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# Supporting Female Student's Entrepreneurial Intention Factors

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## ABSTRACT

### Objectives

Despite of the several actions implemented to support female entrepreneurship, women are still a minority in new business start-ups and in running growth firms. More understanding of female students' entrepreneurial intentions and goals related to their entrepreneurship is needed to better support them during their studies.

In this research, we use narrative approach and fuzzy cognitive mapping (FCM) to have an in-depth view on female students' mental models related to their entrepreneurial intentions. The specific objectives of the present study are: 1) what kind of goals and mental models the female students in higher education have about their own entrepreneurship, 2) what reasons have affected their entrepreneurial intentions, and 3) what are the best ways to support students in different stages of entrepreneurship.

### Prior work

The entrepreneurial intentions of the students in higher education have been studied in several studies. However, the majority of entrepreneurial intention studies have been quantitative (see Liñán & Fayolle, 2015), and provide little in-depth understanding of mental models despite the fact that commitment and implementation intention are argued to be important factors in entrepreneurship process (Adam & Fayolle, 2015). Henry, Foss and Ahl (2015) argue that gender studies in entrepreneurship require more innovative, in-depth qualitative methodologies such as life histories, case studies or discourse analysis. This research tries to fill the gap in understanding the mental models related to entrepreneurial intentions.

Tervo and Haapanen (2007) found that income was not the main motive for female entrepreneurs. McGowan et al. (2012) argue that the motives of female entrepreneurs relate more to balance between work and home, new challenges, control and flexibility. The entrepreneurial role models in childhood were also important. Ownership of the company is a strong motivational reason and entrepreneurial career offers a way to fulfill dreams (Kyrö, 2004). In comparison to male students, female students fear more about the failure, lack of competence and expertise (Shinnar, Giacomini & Jansen, 2012). As Joensuu et. al. (2014) found out, the entrepreneurial intentions of female students' can be better supported than the entrepreneurial intentions of male students'.

### Approach

The approach of this study is narrative and uses female students' stories (19) about their entrepreneurship. The qualitative data was gathered from Finnish higher education students studying in Seinäjoki University of Applied Sciences. These students attend a business incubator programme and have already high entrepreneurial intentions. Students wrote about their goals and situation related to their entrepreneurship and which reasons have affected their intention to become an entrepreneur. In addition, five of these students wrote a story about how their ideas about the entrepreneurship have developed.

In the analysis, the FCM method was used with Mental Modeler analysis tool. Students mentioned actions that promote their entrepreneurship. When these actions were put to the FCM, four junctions were found: the plans for the own business idea, studies, business transfer and considering entrepreneurship as a personal alternative (most often mentioned).

### Results

Students had different levels of implementation intention (how specific plans and goals the student has for starting up a firm). The levels were divided into three groups: no specific plans, plans on a general level and

plans on a concrete level. FCM scenario tool was used to test which factors have the biggest effect on entrepreneurial intention for each group. Factors effecting on entrepreneurial intentions were divided in to four main categories: 1) the effect of studies, 2) perceived behavioral control, 3) entrepreneurial role models and 4) life change.

The goals of the female students varied according to the planning stage. The goals of students in the group "no specific plans" related to focusing entrepreneurial identity, finding ideas and a general goal to have a business in the future. For this group, the scenario tool showed, that the support from the university studies had the biggest effect on entrepreneurial intentions. The role models had the second biggest effect and life change the third biggest effect. The goals of students in the group "plans on a general level" related to self-development, search for funding, developing products and starting up the company. For this group, the most important effecting reasons were university studies and role models. Also the development of perceived behavioral control had an impact. When examining the last group "plans on a concrete level", the goals of the female students related to funding, developing the business processes, finding out about legislation, graduating and refining their business plan. For this group, the studies had the biggest effect and after that, perceived behavioral control and life change. Surprisingly, role models had no effect for this group. The scenario tool showed, that graduating had a major effect also for entrepreneurial intentions.

### **Implications and Value**

According to the results, impact of studies had a strong influence on promoting entrepreneurship. Role models are important in the early stage, as well as perceiving own entrepreneurial identity. Students, who have already a better idea about their future business, benefit more from making plans and developing the idea further. Also finishing the studies and getting positive experiences from entrepreneurship (for example customer service and problem solving), increase the intention to become an entrepreneur.

The study shows, that it is crucial to understand the different stages of entrepreneurship. The factors effecting entrepreneurial intentions are a bit different in the different stages. The implementation intention is an important factor: the more specific plans the student makes, the more likely the actual entrepreneurial career is. The commitment has also a significant effect on entrepreneurial process (Amstrong, 2011). This study shows, that female students in different stages have different kinds of mental maps. In the early stage, the identity issues are important. When the entrepreneurial process develops, the commitment increases and plans become more specific. For entrepreneurial educators, it is important to develop different kind of support mechanisms for female students regarding their stage in entrepreneurial process.

## INTRODUCTION

Despite of the several actions implemented to support female entrepreneurship, women are still a minority in new business start-ups and in running growth firms. Brem (2008) summarizes well-known statements about male and female entrepreneurs: female businesses under-perform in number of employees, sales turnover, etc.; female business owners are less likely to own multiple businesses, less eager to plan expansion and tend to start smaller businesses with a smaller amount of start-up capital than men; the value assets in female businesses is significantly lower than in male businesses; men are more likely to want to grow their own business as far as possible, while female entrepreneurs prefer working part-time and in the service sector and finally, in comparison to men, women are more risk-averse and spend less time on networking. For promoting female entrepreneurship, it is important to address these issues also in higher education. To do so, we need more understanding of female students' entrepreneurial intentions and goals related to their entrepreneurship to better support them during their higher education studies.

The entrepreneurial intentions of the students in higher education have been studied in several studies. However, the majority of entrepreneurial intention studies have been quantitative (see Liñán & Fayolle, 2015), and provide little in-depth understanding of mental models. Henry, Foss and Ahl (2015) argue that gender studies in entrepreneurship require more innovative, in-depth qualitative methodologies such as life histories, case studies or discourse analysis. This research tries to fill the gap in understanding the mental models related to entrepreneurial intentions.

Ajzen's (1991) theory of planned behavior (TPB) has been a dominating model in examining entrepreneurial intentions (Schlaegel & Koenig, 2014). The TPB suggests that intention is the immediate antecedent of behavior and, thus, the stronger the intention to engage in a specific behavior, the more likely its actual performance should be (Ajzen, 1991). The core of the TPB is the idea that intentions have three conceptually independent determinants, namely attitude towards the behavior, subjective norm and perceived behavioral control (Ajzen, 1991). However, more understanding of the whole process is needed. For example, commitment already in the planning stage predicts better future and success for the firm (Armstrong, 2011.) In addition to the commitment, also implementation intentions have a meaning in the entrepreneurship process (Gollwitzer, 1993, 1999).

Both McGowan et al. (2012) and Koellinger, Minnitti & Schaden (2013) have studied motives of the female students to become entrepreneurs and the differences between male and female students. Studies indicate that female students are afraid of failure and the lack of competence and expertise more than male students (Shinnar, Giacomini & Jansen, 2012). Therefore, it is essential to support women's faith to their own skills. In comparison to male students female students fear more about the failure, lack of competence and expertise (Shinnar, Giacomini & Jansen, 2012). Therefore, in order to increase female entrepreneurship, it is essential to support the women's faith in their own capabilities. As Joensuu et. al. (2014) found out, during the studies the entrepreneurial intentions of the male student increase whereas by the females they decrease. For male students, the change in intentions is affected by change in attitudes and change in subjective norm. The entrepreneurial pedagogy does not seem to have an effect. For women, an active entrepreneurial pedagogy does make a difference. It has an effect on perceived behavioral control and an indirect effect on entrepreneurial intentions. To put it shortly, the entrepreneurial intentions of female students' can be better supported than the entrepreneurial intentions of male students'. (See also Varamäki, Joensuu-Salo & Viljamaa, 2016).

To fully understand the whole process of female entrepreneurship, we need more understanding about motives and goals, commitment and plans. In this research, we use narrative approach and fuzzy cognitive mapping to have an in-depth view on female students' mental models related to their entrepreneurial intentions. The specific objectives of the present study are: 1) what kind of goals and mental models the female students in higher education have about their own entrepreneurship, 2) what reasons have affected their entrepreneurial intentions, and 3) what are the best ways to support students in different stages of entrepreneurship.

## LITERATURE REVIEW

### Entrepreneurial intentions, commitment and planning strategies

Entrepreneurial intentions have been extensively studied among higher education students (e.g. Liñán & Fayolle, 2015; Wang & Wong, 2004; Wu & Wu, 2008; Vrdoljak & Dulcic, 2011). Differences between motives of female and male entrepreneurs have been studied by e.g. McGowan et al. (2012), and Koellinger, Minnitti & Schaden (2013). Female students seem to fear the failure and the lack of competence and expertise more than

the male students (Shinnar, Giacomini & Jansen, 2012). Therefore, in order to promote female entrepreneurship it is essential to support the women to trust their own capabilities, to support their perceived behavioral control. There is also a better commitment to planning when one believes to own capabilities and working as an entrepreneur. Commitment already in the stage of planning predicts better future and success for the business (Armstrong, 2011). In addition to commitment, the implementation intentions are meaningful in the entrepreneurship process. According to Gollwitzer (1993, 1999) implementation intention means how accurately a person defines how, when and where something will happen.

The theory of planned behavior (TPB) by Ajzen (1991) has been a prevailing model in entrepreneurial research for a long time (Schlaegel & Koenig, 2014). TPB suggests, that intention is the immediate antecedent of behavior. The core of the TPB is the idea that intentions have three conceptually independent determinants, namely attitude towards the behavior, subjective norm and perceived behavioral control. The stronger the intentions are, the more likely the behavior will take place (Ajzen, 1991). The link between intention and behavior seems to exist at least partly in the context of entrepreneurship (Kautonen, van Gelderen & Tornikoski, 2013). It has also been showed, that attitudes, subjective norm and perceived behavioral control explain 59 % of the variation in entrepreneurial intentions (Kautonen, van Gelderen & Fink, 2015). The relative importance of the determinants may vary. Yet, large share of the studies show, that the perceived behavioral control is the most important determinant in explaining entrepreneurial intentions (Shapero & Sokol, 1982; Boyd & Vozikis, 1994; Dros & McGuire, 2011; Pihie & Bagheri, 2011). This gives indication that developing perceived behavioral control (that is the belief in one's own capability in succeeding as an entrepreneur), is important especially in encouraging female students. Perceived behavioral control actually has a double role: it affects the intentions, but also directly the behavior (Ajzen, 1991).

Then again Sheeran (2002) has shown, that intention itself explains only 28 % of the target-oriented behavior, and psychological mechanisms, such as commitment and implementation intentions, have a great meaning in the process (Adam & Fayolle, 2015; Gollwitzer, 1993, 1999). Adam & Fayolle (2015) suggest that implementation intentions may moderate the link between intention and behavior and commitment is connected to both entrepreneurial intentions and final behavior. This may partly explain why even the high entrepreneurial intentions may not lead to business start-up (see Joensuu et al. 2014); if commitment and planning strategies are missing.

Fayolle & Liñán (2013) classified entrepreneurial intention studies published between 2006-2012 into five classes. First class includes studies, which have tested alternative models of entrepreneurial intentions. Second includes research on personal variables connected to entrepreneurial intentions, for example the research about the effect of gender. Third includes studies, which clarify the effect of entrepreneurial education on entrepreneurial intentions on different school levels. Fourth includes research about entrepreneurial intentions in different contexts and international comparisons. Final, class includes research about entrepreneurial process and the link between intentions and behavior and has least studies. Fayolle & Liñán (2013) conclude that more research is needed to be able to understand the whole process of entrepreneurship.

Earlier studies show, that through entrepreneurial education it is possible to influence both entrepreneurial intentions and behavior (Rauch & Hulsink, 2015; Martin, McNally & Kay, 2013). Yet, there exists few research which study whether the entrepreneurial education truly has an effect on entrepreneurial behavior, such as recognizing the possibilities or starting up a new business – even if it has been proved that entrepreneurial behavior effects the attitudes towards entrepreneurship. Influencing the behavior would be important in entrepreneurial education, because intentions itself do not yet generate entrepreneurship (Rauch & Hulsink, 2015).

## **Female entrepreneurship**

Female entrepreneurship has unique features. Locality, social interaction and community spirit of actions are central features. Features of the female activity are often described as follows: complement the public sector; being connected to everyday activities and local know-how and its development; answering the local demand; is based on community spirit; strengthens the local identity; is often small scale; and is based on the women's initiative of the grass root level (MoniNainen ja uudistuva naisrytittäjyys, 2010).

Three critical phases are identified on the way of the firms founded and owned by women. Of course, many of these aspects are valid in all firms despite of the owner's gender. The first one is developing and maturing the entrepreneurial intentions. Often, women have a very thorough phase of judgement. The second critical phase comes after starting the firm, when the vitality is weighted (although this applies to all firms). In the third critical

phase it is seen whether the firm is growth oriented. Growth orientation includes also internationalization and employment (Naisyrittäjyys, 2005). Some researchers combine personal networks, contacts to other entrepreneurs and networking to the enterprises managed by women (e.g. Bogren, von Friedrichs, Rennemo & Widding, 2013), but as the Finnish research on growth enterprises shows, these features are not especially connected to business managed by women, but are general instead (e.g. Sorama et al., 2015).

Tervo & Haapanen (2007) studied the factors affecting the male and female entrepreneurship. According to their hypothesis, one becomes an entrepreneur when the benefits available through entrepreneurship are bigger than the benefits in a paid work. The data in the article shows that women may often make less money as entrepreneurs as they did in paid work. Therefore, money does not explain women's motivation. For female entrepreneurs the economical result may often mean a sufficient income rather than maximizing the commercial profit (Naisyrittäjyys, 2005). Similar results were found in the study made in North Ireland. According to it, women are motivated by better balance between work obligations, acquisition of livelihood and taking care of the tasks connected to home (McGowan et al., 2012).

By females, motives identified as pulling factors were: new challenges in working life, more meaningful content of work, control over decision making, more flexibility in combining work and private life and many entrepreneurs in the childhood family (McGowan et al., 2012). Economical motivation as such was not referred, but it was important that the benefits from the work comes to themselves. Positive thoughts were connected to more flexible combination of personal and entrepreneurial goals, as well as combining the work and family. Better satisfaction to work was also expected.

According to Kyrö (2004) it is a bit problematic that female entrepreneur's success is measured with an instrumentation, which is based on the male's enterprises and results expected from them. Often, women do not share the same idea about the success. Women tend to stress the meaning of the family wellbeing and the societal meaning of the enterprise more than their male colleagues. Success means running a stable firm, independently and autonomously, although the firm might be small. Other measures for success were the customer satisfaction, meaning of a good professional accomplishment, need to fulfil oneself, smaller meaning of the economic factors and economy's role more as a necessity than as a goal. The whole complex of previous issues was connected to the satisfaction of work and as a part of comprehensive life.

Negative expectations were connected to losing regular salary and safety of the paid work as well as "make money or die" nature of venturing. Factors pushing to entrepreneurship were for example dissatisfaction for the present job, devotion to work without getting recognition, strained personal relationships and frustration to bureaucracy. There were also cases where the already discussed flexibilities did not realize when the fresh mother returned to work from maternity leave. (McGowan et al., 2012.) Women may also see the balancing in the use of time as a negative phenomena in entrepreneurship. They may also confront sociocultural expectations to prioritize taking care of home and children. Own well-being, coping with everyday life, feeling of isolation and pressure of caring the personal relationships were experienced as negative features. The lack of entrepreneurial experience was reflected as a fear to take risks and loan – also as a lack of role models. In comparison of male and female entrepreneurs, females are more afraid of possible failure and have less trust to own entrepreneurial skills. Bigger fear of the failure, less acquaintances who work as entrepreneurs and smaller trust to entrepreneurial skills diminish the likelihood to start up a business. (Koellinger, Minnitti & Schaden, 2013.)

For female entrepreneurs it is important to own the enterprise themselves. They wanted to be their own bosses and live out their dreams. (Kyrö, 2004; McGowan et al., 2012.) The likelihood of working as an entrepreneur rises along cohabitation or marriage, especially if the partner is an entrepreneur. Also highly educated partner and father's higher level of education add the woman's willingness to become entrepreneurs. If the mother is an entrepreneur, it is more likely that also the daughter will become one. It seems that the difference between male and female degrees of entrepreneurship is mostly due to different behavior, not due to different qualities. Personal traits are more emphasized by female than by men. (Tervo & Haapanen, 2007.)

In Finland, it is quite common that women work outside home. Official statements towards female entrepreneurship follow the line of the report (MoniNainen ja uudistuva naisyrittäjyys raportti, 2010), which tells that female entrepreneurship is societally important for the national competitiveness and well-being. Supporting female entrepreneurship has a positive impact on employment, it improves the regional competitiveness and adds the equality between sexes.

Entrepreneurship should be encountered with realistic expectations, being aware of both joys and sorrows. No matter how the success is measured, getting it requires commitment. (McGowan et al., 2012.) One way of transmitting the information based on experience can be achieved by bringing students and entrepreneurs together. Moderating discussions and bringing up the positive sides encourages students to make plans for own enterprise at the same time as they hear the realistic descriptions and experiences also from the challenging matters. When the challenges do not come as a surprise, the preconditions are better. It is also very important, that the entrepreneurs are role models for the students.

## METHODOLOGY

### Description of the data

The data was gathered during a project called “Smart Ladies in Digital World – Supporting women’s entrepreneurship and leadership skills in digital world”. Students (19) who took part in this project, already have a business idea or they are at least interested in entrepreneurship as a possible career. During the project they are committed to developing their own business ideas together with active female entrepreneurs. These specific students are attending a business incubator programme. Entering the project did not require ready made plans. Instead, the goal is to increase the interest of the students, give them more information and support the entrepreneurship skills. Active female entrepreneurs work as role models in the project. Although all the students do not have plans for their entrepreneurship yet, they have a high entrepreneurial intention. They come from various study fields (business, health care, food, technical) (See Table 1).

Table 1. Students come from six different fields of study.

<b>Programme</b>	<b>Amount of students</b>	<b>Year of studies</b>
Business Management	1	5
	2	4
	5	3
	3	2
	1	1
Cultural Management	1	2
Building Construction	1	4
Food and Hospitality	2	4
	1	1
Food Processing and Biotechnology	1	2
Physiotherapy	1	3
	total 19	average 2,9

In the beginning of the project, the students answered an inquiry where students wrote about their path towards entrepreneurship. Inquiry was made electronically with Webropol-programme. The first question relates to motives and factors affecting entrepreneurial intentions and entrepreneurial process and the second relates to implementation intention. Following questions were asked:

- What kind of path have you had towards entrepreneurship, tell with your own words (e.g. how have your thoughts about the entrepreneurship developed during your life, what important moments would you bring up, has something pushed you forward)?
- What kind of goals do you have considering entrepreneurship and what are the key actions in your plan in order to achieve them? Try to tell as accurately as possible what you plan to do for the entrepreneurship and when.

Answers were collected during the spring term 2016. As the students were able choose the time and place for answering, they were able to give the answers without anyone influencing the situation. On the other hand, these questions provoked the students also to reflect their personal history and future goals.

The data was completed by the entrepreneurial stories of five students. In these stories they wrote freely a story about how they have started to think about entrepreneurship in the first place, how the thoughts have developed and what kind of thoughts they have about entrepreneurship at the moment. The stories were written in Spring

2017. So the final data includes 19 student's answers to open questions and 5 freely written entrepreneurial stories.

The students were grouped into three categories according to how well developed their entrepreneurship plans were. First group of five students already had earlier experience from entrepreneurship. The second group of eight students had plans for starting a business. In the third group were six students who did not yet have an idea about what they will do, but felt that entrepreneurship is something for them. (Joensuu-Salo, Sorama, Kettunen & Viljamaa, 2016.)

The analysis was made by using the method of Fuzzy Cognitive Mapping, which allows studying the interaction of variables or concepts forming a network. The answers were taken to Mental Modeler program, which calculates the interaction between the nodes based on given values and causal relations. The information given in to the program can be seen also as a matrix and the program is able to make scenarios when the values between the nodes are changed. Scenario tool gives information how changes in certain relationships affect other nodes.

In their stories, students mentioned measures that promote their entrepreneurship. When these measures were put to the FCM, four junctions were found: the plans of the own business idea, studies, business transfer and considering entrepreneurship as a personal alternative (most often mentioned). This tool enables to produce a mental map of entrepreneurial intentions.

### **Fuzzy cognitive mapping**

KJW Craik (1943) is considered to be the developer of the cognitive maps. He presented their use as a research method in his book (Craik, according to Gray et al., 2014). His goal was to find a way to make visible how a person understands the studied things in their minds. Later, as the computers and algorithmic calculations started to develop, the Fuzzy Cognitive Mapping started to emerge. The method was originally developed by Robert Axelrod (1976) and further by Bart Kosko (Kosko, 1989). Their models were based strongly on computer matrixes and looked very mathematical.

Often the (fuzzy) cognitive maps strive to describe the subject functionally rather than absolutely exactly. A map forms a simplified picture from the reality and enables the people to structure the world (Jones, Ross, Lynam, Perez & Leitch, 2011). The method is often based on the classifications made from the data and the cause and effect reasons between the classes (Kandasamy & Smarandache, 2003). The method has been developed forward, because even the some good mathematical models may work in the real world; or the other way round. Calculative models may be too simplified. In addition, the statistical methods are often based on the terms of the variables. If the terms are not fulfilled, they may not be alternative methods. Learning and intelligent systems have been developed in order to avoid these weaknesses. (Niskanen, 2010.)

Fuzzy Cognitive Mapping as a method allows studying the reciprocal interplay of the network of variables and concepts. The method forms from "what if" questions and studies how the change in one (or more) variables affects the other variables. (Niskanen 2010.) "Fuzzy" refers to the fact that there is no exact point where the value changes. For example, research shows that a person is more likely to start a business if she/he studies and is supported. Still, it is impossible to give exact figures, which studies effect, how and how much.

This study gives more understanding about the goals and mental models of female entrepreneurship and the best ways in supporting the entrepreneurial process during studies. The possibilities that Mental Modeler program offers for making scenarios, gives a good possibility for this. When the information is given into the model, there is a possibility to add or weaken the connections between the variables. After that, it is possible to see, how the change effects on the other factors in the model.

The model of fuzzy cognitive mapping can be utilized with different kind of data. Researcher may make groupings, statistical tests, count mean values and give them into the model (cf. Gray, Zarne & Gray, 2014). On the other hand, the cognitive map can be made out of the information that has been collected from written documents, concepts collected from interviews and their interplay. Before the final conclusions, this interpretation gets reflected to earlier research, experiential information of the research group and to the pre understanding of the phenomenon under study. (Carley & Palmquist, 1992.)



The strengths of the FCM modelling are that FCM allows experts to represent factual and evaluative concepts in an interactive framework. Experts can quickly draw FCM pictures to visualize the results and they also consent of dissent to the local casual structure and perhaps even the global equilibrium. (Kandasamyn & Smarandache, 2003.) Özesmi & Özesmi (2004) add, that the advantages of the method include the abilities to allow feedback process, to deal with many variables which may not be well defined, model relationships between variables that are known with certainty, but can be described in degrees like a little or a lot. It is also possible to model systems, where scientific knowledge is limited, but expert and/or local knowledge is available. The method is fast, and it can combine different knowledge sources.

The weaknesses include the fact that FCM equally encodes the experts' knowledge or ignorance, wisdom or prejudice. Different experts differ in how they assign causal strengths and which concepts they deem causally relevant. The FCM seems merely to encode its creators' biases. (Kandasamyn & Smarandache, 2003.) "What-if's" can be modeled in FCMs, but "why's" cannot be determined. FCM does not provide real-value parameter estimates or inferential statistical tests and there is a lack of time concept. (Özesmi & Özesmi, 2004.) Niskanen (2006) reminds that it is problematic if choosing the nodes and their interactions based only to intuition or expertise. He also reminds that in numeric cognitive maps, the cause-effect relations are monotonic and they describe the short-term and long-term phenomena with equal numbers.

The use of Mental Modeler program has three main features. First, a cognitive map will be defined, where the interaction between the variables will be defined, as well as the directions and strength. It is possible to give values between [-1, 1] to the interactions. Secondly, the data can be seen in a matrix, where the given values can be checked. The third feature of the program allows making scenarios by changing the values in the model, without changing the original setting. (Grey, Grey, Cox & Henly-Shepard, 2013.) The method has been used at least in environmental studies (Gray et al., 2013), studies in community planning (Henley-Shepard et al., 2015) and in studying the different beliefs of the interest groups (Halbrendt et al., 2014).

In this study, the hyperbolic tangent is used as the scenario tool. It gets values from -1 to 1. When the values between the nodes are diminished or raised, the scenario tool gives information about the effect on the other nodes / variables. In other words, this allows testing the interplay between different variables.

### **Narrative analysis**

First, the data was analyzed by narrative analysis to find the variables for the fuzzy cognitive mapping. The thematic analysis was used (see Riessman, 2005). In thematic analysis the emphasis is on the content of a text, and narratives are organised by theme. Thematic analysis was done so that the themes, concepts and facts were searched from the text (ie. Riessman, 2005.) Codes were listed: awakening of the interest, impulses towards entrepreneurship, motives and goals. Many different narrative methods are used in social sciences. In this study, the narrative analysis is used mainly as a factual resource (see Hyvärinen, 2007). In the narratives, it is considered that the memory is selective, it brings up what it "can" and some things are deliberately or unconsciously forgotten (Muylaert et al., 2014). In relation to this study it means that the students will bring up some motives, goals and inputs.

## **RESULTS**

### **Reasons affecting the entrepreneurial intentions**

First, the data of 19 students were analyzed. Reasons effecting on entrepreneurial intentions could be dived in to four main categories: 1) the effect of studies, 2) perceived behavioral control, 3) entrepreneurial role models and 4) life change. Information and experiences of the entrepreneurship help to understand for example what one can give to the customers and therefore lower the threshold to think oneself as an entrepreneur. Working experience adds belief in one's own capability (perceived behavioral control). Relatives, friends or neighbors can act as role models. Also during studies, an entrepreneur visiting the class can be a role model for students. Change of life may bring sudden changes to plans and force to rethink goals and starting points.

In the second phase, the five additional entrepreneurship stories were examined. In the entrepreneurship stories that the students wrote, there can be found 14 mentions from pulling factors to entrepreneurship and 9 pushing factors. These can be found grouped in table 2. The pulling factors are defined as feature that are tempting and positive in entrepreneurship. The pushing factors are things that make the person unsatisfied or unhappy at the

present situation of life or working career. According to Viitala & Jylhä (2013) in Finland, more often positive, pulling factors are in the background of entrepreneurship than starting a business in front of the compulsion.

Table 2. Pulling and pushing reasons for entrepreneurship among students.

<b>Pulling reasons</b>	<b>Pushing reasons</b>
ability to decide over own - timetables - earnings - working pace and goals	impaired ability to work
carrying on the family business	responsibility of everything and plenty of work
rewarding - results from own work can be seen - learning process	change on life (death of a close one, dismissal)
opening up new ways to work and operate	also other interesting options for a career
possibility to work with things of own interest	dismissal from paid work
possibility to fulfil oneself, use imagination and creativity	Imagination and creativity need to be used, because there are no ready answers
good idea, that ennobled	age and field: few paid jobs available

The business ideas of the student's have not developed straightforward, instead, many phases can be identified. The original plan has emerged from inspiration or own interest. Though, the students noted that starting a business is rather a possibility through which it is possible to employ oneself and live on the chosen place. None of them planned to take the business closer to the customers or bigger/better markets.

Students have possibility to join a business incubation programme. The business idea gets' evaluated and elaborated during the studies when the students make different kinds of reports. Idea may prove to have too much competition, the amount of work in relation to the expected profits gets evaluated, the market size of the location is also thought.

The business idea gets evaluated for example when different clarifications and studies are made. It may come up, that there is already too much competition on the planned field of business. Idea is evaluated also by the amount of needed work and expected profits as well as the market size. It may even be forgotten or put to side for some time and if the life situation changes, it emerges again.

As there are only five additional entrepreneurship stories it is not possible to make generalizations. Anyway, different plans and making even critical observations helps the business idea to elaborate and is useful for the student – future entrepreneur.

### **Goals for the future entrepreneurship**

Goals for the future entrepreneurship were studied from the data of 19 students. Students had different levels of implementation intention. Implementation intention refers here to how specific plans and goals the student has in starting up a firm. According to the level, they were divided into three groups: no specific plans (6), plans on a general level (4) and plans on a concrete level (7). The goals, plans and motives were studied with the FCM method and Mental modeler tool in two ways. First, the data classified by researchers was given in to the model. The goal was to find out, how the students, who are in different phases with their entrepreneurship and business plans, get the most use from the entrepreneurship studies. Secondly, all the impulses, goals and motives that the students had mentioned, were put in to the model, unclassified. The interactions were drawn as they were described in the stories. For example: the student wrote "I did not want to become an entrepreneur, because I had seen how much work there is. But when I attended a business course during the time I was in a paid work, I noticed that entrepreneurship can be interesting after all". This can be seen in the model; role model → no will of being an entrepreneur → entrepreneurship trainings → considering entrepreneurship as a personal option. This examination helped to see, to what kind of nodes different impulses towards the entrepreneurship, goals and motives lead the students. In other words, is it possible to offer such things to students during the studies, which pull to the entrepreneurship.

Figure 1 shows the FCM drawn from the goals of the entrepreneurship and motives / reasons, which have contributed to the interest towards business. Variables, which have made the entrepreneurship seem interesting, have been classified into four groups. As classification of the variables is one weak point in making

the FCM, the researcher triangulation was used in order to prevent the shortcomings. The variables were taken from the students' own texts. The four categories are: influence of the studies, perceived behavioral control, role model, change of life. If several students mentioned the same thing, the value in the figure is bigger.

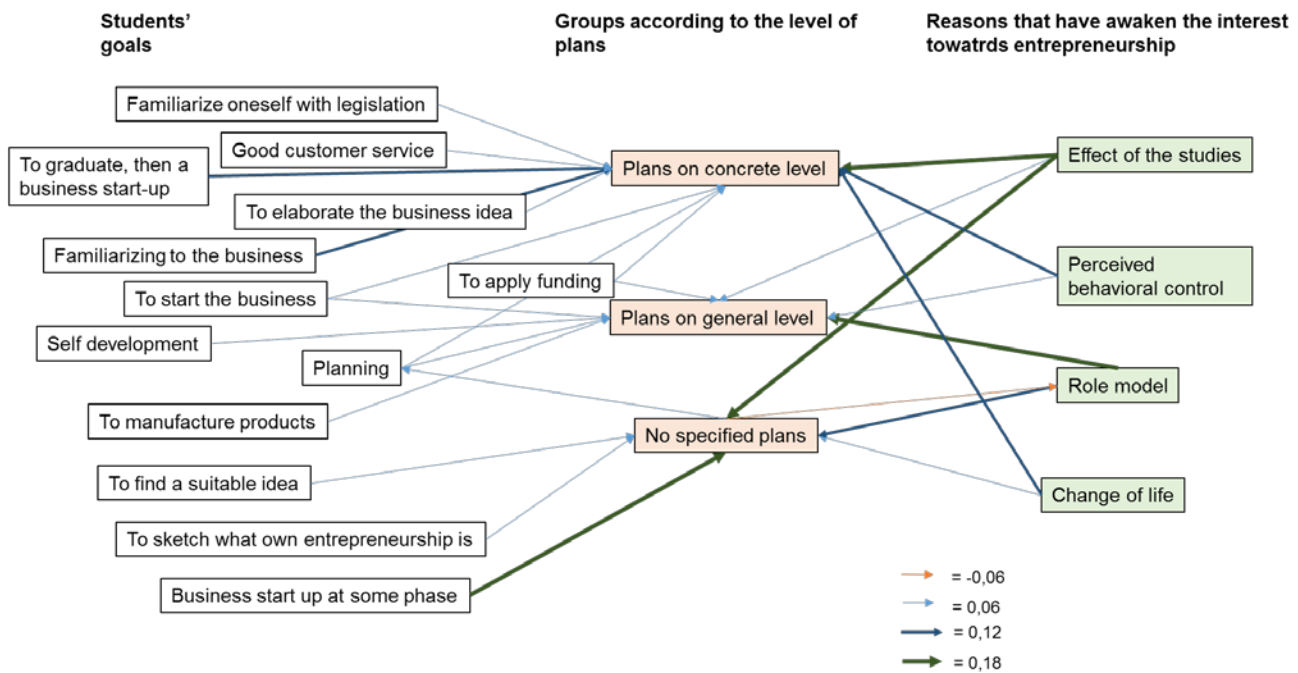


Figure 1. The students' goals towards the entrepreneurship are on the left, motives for getting interested in entrepreneurship are on the right.

Among the group of no specific plans, the goals are connected to clarifying own entrepreneurial identity, finding a business idea and general goal of starting up a business at some point. Effect of studies seems to be strongest in finding ones way towards entrepreneurship in this group. Role models have the second biggest effect and life change the third biggest.

The scenario tool of Mental modeler was used to find out how different groups can be supported on the best way. The group that has no specific plans, can be supported best by giving them information through the studies and supporting them in forming the entrepreneurial identity. Secondly best use comes from role models. When the entrepreneurial identity becomes stronger, also the likelihood to become an entrepreneur arises.

In the second group, "plans on a general level", the goals towards the entrepreneurship were connected to the self development, finding funding, manufacturing the products and starting the business. Studies and role models had had the biggest effect on this group, also the development of capability was significant.

The scenario tool reveals that in this group, the best positive effects can be achieved by studies and role models. With the help of the studies, the own entrepreneurship and business plans can be enhanced. The meaning of the role models was biggest in this group. Role models seem to be most useful when one already has some idea about the own business. Then the student is able to pick up ideas and useful tips from the role model. The examples from entrepreneurs can be reflected to own plans.

Perceived behavioral control can be supported and developed by enabling successful experiences with entrepreneurship. Co-operation with entrepreneurs, assignments connected to the development of enterprises, games and concrete assignments connected to entrepreneurship increase the feeling of capability.

Students who are already well on the way with their business plans, should especially be supported during the studies. Through and during the studies it is possible to promote own entrepreneurship, to get help from experts for developing the business idea and higher education unit can help to find right networks for financing. Students' plans were mostly effected by studies and after that experience of perceived behavioral control and life change were equally strong. Surprisingly, role models did not have a meaning in this group.

The scenario tool showed that studies had the biggest influence on the group “plans on concrete level”. Graduating was secondly important reason. Even if the business plans are ready, students want to graduate first and then start up the business. This group’s scenario had a highest amount of positive effects. In addition, also making plans, elaborating business idea, familiarizing oneself with the entrepreneurial activity and experience of entrepreneurship had a strong positive effect. Results from the scenario tool are collected in table 3.

Table 3. Effects calculated with scenario tool (hyperbolic tangent), when the weight is lifted from 0 to 1.

<b>node</b>	<b>no spesific plans</b>	<b>plans on a general level</b>	<b>plans on a concrete level</b>
to sketch what own entrepreneurship is	+0.08		
role model	+0.10	+0.16	
effect of the studies	+0.16	+0.16	+0.16
experience of entrepreneurship			+0.12
plans			+0.12
familiarizing to the business			+0.12
finishing studies			+0.14
elaborating the business idea			+0.08

Students, who are already well on the way with their business plans, should especially be considered during the studies. Through and during the studies it is possible to promote own entrepreneurship, to get help from experts for developing the business idea and higher education units can help to find right networks for financing. It is best to use role models with the students who have their plans on the general level.

Life change is a reason that rose up in the groups “no specific plans” and “plans on a concrete level”. This is not a recommended way of increasing entrepreneurial intention, because the change of life has taken place due to illness, dismissal from work, death of a next of kin or a move to a strange environment. These can be seen as pushing reasons to the entrepreneurship. Entrepreneurial education concentrates on pulling reasons.

In the second phase of FCM modeling the motives, goals and important impulses, that the students mentioned, were studied. Figure 2 shows the interplay of the mentioned things without classifications. The interaction was drawn according to how they come up in the student’s written sources, no classifications were made. Four nodal points can be seen: considering the entrepreneurship as personal choice, studies, plans and business transfer / running a business.

## Motives, goals and important impulses towards entrepreneurship

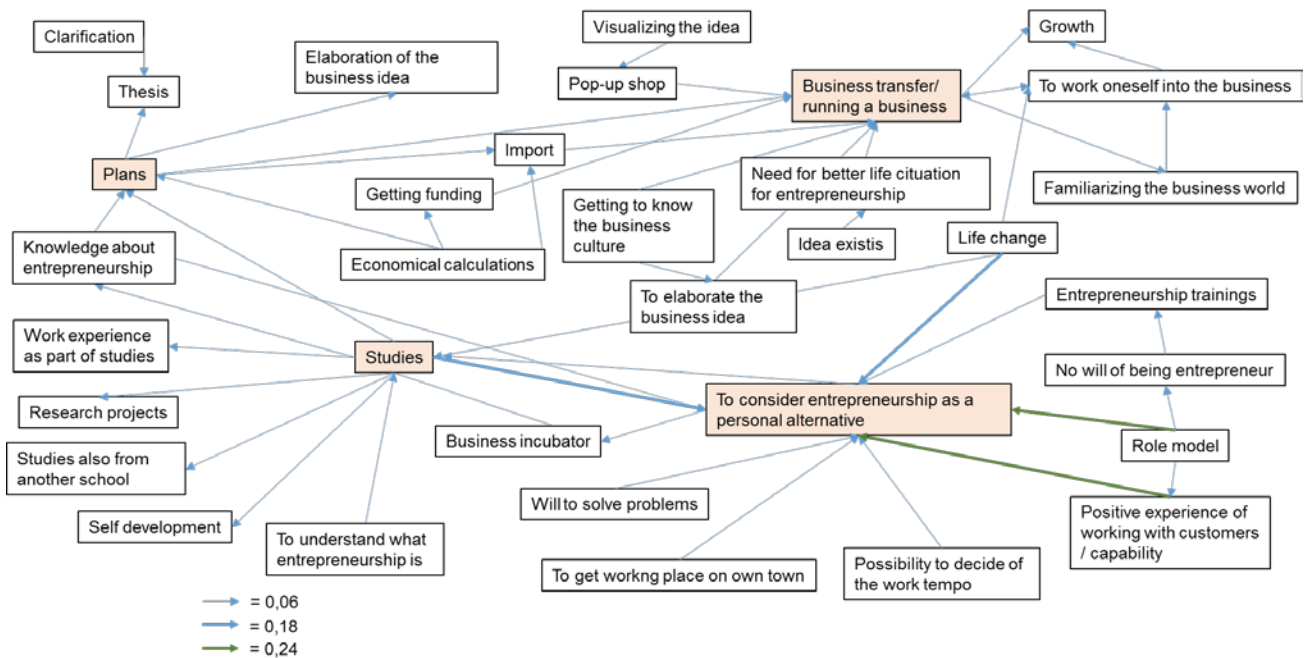


Figure 2. The motives, goals and important impulses towards entrepreneurship that students have mentioned in their stories.

The scenario made by hyperbolic tangent shows that the biggest effect comes to the point “considering the entrepreneurship as a personal choice”. The strongest affect was gained when the effects of the role models, positive experiences from customer service and studies were increased. The value still rose a bit when the information from entrepreneurship was added.

Same scenario method revealed the strongest connection to the node business transfer/ running a business came from: life situation that suites better to the entrepreneurship, seeking financing and plans. There were weaker connections also from pop up-store, elaborating the business idea and familiarizing oneself with the business culture. This result highlights the fact that if the best ways to support students during the studies want to be found, the state of the plans needs to be considered.

Studies had the strongest influence on the node plans. Other strong positive interplay can be found between plans and making economical calculations, getting information about the entrepreneurship and considering the entrepreneurship as a personal option.

Scenario tool showed that factors life change, getting a picture of the entrepreneurship and considering entrepreneurship as a personal option had the strongest supporting interplay with the node studies. Interestingly, role models had a very small effect on the studies.

## IMPLICATIONS AND VALUE

The first goal of this research was to find out what has effected on the entrepreneurial intentions of female students. The data gathered for the study showed, that the students mentioned several same pulling factors (possibility to decide about own time tables, working pace, goals; perceived behavioral control) as McGowan et al. (2012) found in their study and Kyrö (2004) (to be boss to oneself, realizing the dreams) in hers. There were also similarities in avoiding the economic risk.

The second goal was to find out what kind of goals and mental models the female students of University of Applied Sciences have relating to their own entrepreneurship. The goals varied according to the stage of students' entrepreneurial process. The students who did not yet have specific plans about their entrepreneurship connected the goals in clarifying the own entrepreneurial identity, finding a business idea and to a general goal of starting up a business at some point. The goals got more specified along the own process. Role models are important in the early stage, as well as perceiving own entrepreneurial identity. In this groups, goals related

often to developing own entrepreneurial identity and finding ideas. Generally, the idea was, that at some point of their career they would like to have a business. According to the scenario tool, this group got lot of support from the studies.

In the second group, the plans of the students were on a general level. Their goals were already more specified and were connected to applying for funding, manufacturing products, starting the business and self-development. This group benefits more from making plans and developing the idea further. Self development, understanding what skills and capabilities one has, information and search for financing. Scenario tool suggests, that this group benefits from studying and role models. At the point where the student has an idea and already some plans for own business, it is easiest to make the most of the role models. At this point visits to enterprises and entrepreneurs as quests in lecturer are very useful.

Students who had concrete plans about their entrepreneurship, had goals connected to getting funding, developing customer service, finishing the studies, familiarizing oneself with the legislation and polishing the business idea. The scenario reveals, that graduation had the major effect on entrepreneurial intentions. Also getting positive experiences from entrepreneurship (for example customer service and problem solving), increase the intention of becoming an entrepreneur. Role models are not that important anymore. Here we can see indication to the link between intention and action, a connection of which Fayolle and Liñán (2013) wanted to have more studies. According to them, it would be important to understand the entrepreneurial process as a whole. It has also been proposed, that implementation intentions and commitment effect on the entrepreneurial process. The results of this study show that the concrete planning inputs (also during the studies) take the entrepreneurial process from intentions to action.

From the point of entrepreneurship education, it is important to understand the entrepreneurship process from intentions all the way to the behavior that implements it. Process can be understood as gradually proceeding through commitment to entrepreneurship and implementation intentions, which describe the state of planning. Such understanding gives a good starting point in planning the studies. When the actions are correctly specified according to student's entrepreneurial stage, they strengthen the implementation intentions and help to add the commitment to own entrepreneurship.

The third goal of this study was to find out, what are the best ways to support the female students in different stages of their entrepreneurship plans. The results show, that the student's entrepreneurial intentions can be supported during the studies. Experiences of perceived behavioral control, making plans to enhance the business idea and elaborating it are some of the concrete actions which support the entrepreneurship. The female students get the best advantage when they get experience from own capability. Co-operation with firms, assignments connected to active firms, elaborating the own business idea and getting information of places where to get help and funding, help forward.

Role models are important to the students. The role models are mainly found from close by, relatives, but they can also be brought into the classroom. In praxis, this means inviting entrepreneurs to courses. It can also be making clarifications and different development plans to firms, through which the students get to know the firm and its' business, but also the entrepreneur. Especially in the stage where the own business plans are starting to shape, there is a lot of benefit from role models.

It has been showed, that the role models have biggest effect on committing to the entrepreneurship in the first two stages (no specific plans and plans on general level). It would be important to seek such female entrepreneurs who "break" the boundaries; field of business (e.g. not just field of service), firm size, entrepreneurs investing in networking and growth entrepreneurship (including serial and portfolio entrepreneurs). Often such entrepreneurs are also interested in cooperating with higher education units.

This study showed that the stage of the entrepreneurial process of the students should get more attention. The reasons effecting entrepreneurial intentions are a bit different at different stages. The implementation intention is an important reason: the more specific plans the student makes, the more likely the actual entrepreneurial career is. The commitment has also a significant effect on entrepreneurial process (Armstrong 2011). Taking the business planning process from general level towards more specific planning takes the process forward. The entrepreneurial process does not go hand in hand with the year of study. In same class there may be students who are in quite a different stage with their entrepreneurship intention and business plans. It would be important to identify these students in order to be able to offer them help that best takes them forward. This may be individual consulting from teachers, voluntary courses or tailor-made study plans / assignments. Therefore a straight forward planning along the curricula does not work. It is also interesting to note, that different things

are meaningful in different stages of the entrepreneurial process. Even though the studies have a big meaning in all stages, the contents vary according to stage. Ways to support the students in different planning stages are collected to table 4.

Table 4. Ways to support the students in different planning stages.

Stage of a plan	Best ways to support the entrepreneurship
No specific plans	<ul style="list-style-type: none"> <li>• Information and support for sketching own entrepreneurial identity through studies</li> <li>• Role models</li> </ul>
Plans on a general level	<ul style="list-style-type: none"> <li>• Support for proceeding the entrepreneurial process through studies (plans, funding, self-development)</li> <li>• Role models</li> <li>• Cooperation and project work with firms</li> </ul>
Plans on concrete level	<ul style="list-style-type: none"> <li>• Support for starting the business given through studies (also guiding to other experts)</li> <li>• To graduate</li> <li>• Concrete experiences of own entrepreneurship</li> </ul>

It is interesting that this study showed that studies can clearly take the entrepreneurial process forward. This brings new view of higher education studies' effect on entrepreneurship. Many earlier studies have pointed out that higher education studies lower the likelihood of becoming an entrepreneur (Kangasharju & Pekkala, 2002; Henley, 2005; Pihkala, 2008; Nabi et al., 2010; Joensuu et al., 2013). On the other hand, this study is about a group that already is interested in entrepreneurship. In the general level higher education may lower the entrepreneurial intentions. Therefore it would be highly important to recognize during the higher education studies those female students, who have interest towards entrepreneurship and plan concrete measures for them. They get a lot of help from these measures.

When we talk about supporting entrepreneurship and entrepreneurial education, it needs to be defined if the goal is to learn *about entrepreneurship* or *for entrepreneurship* (Jamieson, 1984). This study has focused on the goal for entrepreneurship. Students taking part to the project already have a clear intention for entrepreneurship and more or less clear goals. Therefore strengthening the behavior is in the center of teaching and connected activities. In that case, at its best, more weight is put in teaching the preparations of starting the business, meaning that the teaching philosophy is action-based (Rauch & Hulsink, 2015). When the results of entrepreneurial education get evaluated, the division into two categories according to the goal is justified. It sets the foundation to pedagogical means which are used to achieve the goals.

Goals of entrepreneurial education are often connected to two background theories: human capital theory and theory of planned behavior (TPB). Approach of human capital theory highlights study results such as know-how, skills and capabilities (Fayolle, 2006). The assumption behind the theory is that such learning results produce entrepreneurs who are able to fruitfully start up and run a business. Also commitment to the entrepreneurship and implementation intention that reflects its depth – in other words the phase of the entrepreneurial process that the student is at that moment – is based on both the theory of planned behavior and human capital theory. In the beginning of the process, the students search for their entrepreneurial identity and intentions. At this point the TPB is stronger. In the next two phases the human capital theory is stronger approach. Students who have plans on more concrete level develop their business ideas further for example by clarifications made as project work, business plans, self-development and developing skills that entrepreneur needs. These are all connected more to know how and capabilities than to for example attitudes and feelings. Rauch and Hulsink (2015) see, that the strength in Ajzen's model (1991) is its' ability to define especially entrepreneurship intentions trustworthy.

**Limitations**

This study has also limitations. There was one group of students under study and they were already interested in entrepreneurship. As the study was made in one University of Applied Sciences, among one group of students, the results can not be generalized to all female students interested in entrepreneurship. In this study, the thoughts of female and male students were not compared. Therefore it is not possible to say that these results would differ from male students' results. Even with these limitations, this study gives more understanding to the female students' entrepreneurial process and on its' part answers to the wishes of Liñan & Fayolle (2015) and Henry, Foss & Ahl (2015) to get more qualitative research of the mental models.

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