

Kapittel 14

Hope for the future?

Students' attitudes towards entrepreneurship, innovation, and international mobility

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SAMANDRAG Møre og Romsdal er historisk ein innovativ og internasjonalt orientert region og er avhengig av ei arbeidsstyrke som kan vere entreprenøriell, vere innovative i eksisterande bedrifter og som kan utvikle relasjonar mot internasjonale marknader. Denne studien undersøker om studentar i Ålesund er klare for oppgåva. Funna er lovande for Møre og Romsdal og indikerer at studentane har positive haldningar til både entreprenørskap og intraprenørskap, samt til internasjonal mobilitet.

ABSTRACT Møre and Romsdal is historically an innovative and internationally oriented region, which is dependent on a workforce that can act entrepreneurially, be innovative within existing companies and cultivate connections with international markets. This study explores whether students at NTNU in Aalesund are up for the task. The findings are promising for Møre and Romsdal and indicate that students have quite positive attitudes towards both entrepreneurship and intrapreneurship, as well as towards international mobility.

NØKKEWORD Entreprenørskap | intraprenørskap | internasjonal mobilitet | karriereintensjon | studenthaldning

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INTRODUCTION

According to a recent report from GEM Global Entrepreneurship Monitor (Alsos, Clausen, Isaksen & Åmo, 2015), entrepreneurial activity has been declining in Norway in the recent decade. In 2005, 9,1% of the adult population were involved in starting ventures, while the number had declined to 5,7% in 2015. Norway is accordingly ranked as number 21 of 29 compared to other countries in innovation-driven economies. Only 30,8% of Norwegians believe that they have skills and competences relevant for starting ventures. Furthermore, new ventures are characterized by low ambitions in terms of product innovation, export, and employment. On a more positive note, Norway has the third highest level of intrapreneurship among the GEM countries and Norwegians are accordingly to a relatively high degree involved in innovation processes at the work place (Alsos et al., 2015).

Entrepreneurship and innovation has been recognized as important drivers for economic growth (Audretsch, Keilbach & Lehmann, 2006) and are especially important during economic recession. Readjustment through entrepreneurship and innovation, as well as expansion to international markets is critical in times of stagnation and decline, such as the decline recently experienced in Norway due to an abrupt decrease in oil prices. Due to its maritime cluster, Møre and Romsdal (M&R) has been particularly affected by this and is dependent on both entrepreneurial and intrapreneurial activity to find a direction out of the challenging situation (Jacobsen, 2017).

M&R has a reputation of being among the most entrepreneurial regions in the country with a distinct mercenary spirit. Research has however indicated that this is not necessarily confirmed by statistics. Spilling, Fraas, Hervik, & Bræin (2005) concluded that while M&R were on average in terms of innovation activities, the county had a relative low number of new business start-ups with 1600 new businesses each year. This accounted for 3,7% of all new ventures in Norway. A follow-up study by Hansen, Meltevik, Brastad & Røiseland (2011), revealed that although there was an increase in the number of new ventures in M&R in 2005–2009, with an average of 1800 a year, this was still only 3,8% of all newly registered ventures in Norway. Further, the number of employees in new ventures had decreased during the same period and this was seen as an indication of a limited growth potential of new ventures in M&R. Of ventures established in 2005, 49% survived their first two years, while the national average was 45%. In 2016, 2238 new ventures were established in M&R, still accounting for 3,8% of all new ventures in Norway (Statistics Norway, 2017a). With regards to survival of ventures established in 2012, the national average is 46%, while it was 51% for M&R. The

entrepreneurial activity in M&R is accordingly increasing in terms of number of companies and survival, but M&R's percentage of new Norwegian ventures has remained constant. Hence, in light of the recent economic downturn, it is critical to have a continued increase in the number of new ventures, have a high survival rate, as well as to increase the number of employees in new companies. M&R is dependent on an entrepreneurial workforce that can contribute to this.

Internationalization has been vital for business in M&R and the county was the second largest mainland-exporting county in 2016 with over 39 billion NOK (Statistics Norway, 2017b). International markets have historically been important for the region in order to create new opportunities for economic activity. Hence, employees with cross-cultural experience is of major importance for regional companies that are competing in international markets. Cross-cultural skills such as language skills, cultural understanding, market knowledge, and willingness to international mobility are vital in this competition. Such competencies can be developed through living abroad for a period, for example by studying abroad as part of an academic degree. Thus, having positive attitudes towards internationally mobility can be seen as an advantage both for students in terms of future employability and a benefit for the companies they will end up working in.

The work force's attitudes to entrepreneurship, innovation, and international mobility is accordingly critical for the future development of M&R county. M&R will need individuals who enter the work force ready to contribute and who can create new opportunities in national and international markets. Despite this, little is known about whether this is the case for the future workforce of the region. Since regional higher education institutions have been found to play an important role for recruitment of personnel to a region (Sæther et al., 2000; Arnesen, 2003; Gythfeldt & Heggen, 2012), the attitudes of regional students could give insight into this matter. Thus, this study seeks to explore whether students at NTNU in Aalesund see themselves as employees who will contribute to entrepreneurship, innovation, and internationalization. This is done through a survey and conjoint analysis survey with 210 undergraduate students that addresses the following research question: What are students' attitude towards entrepreneurship, intrapreneurship and international mobility as career choice alternatives?

Hence, the study explores students' interest towards entrepreneurship, intrapreneurship, and international mobility as features of a prospective career. The ambition is to understand antecedents of the constructs entrepreneurial intention, intrapreneurial intention, and international mobility intention. The literature suggests that there are several variables which can serve as predictors for these intentions. However, the literature is somewhat conflicting in terms of explanatory power of

the variables and more research is needed to establish this. The study examines whether the previous identified predictors are explanatory variables for this specific undergraduate student sample. Further, it is of particular interesting to gain insight into how intention constructs are interrelated. Previous research suggests associations between the constructs and it is accordingly of interest to explore potential explanations for this relationship.

The paper starts with a review of the literature on career choice preferences in terms of entrepreneurship and its relation to intrapreneurship and international mobility, which serve as a basis for developing hypotheses. Thereafter, the methodology section outlines how a conjoint analysis survey was employed to gather data. The result sections follows, where quantitative findings are summarized. The paper concludes with a discussion of the findings, a conclusion and its implications and main limitations.

THEORETICAL BACKGROUND AND HYPOTHESES

CAREER CHOICE PREFERENCES

In the transitioning from education to the labor market, students face several choices in terms of preferences for prospective jobs. A major decision is the career status choice of whether to be employed in a company or to become a self-employed entrepreneur (Katz, 1992). As entrepreneurship has increasingly been recognized as an engine for economic growth (Audretsch, Keilback & Lehmann, 2006), policy makers and scholars have devoted much effort to try to understand why some make the career status choice of becoming an entrepreneur, how it can be predicted, and how entrepreneurship can be cultivated. Entrepreneurial intention has been identified as a key antecedent to understanding future entrepreneurial behavior (Bird, 1988; Krueger, Reilly, & Carsrud, 2000), implying that becoming self-employed is an intentional behavior. Building upon the work of Ajzen (1991) and his theory of planned behavior, it is assumed that intentional behavior can best be predicted by the intentions towards the behavior. Hence, intentions are assumed to shape subsequent action. According to Ajzen (1991), the antecedents subjective norm, attitude towards the behavior, and perceived behavioral control can explain intentions, which again enables prediction of future behavior. Entrepreneurship in the form of establishing a company is a behavior that often lays several years ahead when one for instance is a nascent entrepreneur or a student. Entrepreneurial intention and the theory of planned behavior has accordingly become an important model for predicting probability of future startups. Its explanatory power was supported in a recent study by Kautonen, Gelderen & Fink

(2015), who found that entrepreneurial intention and perceived control over the behavior explained 31% of the variance in subsequent entrepreneurial behavior.

Entrepreneurial behavior can also take place in existing companies in the form of intrapreneurship. Intrapreneurship (Pinchot III, 1987) is also referred to as corporate entrepreneurship (Sharma & Chrisman, 1999; Kuratko, Hornsby & Hayton, 2015) and takes place when an intrapreneur act as an entrepreneurial employee by being innovative and turning new technologies into new ventures, enabling cost reductions, new features, and creating competitive advantages. The notion of intention can also be extended to intrapreneurship, assuming that intrapreneurial behavior is intentional. Intrapreneurial intention can accordingly be an instrument to understand whether an employee or a student have ambitions to act intrapreneurially in future jobs, as done by for example Douglas & Fitzsimmons (2012). They found that intrapreneurial intentions in fact is a separate construct from entrepreneurial intentions, and that although the intention have a common antecedent in self-efficacy, they also have distinct antecedents in terms of income, ownership, autonomy and risk.

The theory of planned behavior has also been applied to investigate intentions to work abroad (Andresen & Margenfeld, 2015; Remhof, Gunkel, & Schlaegel, 2014) and to study abroad (Hackney, Boggs, & Borozan, 2012; Presley, Damron-Martinez, & Zhang, 2010; Schnusenberg, de Jong, & Goel, 2012). As organizations increasingly operate in global markets, having employees with cross-cultural experience and skills is becoming ever more important. It is accordingly central to understand the intentions for international mobility, both among prospective employees as well as for students who consider studying abroad.

Previous research has found several predictors of intentions towards entrepreneurship, intrapreneurship, and international mobility that will serve as a basis for formulating hypotheses for this sample. Gender is one such variable and has been identified as a predictor of all three intentions. The same applies for previous experience with an issue, since having experience with something will have implications for attitudes towards a behavior. In this paper, previous experience is defined as previous international experience and previous entrepreneurship education. Entrepreneurial self-efficacy and self-employed parents have also been found to be an important predictor for entrepreneurial intention (Krueger, Reilly & Carsrud, 2000; Verheul, Thurik, Grilo & van der Zwan, 2012). In light of the theory of planned behavior, this can be explained by self-efficacy being a measure of perceived behavioral control, while parents are role models that are particularly important in terms of social norm. This study test whether entrepreneurial self-efficacy and self-employed parents also are relevant for predicting intrapreneurial

intention and international mobility intention. Finally, as suggested by Douglas & Fitzsimmons (2012), there are both similarities and differences in the career preferences of entrepreneurially and intrapreneurially oriented individuals. This is tested for the student sample in order to find whether there are common attribute preferences that indicates an association between the three intentions constructs.

The literature suggests that there are also personality factors that can predict intentions towards entrepreneurship (Schmitt-Rodermund, 2004; Verheul et al., 2012) and international mobility (Bakalis & Joiner, 2004; Remhof, Gunkel & Schlaegel, 2014; European Commission, 2014). Openness to experience, tolerance of ambiguity, and extraversion have for instance been identified as associated with entrepreneurship and study abroad, and could provide insights into the relationship between entrepreneurial, intrapreneurial, and international mobility intention. To address this was however seen as beyond the scope of the survey in this particular paper.

GENDER DIFFERENCES IN INTENTION LEVELS

Previous research shows that there are distinct gender differences in terms of preferences for entrepreneurship. Both females in Europe (Grilo & Irigoyen, 2006; Verheul, Thurik, Grilo, & van der Zwan, 2012) and in Norway (Alsos & Kolveid, 2011) have been found to have lower preferences for entrepreneurship than males. It is unknown whether this also can be extended to apply to intrapreneurship. Further, the literature suggests that females have higher willingness to study abroad short-term (Hackney et al., 2012) and are also more likely to actually study abroad than males (Kim & Goldstein, 2005; Salisbury, Umbach, Paulsen, & Pascarella, 2009). Taken together, this leads to the following hypotheses on the association between gender and intentions:

H1a: *Males will have higher entrepreneurial intention than females*

H1b: *Males will have higher intrapreneurial intention than females*

H1c: *Females will have higher international mobility intention than males*

PREVIOUS INTERNATIONAL EXPERIENCE

A recent study by Vandor and Franke (2016), indicates that there is a link between entrepreneurship and international experience and that having cross-cultural experience might actually be a predictor for entrepreneurial behavior. Their quasi-experimental study on Austrian study abroad students showed that international

experience can increase a person's capabilities to identify profitable entrepreneurial opportunities. Research on immigrant entrepreneurship also suggests such an association. Business ownership is for example higher among foreign-born than native-born (Xavier, Kelley, Kew, Herrington, & Vorderwülbecke, 2013), and self-employment rates are increasing among immigrants while they are decreasing among natives in the US (Fairlie & Lofstrom, 2014). This pattern also extends to those who have relocated abroad temporarily, for example to studying or working abroad (McCormick & Wahba, 2001). Thus, there appears to be a link between international experience and entrepreneurship. We believe that this can also be extended to intrapreneurship and as well as to the propensity to go abroad again (Van Mol & Timmerman, 2014) and hypothesize the following:

H2a: *Having international experience relates positively to entrepreneurial intention*

H2b: *Having international experience relates positively to intrapreneurial intention*

H2c: *Having international experience relates positively to international mobility intention.*

We would further like to examine if it is international experience in itself that is linked to entrepreneurship or if it the propensity to international mobility that produce a relationship between the internationalization and entrepreneurship/intrapreneurship. This leads to the following hypotheses:

H2d: *International mobility intention relates positively to entrepreneurial intention*

H2e: *International mobility intention relates positively to intrapreneurial intention*

PREVIOUS ENTREPRENEURIAL EXPERIENCE THROUGH ENTREPRENEURSHIP EDUCATION

Entrepreneurship education has been identified as a means to provide entrepreneurial experience for students and thereby increase entrepreneurial and intrapreneurial activity in society. There is empirical evidence suggesting that it contributes to increasing intentions among participation students (Kolvereid & Moen, 1997; Fayolle, Gailly, & Lassas-Clerc, 2006), but there is also evidence indicating the opposite (Oosterbeek, Van Praag, & Ijsselstein, 2010; Von Graevenitz, Har-

hoff, & Weber, 2010). Hence, whether entrepreneurial intentions increase or decrease during entrepreneurship education remains inconclusive. (Bae, Qian, Miao, & Fiet, 2014; Martin, McNally, & Kay, 2013). We therefore hypothesize the following to examine the relationship between entrepreneurship education and intentions for our sample:

H3a: *Prior entrepreneurship education relates positively to entrepreneurial intention.*

H3b: *Prior entrepreneurship education relates positively to intrapreneurial intention.*

Given the previous hypothesized link between international mobility and entrepreneurship, we also hypothesize that:

H3c: *Prior entrepreneurship education relates positively to international mobility intention.*

SELF-EFFICACY

Self-efficacy has its roots in Bandura's social learning theory and refers to the extent to which individuals believe in their ability to execute a behavior with the skills they possess (Bandura, 1977). In the context of entrepreneurship, entrepreneurial self-efficacy is the extent to which an individual believe that they have the ability to start a venture. Several studies have shown that there is a positive association between entrepreneurial self-efficacy, entrepreneurial intention, and entrepreneurial behavior (Krueger et al., 2000; McGee, Peterson, Mueller, & Sequeira, 2009). Further, Douglas and Fitzsimmons (2012) found that entrepreneurial self-efficacy is actually also a predictor for intrapreneurial intention. Since entrepreneurship research has suggested that there is a link between entrepreneurship and international mobility, we wish to explore this as well. Thus, we hypothesize the following:

H4a: *Entrepreneurial self-efficacy relates positively to entrepreneurial intention.*

H4b: *Entrepreneurial self-efficacy relates positively to intrapreneurial intention.*

H4c: *Entrepreneurial self-efficacy relates positively to international mobility intention.*

SOCIAL NORMS

Subjective norms are antecedents to intention in the theory of planned behavior and represents how an individual perceives that a certain behavior is approved or disapproved of by significant others (Ajzen, 1991). In line with social learning theory, it is believed that individuals are more likely to adopt behavior observed among family, friends or mentors (Bandura, 1977). In terms of entrepreneurial intention it has been suggested that having self-employed parents, family, or friends are predictors of preference for self-employment. Previous findings are however inconclusive as to whether this is the case or not. Some suggest a positive relationship between entrepreneurial intention and social norm (Kolvereid, 1996; Tkachev & Kolvereid, 1999; Verheul et al., 2012), while Krueger et al., (2000) found no significant relationship in a US university student population. Self-employed parents have been suggested to be the most important significant others in terms of entrepreneurial intention (Verheul et al., 2012). We extend the proposed relationship to also concern intrapreneurial intention and international mobility intentions, and accordingly hypothesize the following:

H5a: *Having self-employed parents relates positively to entrepreneurial intention.*

H5b: *Having self-employed parents relates positively to intrapreneurial intention.*

H5c: *Having self-employed parents relates positively to international mobility intention.*

CAREER ATTRIBUTES IMPORTANCE

Researchers have dedicated much effort into understanding the reasons for why some individuals choose entrepreneurship as a career. Carter, Gartner, Shaver, & Gatewood (2003) identified six career factors that explained career choices for entrepreneurs; self-realization, financial success, roles, innovation, recognition, and independence. In an empirical testing of the factors, findings indicated that entrepreneurs rated independence, financial success, and self-realization as more important than recognition, roles, and innovation.

In a Norwegian context, Kolvereid (1996) examined business graduates' reasons for preferring self-employment over organizational employment. He found that economic opportunity, authority, autonomy, challenge, self-realization and to participate in the whole process where factors associated with a preference for self-employment. Security, social environment, workload, career, and avoiding

responsibility on the other hand, were factors associated with preference for organizational employment.

At a more regional level, Nesse, Årethun, & Håvold (2016) investigated the career anchors and their association to entrepreneurship among high school pupils in the region Sunnmøre (Ulsteinvik and Herøy) and the region Sogn (Høyanger, and Årdal). The career anchors of leadership ambitions and innovation were the most important drivers of entrepreneurship in both regions. In Sunnmøre, social capital was also important, while a secure future and professional interests was found to weaken the intention to become entrepreneurial.

A few scholars have attempted to study the trade-off effect between reasons for entrepreneurship. Douglas & Shepherd (2000) found that individuals consider risk, independence, and income when evaluating alternative career options. The level of work effort was not of significant importance. Entrepreneurial intentions were stronger for those with more positive attitudes to risk and independence. Douglas and Fitzsimmons (2012) extended the study by examining how the factors related to entrepreneurial and intrapreneurial intentions. They found that entrepreneurial intention was stronger for those who prefer more income, majority ownership, and independence, but found no significant results for risk-tolerance. Instead, they found intrapreneurial intentions were higher for those who prefer lower risk.

Work attributes that were particularly important for our sample when considering prospective job opportunities has been explored in Longva & Strand (2018); namely income, work hours, job security, work environment, and career opportunities. Accordingly, this leads us to the following hypotheses:

H6a: *Income relates positively to entrepreneurial intention, intrapreneurial intention, and international mobility intention.*

H6b: *Work hours relates negatively to entrepreneurial intention, intrapreneurial intention, and international mobility intention.*

H6c: *Job security relates negatively to entrepreneurial intention, intrapreneurial intention, and international mobility intention.*

H6d: *Work environment relates negatively to entrepreneurial intention, intrapreneurial intention, and international mobility intention.*

H6e: *Career opportunity relates positively to entrepreneurial intention, intrapreneurial intention, and international mobility intention*

METHODOLOGY

Empirical data was collected among undergraduate students at NTNU in Aalesund spring 2017. A survey with conjoint analysis was distributed to all 418 second year students at the business department, biology department, maritime department and engineering department at NTNU in Aalesund. 210 of 235 returned questionnaires were found suitable for further analysis, which gave a response rate of 50,2%. 52,4% of the participants were male and 47,6% female. In terms of study program, 28,6% of the respondents were in business studies, 18,6% in maritime studies, 20% studied biology and 32,9% did engineering studies. The response rate was respectively 43,3% for males, 60,9% for females, 57,4% for business studies, 37% for engineering studies, 57,4% for maritime studies, and 60,3% for biology studies.

Data was gathered through a two-part survey consisting of a standard questionnaire combined with a conjoint analysis section. Conjoint analysis is a statistical technique that is often used in market research to determine how respondents value different attributes in a decision-making process policies (Orme, 2010). The respondents will for example be presented to a product described by different attributes (for example color, quality, price, brand). Each attribute will have different sub-levels (i.e. color: red, green, yellow) and the respondents' preferences for both attributes and levels are found by analyzing how they make trade-offs when facing different product combinations throughout the conjoint analysis. In this study, adaptive conjoint analysis (ACA) was applied to present respondents to different job opportunities. The job opportunities were composed of the attributes income, work hours, job security, work environment and possibilities for personal career development. The attribute categories and their different levels were developed based on findings from focus group interviews in Longva & Strand (2018). The respondents were asked to evaluate the job opportunities based on the perceived attractiveness and this allowed us to capture importance for each attribute and to generate part-worth utilities for attributes at the individual level.

The standard survey part of the questionnaire captured demographics, previous experience with and attitudes to entrepreneurship, intrapreneurship and international mobility. Having self-employed parents, previous international experience, and entrepreneurship education were all dichotomous variables in the survey. Three validated scales were used to measure items regarding entrepreneurial intention, intrapreneurial intention and entrepreneurial self-efficacy, while three items were tested to construct a scale of international mobility intentions. The survey included an anonymous code which enables longitudinal studies of the same sample in the future without sacrificing respondent anonymity.

The measurement of entrepreneurial intention used a 5-point scale of six items validated by Thompson (2009) to capture students' intentions to pursue entrepreneurship. The higher the value, the more positive the student is to become an entrepreneur. The measure has a Cronbach's α of 0,828.

The construct of intrapreneurial intention was developed from a 3-item scale by Moberg et al. (2014) using a 5-point Likert scale. A fourth item, («Developing new products for the company I work in») was added and increased Cronbach's α from 0,710 to 0,761.

Entrepreneurial self-efficacy was measured in accordance with the 3-item scale by Schjoedt and Craig (2017). The items refer to a person's belief that he/she can successfully create a new venture on a 5-point scale. It has a Cronbach's α of 0,811.

The international mobility intention measure was constructed by the author. 3 items («I would like to study abroad for 6 months», «I would like to work abroad for six months», and «I would like to move abroad permanently») constitutes the scale, which has a Cronbach's α of 0,810.

RESULTS

The section below presents the findings from our two-part survey. First, we present some descriptive findings on intentions, self-efficacy and career preference. Thereafter, a regression analysis is presented to test our hypotheses.

ATTITUDES TO ENTREPRENEURSHIP, INTRAPRENEURSHIP, AND INTERNATIONAL MOBILITY

The descriptive findings in Figure 14.1 illustrate that entrepreneurial intentions is rather normally distributed, while the population is somewhat more positively skewed in terms of intrapreneurial intention. While 34% would prefer permanent employment working with other tasks than innovation, 32% would like to work with innovation in existing companies. Only 9% would like to be an entrepreneur if they were to start a company alone, but 25% put it as their first choice if they could start with 2–5 others. In terms of intentions to go abroad, we found that the majority of students were quite positive to studying or working abroad for half a year. However, when it came to moving abroad permanently, students were less enthusiastic.

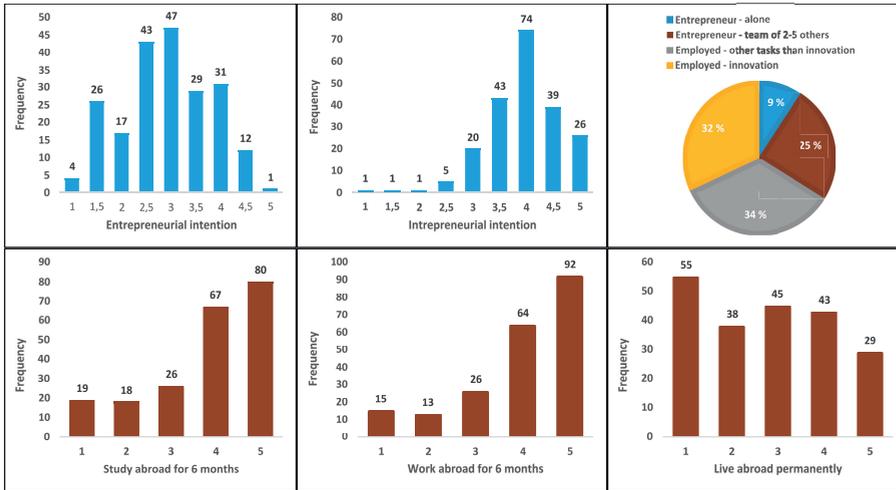


FIGURE 14.1 Intentions for entrepreneurship, intrapreneurship, and international mobility

ANTECEDENTS TO ENTREPRENEURIAL, INTRAPRENEURIAL, AND INTERNATIONAL MOBILITY INTENTIONS

We employed a principal components analysis (PCA) to investigate the underlying structure of the intentions items (see Table 14.1). The PCA revealed that three factors accounted for 60,1% of the cumulative variance. The three factors were identified as the items relating to entrepreneurial intentions (six items, $\alpha=0,83$), intrapreneurial intentions (four items, $\alpha=0,76$), and international mobility intentions (three items, $\alpha=0,81$).

TABLE 14.1 Factor analysis results

Items	Entrepre neu- rial intention	Intrapreneu- rial intention	International mobility intention
I intend to set up a company in the future.	0,83		
I never search for business start-up opportunities	0,41		
I am saving money to start a business.	0,59		
I do not read books/search the web on how to start a business.	0,7 1		
I have no plans to launch my own business.	0,82		
I spend time learning about starting a firm. Solve problems in new ways.	0,88	0,79	
Work on my own ideas.		0,82	
Define my own tasks.		0,65	
Develop new products for the company I work in		0,75	
I would like to study abroad for 6 months			0,88
I would like to work abroad for 6 months			0,92
I would like to move abroad permanently			0,76

Thereafter, we utilized a standard multiple regression analysis with SPSS software. The descriptive statistics and the correlation matrix are shown in Table 14.2, and the regression coefficients for all three models are shown in Table 14.3.

TABLE 14.2 Descriptive statistics and Pearson correlations among variables

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Entrepreneurial intention (EJ)	2,90	0,91														
2. Intrapreneurial intention (U)	3,85	0,67	0,38***													
3. International mobility intention (IMI)	3,52	1,10	0,25***	0,11												
4. Entrepreneurial self-efficacy (ESE)	3,38	0,99	0,67***	0,34**	0,11											
5. Gender	0,48	0,50	-0,06	-0,10	0,07	-0,11										
6. Lived abroad	0,21	0,41	0,08	0,01	0,32***	-0,05	0,15*									
7. Self-employed/parents	0,39	0,49	0,19**	0,15*	0,07	0,15*	-0,11	-0,10								
8. EE in lower secondary school	0,21	0,41	-0,08	-0,04	-0,03	-0,01	-0,01	-0,10	0,02							
9. EE in secondary school	0,19	0,39	-0,08	0,02	0,04	0,03	0,08	-0,01	0,00	0,08						
10. EE in higher education	0,25	0,43	0,35***	0,12	0,12*	0,28***	0,12	0,10	0,04	-0,11	0,04					
11. Income importance	15,88	3,98	0,14*	0,06	0,26***	0,07	-0,18**	0,06	0,03	0,04	-0,04	-0,12				
12. Work hours importance	9,53	4,59	-0,18**	-0,26**	-0,14*	-0,11	0,12	0,08	0,00	-0,05	-0,07	-0,01	-0,20**			
13. Job security importance	15,33	4,46	-0,02	0,05	0,07	0,04	-0,01	-0,19**	-0,05	-0,06	0,07	-0,07	-0,11	-0,23**		
14. Work environment importance	18,25	4,10	-0,10	0,11	-0,09	-0,04	0,14*	-0,05	0,02	0,11	-0,04	0,03	-0,43**	-0,02	-0,10	
15. Career opportunities importance	14,86	4,79	0,27**	0,28**	0,01***	0,20**	0,00	0,01	0,01	-0,05	0,05	0,07	-0,05	-0,46**	0,06	0,09

Note: * $p \leq 0,05$ ** $p \leq 0,01$ *** $p \leq 0,001$ $n = 210$

TABLE 14.3 Regression results for entrepreneurial and intrapreneurial intentions

	Entrepreneurial intentions	Intrapreneurial intention	International mobility intention
Entrepreneurial self-efficacy (ESE)	0,58***	0,27***	0,01
Gender	0,03	0,10	0,07
Lived abroad	0,08	-0,06	0,32***
Self-employed parents	0,11*	0,05	0,10
EE in lower secondary school	-0,33	-0,05	0,03
EE in secondary school	-0,11*	0,02	0,03
EE in higher education	0,17***	0,03	0,11
Income importance	0,07	0,08	0,34***
Work hours importance	-0,07	-0,13	0,08
Job security importance	-0,02	0,04	0,19**
Work environment importance	-0,08	0,16*	0,04
Career opportunities importance	0,13*	0,16*	0,29***
R ²	0,54	0,22	0,30

Note: * $p \leq 0,05$ ** $p \leq 0,01$ *** $p \leq 0,001$ $n = 210$

The correlation matrix indicate that there is in fact a correlation between the three intention constructs as hypothesized in H2d and H2e. For the entrepreneurial intention model, we find an influence of the variables self-efficacy, self-employed parents, entrepreneurship education (EE) in secondary school, EE in higher education, and career opportunities. In the intrapreneurial intention model, we find an influence of self-efficacy, work environment importance, and career opportunities importance. Finally, for the international mobility intention model, a significant influence is found for the variables living abroad, income importance, job security, and career opportunities. Career opportunities importance was the only variable that related positively to all three intention measures. The fit for the models (R^2) was respectively 0,54 for entrepreneurial intention, 0,22 for intrapreneurial intention, and 0,30 for international mobility intention. The hypotheses and the results are summarized in Table 14.4.

TABLE 14.4 Hypotheses and results

Hypothesized relationship	Result
H1a: Males will have higher entrepreneurial intention than females	Rejected
H1c: Males will have higher intrapreneurial intention than females	Rejected
H1c: Females will have higher international mobility intention than males	Rejected
H2a: Having international experience relates positively to entrepreneurial intention	Rejected
H2b: Having international experience relates positively to intrapreneurial intention	Rejected
H2c: Having international experience relates positively to international mobility intention	Accepted
H2d: International mobility intention relates positively to entrepreneurial intention	Accepted
H2e: International mobility intention relates positively to intrapreneurial intention	Accepted
H3a: Entrepreneurial self-efficacy relates positively to entrepreneurial intention	Accepted
H3b: Entrepreneurial self-efficacy relates positively to intrapreneurial intention	Accepted
H3c: Entrepreneurial self-efficacy relates positively to international mobility intention	Rejected
H4a: Having self-employed parents relates positively to entrepreneurial intention	Accepted
H4b: Having self-employed parents relates positively to intrapreneurial intention	Rejected
H4c: Having self-employed parents relates positively to international mobility intention	Rejected
HSa: Prior entrepreneurship education relates positively to entrepreneurial intention	Partly accepted
HSb: Prior entrepreneurship education relates positively to intrapreneurial intention	Rejected
HSc: Prior entrepreneurship education relates positively to international mobility intention	Rejected
H6a: Income relates positively to entrepreneurial intention, intrapreneurial intention, and international mobility intention	Rejected for EI & II Accepted for IMI
H6b: Work hours relates negatively to entrepreneurial intention, intrapreneurial intention, and international mobility intention	Rejected for all
H6c: Job security relates negatively to entrepreneurial intention, intrapreneurial intention, and international mobility intention	Rejected for EI & II Accepted for IMI
H6d: Work environment relates negatively to entrepreneurial intention, intrapreneurial intention, and international mobility intention	Rejected for EI & IMI Accepted for II
H6e: Career opportunity relates positively to entrepreneurial intention, intrapreneurial intention, and international mobility intention	Accepted for all

DISCUSSION

The aim of this study was to gain insight into the career preferences of the future workforce in the region. Historically, industry and commerce in M&R has been known for its capability to be innovative and internationally oriented. With the current challenges that parts of the industry is facing, the need for such capabilities will not be smaller in the future. The region's adaptability is dependent on a workforce that can act entrepreneurially, be innovative in existing companies and can establish connections and excel in international markets. This study indicates that students in Aalesund appear to be up for the task.

The findings are promising for M&R and indicate that regional students have quite positive attitudes towards both entrepreneurship and intrapreneurship, as well as towards international mobility. Intentions in terms of entrepreneurship was rather normally distributed, while intentions towards intrapreneurship and international mobility were more positively skewed. In terms of international mobility, students were quite positive towards going abroad to study or work for a period, but somewhat less enthusiastic about moving abroad permanently. Consistent with prior findings (Van Mol & Timmermann, 2014), those with previous international experience were more positive towards going abroad again. Hence, it is important to continue encouraging internationalization through for example student exchange in order to further expand international opportunities for the region's industry and commerce.

Entrepreneurship as a career choice was not perceived as very attractive if the option was to start up alone. Only 9% of students had this as their first choice. The students perceived starting up in an entrepreneurial team as much more attractive career choice and 25% had this as their first choice. Introducing a team aspect in an entrepreneurial career decision scenario, has to our knowledge not been done before. Yet, as this apparently has consequences for how attractive entrepreneurship is perceived, this should receive more attention in future career decision studies on entrepreneurship. In spite of media presentations of the entrepreneur as a lone hero, research indicates that entrepreneurship often is a team activity in a startup phase. This might also have implications for the pedagogics through which entrepreneurship education is provided. By organizing such courses as team-based activities, students can discover that an entrepreneurship career is not necessarily a solitary activity. Pedagogics that support entrepreneurship as a team activity could thereby be more likely to increase students' entrepreneurial intention.

In line with previous research (Verheul et al., 2012), we found that having self-employed parents had a significant positive relationship with entrepreneurial intention. This is consistent with the theory of planned behavior where social norm is an

antecedent to entrepreneurial intention (Krueger et al., 2000). Parents often play a particular important social role in shaping children's career trajectories and it appears that this is also the case for students in M&R. Results were however contradictory to previous findings by for example Verheul et al. (2012) and Nesse et al. (2016) in terms of gender. Previous research has indicated that males generally have higher propensity towards entrepreneurship and lower propensity to international mobility than females. Nevertheless, we did not find any significant association between gender and entrepreneurial intentions, nor with intentions towards intrapreneurship and international mobility, indicating that the gender difference between students in M&R are perhaps less pronounced than for other samples.

Entrepreneurship education is seen as one way to increase students' preferences to pursue an entrepreneurial career. Our findings confirm that this appears to be the case for entrepreneurship education in higher education. In lower secondary and secondary school, we did however not find the same relationship. While we found no significant association for entrepreneurship education in lower secondary school, there was actually a negative significant relationship between entrepreneurship education in secondary school and entrepreneurial intention. This raises questions concerning the long-term effect of entrepreneurship education. Is there in fact no effect on intentions of these entrepreneurship education interventions or does a possible effect wear off? Or could there be a sorting effect as suggested by Von Graevenitz et al. (2010), where students are able to test whether entrepreneurship is something for them and make an informed choice. Accordingly, some will become more certain about pursuing entrepreneurship when gaining entrepreneurial experience, while others realize that it is not for them. In terms of intrapreneurial intention, there was no significant relationship to entrepreneurship education. Stimulating intrapreneurial activity is an important ambition in most entrepreneurship courses; hence, the findings call for a reflection of whether courses are actually achieving this ambition.

The factor analysis confirmed that entrepreneurial and intrapreneurial intentions can be viewed as two distinct career alternatives in accordance with Douglas and Fitzsimmons (2012), and that both correlated strongly with entrepreneurial self-efficacy. Furthermore, an important insight is the significant association between the three intentions constructs of entrepreneurship, intrapreneurship, and international mobility. This is consistent with previous research on cross-cultural experience and entrepreneurial behavior (Vandor & Franke, 2016; Xavier et al., 2013). The association could however not be explained by any of our control variables, except for career opportunities importance. Hence, while living abroad was positively related to international mobility intentions, there was no significant

association to intentions towards entrepreneurship and intrapreneurship. Likewise, while self-efficacy, self-employed parents, and entrepreneurship education had significant associations to entrepreneurial intentions, this was not the case for international mobility.

Thus, career opportunities importance was the only factor that had significant association to all three constructs. This indicates that those who are ambitious in terms of career development are also more motivated for entrepreneurship, intrapreneurship, and international mobility, perhaps because they see this as means for realizing their career ambitions. Contrary to previous findings by Douglas and Fitzsimmons (2012) we did not find a link between entrepreneurial intention and income importance. However, income importance was significantly positively related to international mobility intentions.

Since career opportunities importance only had small explanatory power, there ought to be other underlying variables that can offer additional explanations for this association. According to the literature, personality characteristics could be a potential source of explanation. Openness to experiences, extraversion, and tolerance for ambiguity has for example been associated with both entrepreneurship and international mobility in previous research (Schmitt-Rodermund, 2004; Verheul et al., 2012; Remhof et al. 2014; European Commission, 2014).

Entrepreneurship, intrapreneurship, and internationalization is vital both for regions' competitiveness as well as for the individual's employability. Employers and regions need individuals that are entrepreneurial, innovative, and internationally orientated to have economic development and growth. Similarly, as these are competences in demand, students will have advantages in terms of employability if they exhibit such competencies. It is accordingly essential to understand the association between intentions towards such behavior and also what underpins these intentions. By finding common antecedents for the intentions, one can also seek to enhance them through targeted initiatives in for example education policies. Hence, understanding these associations is important in order to make recommendations for future policies.

CONCLUSION

The paper sets out to explore whether students attitudes towards entrepreneurship, intrapreneurship, and international mobility give hope for the future. Findings from the quantitative study indicate that they do. Entrepreneurship is perceived as a relevant career choice by many, but is at the same time far more attractive in a team than as a sole entrepreneur. Students were also quite positive to both intra-

preneurship and international mobility. In terms of the latter, studying or working temporarily abroad was more desirable than moving abroad permanently, and previous international experience was positively related to intention. Hence, assuming that international mobility should be encouraged due to its benefits, it is important to provide young people in their formative years with opportunities to travel abroad temporarily.

Moreover, a positive correlation between intentions to go abroad, entrepreneurial intention, and intrapreneurial intentions was established. The association could only partly be explained by one of the variables. There is accordingly a need for further research to explain this relationship. Constructs within personality research, such as risk tolerance, ambiguity tolerance and the Big5 personality factors could be relevant constructs with regards to this. When antecedents of such behavior is better understood, it will be possible for policy makers to introduce targeted educational initiatives that underpin and develop these behaviors.

The findings on the relationship between entrepreneurship education and intentions towards entrepreneurship and intrapreneurship were conflicting and call for further research. Previous research on the impact of entrepreneurship education indicates that this phenomenon is not well understood, and our findings add to the body of equivocal empirical results. While there was a positive association between entrepreneurship education in higher education and entrepreneurial intention, there was in fact a negative relationship of entrepreneurship education in secondary school and a non-significant relationship of such education in lower secondary school. Hence, with regards to the substantial efforts of introducing such courses at all education levels in the recent decade, further research is necessary to advance our understanding of what actually takes place during and after an entrepreneurial pedagogical intervention.

A potential limitation of the study might be the context. The population was students of business, biology, maritime studies and engineering at NTNU in M&R. The findings can accordingly not necessarily be generalized to other students at other education institutions or in other study programs. In addition, the explanatory power of entrepreneurship education in higher education should be studied further, since NTNU in Aalesund has two bachelor degrees in innovation. Hence, the correlation might be due to a self-selection bias where students already interested in entrepreneurship and innovation with high intentions are also the ones who apply to these courses. Further, in order to address causality, cross-sectional studies have obvious limitations. To understand the impact of entrepreneurship education on its participants, longitudinal studies with measurement both before and after courses are necessary.

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