	EE students (treatment group) (n=44)				Non-EE students (control group) (n=55)			
	Pre-test (T1)		Post-test (T2)		Pre-test (T1)		Post-test (T2)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
EI	22.00	4.65	20.64	5.29	14.73	4.13	14.27	4.06
II	15.98	3.20	16.00	2.57	14.24	2.40	14.47	2.40

In order to analyse whether there were significant changes among EE students that were not seen in the control group, a mixed between–within analysis of variance (ANOVA) was applied. For EI, there was no significant interaction between the two student groups and time and thus the analysis could proceed to interpret the main effects: Wilks' lambda=0.983, $F(1, 97)=1.71$, $p=0.19$. The analysis of the main effects showed a moderate effect between the pre- and post-test results for the whole sample, Wilks' lambda=0.934, $F(1, 97)=6.87$, $p=0.01$, partial eta squared=0.66, showing a significant decrease in EI. The main effect comparing the two groups was also significant, $F(1, 97)=65.36$, $p=0.000$, partial eta squared=0.40, indicating a large effect of EE participation following the guidelines for effect size interpretation suggested by Cohen (1988). The ANOVA analysis for II showed no significant change.

The ANOVA results showed a significant decrease in EI among EE students that was not found in the control group. Accordingly, there was no support for hypothesis *H1a*, since EI actually decreased among EE students. With regard to II, there was no significant change among either EE students or the control group and hypothesis *H1b* was therefore not supported.

4.2 Impact of entrepreneurship education on changes in career preferences

Results from the conjoint analysis task provided the relative importance of the four career preferences for T1 and T2. The relative importance at T1 and T2 is portrayed in Figure 1 (EE students) and Figure 2 (non-EE students). Figure 1 shows that, for EE students, starting a company alone was perceived as the relatively least attractive career preference at the beginning of the EE course, and the relative preference was even lower compared with the other three alternatives after the course. Starting up in a team was the most preferred career preference at T1, though it exhibited a relative preference reduction between T1 and T2. Being an intrapreneur was the second most preferred option at both test times, but the relative importance increased between T1 and T2. Finally, being neither an entrepreneur nor an intrapreneur was the third most preferred option at both test times, but was perceived to be relatively more attractive after the EE course.

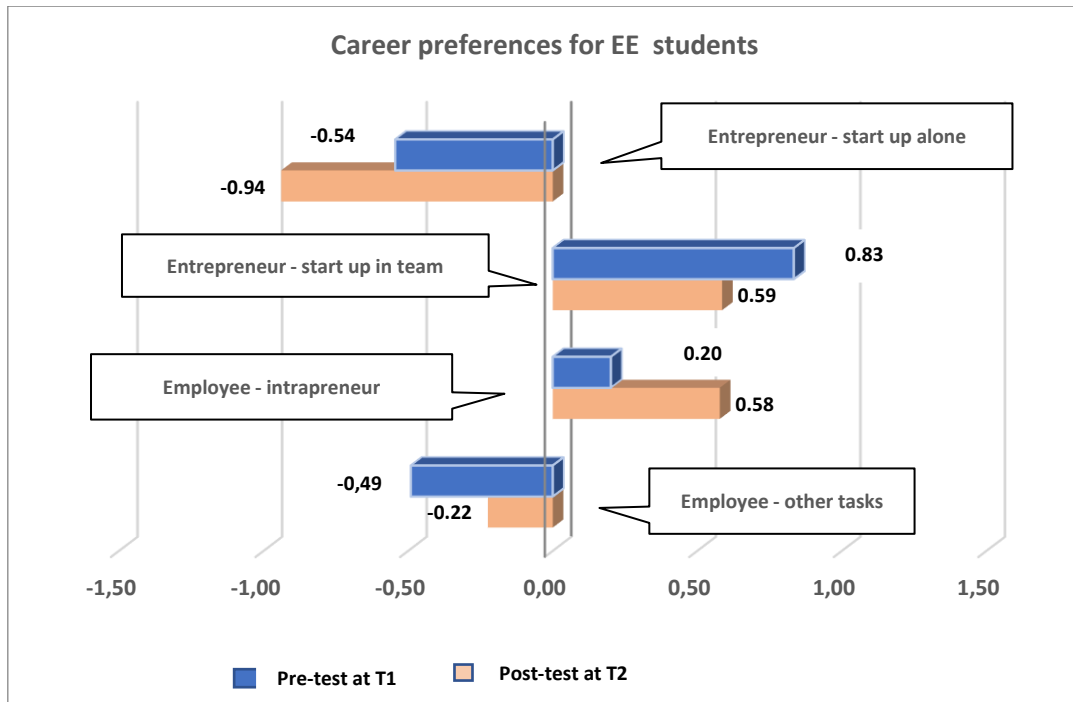


Figure 1: Zero-centred part-worth utilities for EE students at T1 and T2

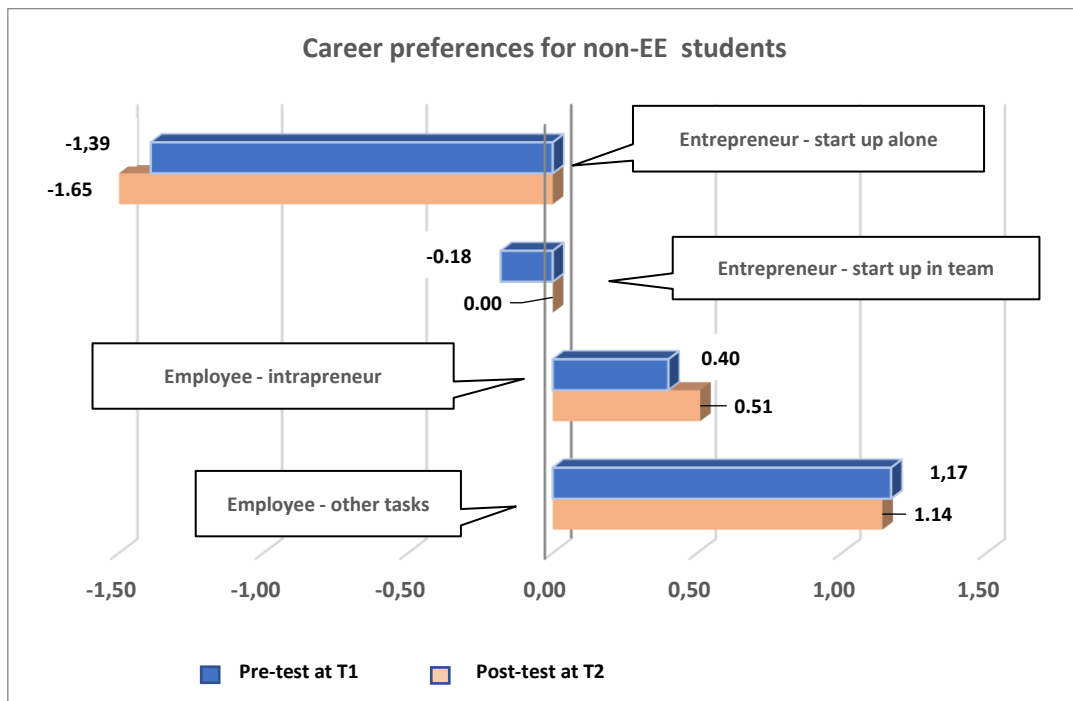


Figure 2: Zero-centred part-worth utilities for non-EE students at T1 and T2

In order to test the potential of EE as a career reflection intervention, a Wilcoxon signed-rank test was applied. The part-worth utilities did not meet the normality assumptions for the t-test and hence the non-parametric alternative was applied. The part-worth for each career preference was ranked from one to four, where one was the most preferred career option and four the least. The results of the Wilcoxon signed-rank test are shown in Table 3.

Table 3: Results from Wilcoxon signed-rank test (n=99)

		Entrepreneur— start up alone	Entrepreneur— start up in team	Employee— intrapreneur	Employee— other tasks
EE students	<i>z</i>	-3.507 a	-1.660 a	-2.185 b	-2.623 b
	<i>p</i>	0.000***	0.097	0.029*	0.009**
Control group	<i>z</i>	-0.715 a	-0.188 a	-0.135 b	-0.293 b
	<i>p</i>	0.474	0.851	0.893	0.769
<i>a. Based on negative ranks</i>			* <i>p</i> ≤0.05	** <i>p</i> ≤0.01	*** <i>p</i> ≤0.001
<i>b. Based on positive ranks</i>					

The Wilcoxon signed-rank test showed a significant reduction for EE students in the preference for starting up alone ($z=3.51$, $p<0.001$, with a medium effect size of $r=0.37$) and a significant increase in the preferences for intrapreneurship ($z=2.19$, $p=0.029$, with a small effect size of $r=0.23$) and being an employee with non-intrapreneurial tasks ($z=2.62$, $p=0.009$, with a small effect size of $r=0.27$). Although there was a reduction in the preference for starting up in a team, the change was not significant ($z=1.67$, $p=0.097$). The same analysis for the control groups did not produce any significant differences in rankings between T1 and T2.

Thus, the ranking test shows that there were significant changes in the career preferences of the EE students for three out of four career alternatives. No significant changes were found in the control group. There is accordingly support for hypothesis *H2*, indicating the potential of EE as an arena for career reflection where students reconsider career preferences.

5.0 DISCUSSION

This study set out to examine how participation in a business planning course would impact students' career intentions and preferences for entrepreneurship and intrapreneurship. With the rapid increase in EE courses at all education levels and in all education fields, it is important to understand the impact of different EE pedagogical approaches. The business plan as a pedagogical approach has been much debated, but is still poorly understood due to scant empirical evidence. This study examines the impact such a course can have on students' career intentions and preferences, and thereby contributes to a better understanding of the topic of EE impact.

The findings show that, for this sample, participation in the business planning course actually decreased the intention to become an entrepreneur. Although studies addressing EE impact on entrepreneurial intention have been inconclusive, Huber et al., 2014; Oosterbeek, et al., 2010 and Varamäki et al., 2015 have reported a similar decrease. Previous qualitative research on the impact of business planning courses has primarily been rather positive (Bell and Bell, 2016; Jones and Jones, 2011; Russell et al., 2008) and the same goes for quantitative impact studies, where business planning is a component of the course (Nabi et al., 2018; Sánchez, 2011, 2013). Hence, the results of this study clash with the latter findings. However, in line with Gorman et al. (1997) and Henry et al. (2005), EE is not a black box to be thrown at students to produce the same result each time. EE needs to be adapted to the learning needs of the target students if particular learning objectives are to be achieved (Fayolle and Gailly, 2008). Thus, if the objective is to increase entrepreneurial intentions then business planning was not the right pedagogic for this sample. Perhaps do such courses have more impact on entrepreneurial intention when they are offered as part of a portfolio of EE according to the recommendations of Neck and Greene (2011). A business planning course also has other objectives besides merely increasing intention. Outcome measures of knowledge, skills and emotions can be relevant for capturing that particular impact. If the objective of an EE course is to increase intentions, other EE pedagogics might be more appropriate. The business planning course is based on causation logic, hence, an EE course founded in Sarasvathy's (2001) effectuation logic could give other results as this provides a different learning experience (Günzel-Jensen and Robinson, 2017).

The results did not show any change in intrapreneurial intentions among the EE students. However, when career preferences were introduced into the conjoint analysis they enabled insight into the evaluations students made about career alternatives. First, the conjoint analysis revealed that the preference for starting up in a team was perceived to be much more

attractive than starting up alone both pre- and post-test. This highlights the importance of introducing the team aspect in EE, as it offers students an alternative to the stereotypic lone hero (Hytti and Heinonen, 2013). Second, the conjoint analysis results from the signed rank test indicate a shift in students' career preferences from entrepreneurship to employment. Starting up a company alone became significantly less attractive compared with the three other career alternatives for the EE students. The perceived attractiveness of starting up in a team also decreased, but not significantly so. The findings illustrate how students who perceived entrepreneurship as being less attractive after the business planning course shifted their preferences towards employment either as an intrapreneur or without having intrapreneurship tasks. The preferences for both employment alternatives increased significantly from before to after the EE course. Thus, students do not necessarily dismiss the possibility of entrepreneurial behaviour in their future careers, but many would like to do so within an existing company. One possible explanation for this could be that students have "tried on entrepreneurship" (Günzel-Jensen and Robinson, 2017), and found that this is not for them. Third, EE students reconsidered their preferences to a much larger extent than the control group. EE students showed significant ranking changes for three out of four career alternatives, while the control group showed no significant changes. Drawing upon the career development process, as described by Porfeli et al. (2013), this could imply that EE has been a career exploration experience for the students. Considering the significant changes in rankings of career alternatives, the reflections students made during the EE course may have led to a career reconsideration compared to the preferences before the EE course. The students have explored entrepreneurship as a career and learned more about their preferences in the workplace. EE can thereby function as a career exploration intervention whereby students are triggered to consider who they see themselves as being in their future careers and, as outlined by Porfeli et al. (2013) and Porfeli and Lee (2012), either commit to or reconsider the career they have "tried on". This is in line with ideas on EE and identity work presented by Donnellon et al. (2014), Hytti and Heinonen (2013) and Blenker et al. (2011), who argue that EE can provide an opportunity for students to learn more about themselves through entrepreneurial identity work. The findings can also be interpreted in the light of empirical studies on the sorting effect (Fretschner and Lampe, 2018; Von Graevenitz et al., 2010). In this perspective, a decrease in entrepreneurial intention is not a failure of an EE course. Rather, it could be a sorting effect indicating that students have been allowed to explore entrepreneurship as a career choice and to make a more informed decision about whether it is suitable for them or not. Thus, the value of EE as a space

for career reflection should not be underestimated, and is an important factor for both educators and policymakers to consider.

From a methodological perspective, an important insight from the study is that the application of conjoint analysis provided more nuanced findings than the traditional survey scales applied for intention measurement. While survey scales are able to indicate decreases and increases in intention scores, conjoint analysis is able to capture both the trade-off effects and unconscious relative preferences that students attach to different career alternatives. There has been a call for more research applying conjoint analysis in entrepreneurship research (Lohrke et al., 2010; Shepherd, 2011), and this study suggests that this can also be an appropriate methodology for studying EE impact.

6.0 CONCLUSION

This study has made two main contributions to the understanding of EE impact. First, it contributes to the limited body of empirical evidence on the impact of a business planning course on entrepreneurial intention through a methodologically rigorous impact study applying both pre-/post-test measures and a control group. The results revealed a decrease in entrepreneurial intention among EE students. Second, the study demonstrates the potential of EE as an arena for career reflection. EE students changed their preferences to a much larger extent than the control group students, and a shift from entrepreneurship to employment (both intrapreneurship and non-entrepreneurship) was observed in the conjoint analysis results. The perspective on EE as a trigger for career reflection is an under-researched topic and should provide a fruitful direction in the continued exploration of inconsistent findings regarding the career impact of EE, as called for by Fayolle (2013), Lorz et al. (2013) and Nabi et al. (2017).

Our research has implications for educators, students and policymakers. First, for educators, it is important to reflect upon *when* business planning is an appropriate EE pedagogy, but it is also important to consider the potential of EE as a trigger for career reflection. Whilst it may seem contradictory that students have reduced entrepreneurial intentions after an EE course, the experience can be important to their career development. Hence, educators need to be aware of the career reconsideration that might take place during an EE course, for instance by providing input for students' career reflection with perspectives of team entrepreneurship and intrapreneurship. Thus, if starting up a business alone is no longer a preference for students, entrepreneurial behaviour in other settings might still be. For students, the research highlights the importance of engaging in the experiences that EE provides and using them as an arena for

exploring different career alternatives. For policymakers, the career reflection perspective has only been included in EE policies to a limited extent. The focus tends to be on increased venture creation and on the acquisition of knowledge, skills and attitudes for entrepreneurship. However, when making policies for higher education institutions, which tend to be rather theory-oriented in their teaching, EE can be suggested as a counter-effect since it can be a practical and unconventional education experience that triggers students to reflect upon their future careers.

The research is not without limitations, which also indicate areas for future research. For instance, there was a small treatment group consisting of 44 matched respondents. The sample was drawn from two campuses at one university in the same country and EE students were exposed to one type of EE pedagogics. This has limitations for the generalization of the findings. Thus, more research is needed to replicate the research across other geographical locations and for other EE pedagogics. EE should not be treated as a black box, and other EE pedagogics could have produced different results in terms of both intention and career preference changes. Moreover, the post-test in the study took place immediately after the course ended. As there are indications that the long-term effects of EE is different from the short-term effects (Fayolle and Gailly, 2015), longitudinal follow-up after EE courses could provide new insight. A broader perspective on the career impact of EE is also a fruitful avenue for further research. While the literature on entrepreneurial intention has made important contributions to research on the impact of EE and provides a strong foundation, concepts such as intrapreneurship and social entrepreneurship should not be overlooked. Furthermore, career development theory is an established research field that could provide novel perspectives on EE impact research, for example through theories of career construction (Savickas et al., 2009; Savickas and Porfeli, 2012) or career identity (Ibarra, 1999; Skorikov and Vondracek, 2007). Finally, the application of conjoint analysis in the study suggests that it captures trade-off effects and unconscious decision-making processes that are not revealed by survey scales. Thus, it is a methodology that should be considered in future studies on EE.

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APPENDIX I – CONJOINT SURVEY INSTRUMENTS

Table: Attributes and attribute levels in the conjoint survey

ATTRIBUTE	ATTRIBUTE LEVEL
SALARY	1. NOK 300,000 a year
	2. NOK 450,000 a year
	3. NOK 600,000 a year
WORK EFFORT	1. 38 hours a week
	2. 44 hours a week
	3. 50 hours a week
JOB SECURITY	1. 100% certain that you will have work in 1 year
	2. 50% certain that you will have work in 1 year
	3. 10% certain that you will have work in 1 year
WORK ENVIRONMENT	1. Very good – very good relationship with colleagues and management
	2. Satisfactory – no problems with either colleagues or management
	3. Poor – poor relationship with colleagues and management
CAREER OPPORTUNITIES	1. Very good career opportunities – for professional development and promotion
	2. Some career opportunities – for professional development and promotion
	3. No career opportunities – for professional development and promotion
LOCATION	1. In your home county
	2. Oslo
	3. Abroad
JOB DESCRIPTION	1. Entrepreneur – start a company alone
	2. Entrepreneur – start a company with 2-5 others
	3. Intrapreneur – employee with intrapreneurial tasks in an existing company
	4. Employee – employee without intrapreneurial task in an existing company

Conjoint example 1: paired comparison question introducing trade-off:

If everything else about these two jobs were the same, which would you prefer?

Income: 600 000 NOK a year	or	Income: 450 000 NOK a year
Job security: 10% certain to still be employed in a year		Job security: 50% certain to still be employed in a year
Employment in existing company - work with tasks other than intrapreneurship		Entrepreneur - start a company with 2-5 others

1 2 3 4 5 6 7 8 9

Strongly prefer left Somewhat prefer left Indifferent Somewhat prefer right Strongly prefer right

Conjoint example 2: Calibration question

You will now see 5 job descriptions. For each description, please tell us how likely it is that you would accept a job offer with this description. Answer using a scale from 1-100, where 0 means not likely at all and 100 means definitely would accept it.

How likely is it that you would accept this job offer?

Income: 300 000 NOK a year
Job security: 100% certain to still be employed in a year
Poor work environment: Poor relationships with both colleagues and management
Work hours: 50 hours a week
Employment in existing company - work with tasks other than intrapreneurship
<input type="text"/>

APPENDIX II – SURVEY SCALES

Table: Overview of survey scales with items

Entrepreneurial intention (Thomson, 2009)

On a scale from 1 (strongly agree) to 5 (strongly disagree), to which degree do you agree with the following statements?

1. I intend to set up a company in the future.
 2. I never search for business start-up opportunities. (reversed)
 3. I save money to start a business.
 4. I do not read books on how to set up a firm. (reversed)
 5. I have no plans to launch my own business. (reversed)
 6. I spend time learning about starting a firm.
-

Intrapreneurial intention (three first items by Moberg et al., 2014, fourth item added by Longva and Strand, 2018)

I would like to have a job that lets me...

1. Solve problems in new ways.
2. Work on my own ideas.
3. Define my own tasks.
4. Develop new products or services for the company I work for.