

“STUDENT IS BOSS”

—

A study of factors and effects of entrepreneurship student satisfaction

This thesis concerns entrepreneurship education and its value for knowledge development among individual students. Didactic theory assumes that satisfaction is strongly linked to the perceived factual benefits and knowledge utilization of education efforts, but so far this assumption has not been tested in an entrepreneurship education setting. This thesis therefore aims to identify, describe and analyse focal factors of entrepreneurship student satisfaction and potential effects thereof.

Two empirical studies constitute the thesis, both based on data collected from students in an advanced entrepreneurship programme. Bivariate and multivariate statistics were used to investigate the relationship between entrepreneurship education satisfaction among students, its factors and effects. Both approaches indicate that student satisfaction was strongly related to perceived knowledge development and future career value among individual students, *regardless of whether these individuals become entrepreneurs or not*. Findings also show that the most important factors of entrepreneurship student satisfaction were courses' perceived value for future career and their fulfilment of intended learning outcomes.

It is believed that these findings will contribute to the study of entrepreneurship education practice. Two areas are left outside the scope of this study that would be of interest for the future: (i) the *quality* of the entrepreneurial and intrapreneurial outcomes from education, and (ii) the potential effects of *non-satisfaction*.

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THANK YOU

Usually, there is a thank-you page in the beginning of a study. I've always wondered why authors squeeze in so many Johnsons. Now I understand. It *is* a challenge to write a thesis, and I for sure could not have completed mine if it had not been for the help and understanding of a couple of people:

First of all I would like to extend a warm thank you to Micke. In numerous ways you really inspired me to finalise my studies at Handels. It still astonishes me how small things like actually responding to queries and showing up for meetings can make a student finalise his thesis.

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INTRODUCTION

This section of the study will describe the background to the study, the problem area and its expected knowledge contribution. Furthermore, the section will describe the purpose, delimitations of the study and briefly summarize its disposition.

BACKGROUND

Entrepreneurship education is an area of much research, and as the field is increasingly maturing a growing body of research focuses on the level and extent of which entrepreneurial education programs impact entrepreneurial outcomes. The main topics of entrepreneurship education outcomes are the perceived entrepreneurial self-efficacy and intent, and behavioural entrepreneurship outcomes commonly measured as new venture creation (Fayolle A. et al, 2006).

Previous studies have found that there is a correlation between level of school investment in entrepreneurship education and guidance for students, but the causal connection between student quality perception and entrepreneurial outcomes has not been thoroughly investigated (Varela R., Jimenez J.E., 2001). As entrepreneurship as a conceptual tool is as much about attitude as about knowledge and skills, the role of students' satisfaction with entrepreneurial education could be regarded as a potentially important factor in managing and predicting entrepreneurship education outcomes.

Studies have mainly utilized quantitative metrics such as number of students enrolled in courses, and number and length of courses. Less attention has been given to the subjective perception of education quality among students – student satisfaction - and its relationship to education effectiveness. Disregarding students' subjective perception of the education experience in researching entrepreneurial education programs and outcomes may be a naïve evaluation method.

Hence, as the concept of satisfaction is widely researched and implemented in a variety of industries it seems as a deepened understanding for its role in entrepreneurship education and its practical applicability in the context of

entrepreneurship education management is important for the theoretical development of the area.

PROBLEM AREA AND EXPECTED KNOWLEDGE CONTRIBUTION

Entrepreneurial and intrapreneurial activities are crucial for societal development and economic growth (Woolcock M., 1998). A wide array of different initiatives exists across the globe that in one way or another attempts to promote entrepreneurial activities to different target groups. On an education level in general and at the level of universities and institutes of higher learning in specific entrepreneurial promotion via educational initiatives seem to be the most preferred model. This study will aim to contribute to the body of knowledge regarding the value of entrepreneurship education, and what it *actually* leads to.

The concrete aim of different entrepreneurship educations differ widely; some aim to create new businesses, some keep the aim more broadly attempting to promote entrepreneurship as a methodology for general problem-solving, some do both and some even differently. Relatively much research has gone into trying to establish a common model for evaluation of those programmes, but as the programmes strive to achieve different goals a common framework for measurements of the impacts of those programmes becomes hard to craft (Fayolle A., Gailly B., Lassas-Clerc. N., 2006). Still, in all instances entrepreneurship educations attempt to contribute to economic growth by generating opportunities for changes in behaviours among individuals by equipping students for entrepreneurial and intrapreneurial actions (Vesper, K.H. and Gartner, W.B., 1997). By applying traditional marketing management models and theories this study will also aim to contribute to the body of knowledge regarding how to effectively manage entrepreneurship education.¹

PURPOSE

This thesis has the purpose to identify, describe and analyse focal factors of entrepreneurship student satisfaction and potential effects thereof.

¹ With reference to the widely used Sam Walton quote “Customer is boss” (among others today used internally at f.m.c.g. brand management company Procter and Gamble), this essay’s title is “Student is boss” replacing the traditional view of the customer by that of the student.

DELIMITATIONS

This thesis concerns entrepreneurship education and with respect to the scale of the study it does not attempt to contribute to a further understanding of the concept entrepreneurship.² Entrepreneurship education is herein understood as education that strives to generate entrepreneurial behaviour among its students. With that approach it is the hope of the study to stay pertinent for the larger body of entrepreneurship education research and practice, while still being relevant in that same context.

Moreover, again with respect to the scale of this study, although the study is conducted across multiple courses and over time it has been chosen to study the student population of one unique entrepreneurship education programme.

This thesis concerns the relationship between entrepreneurship education satisfaction among students and effects thereof. For the benefit of the relevance of the study, the *quality* of the entrepreneurial and intrapreneurial outcomes of the education at hand has not been studied. Also, as this study concerns potential effects of student satisfaction in entrepreneurship education it is necessary to point out that apart from *differences* between non-satisfied and satisfied students the potential effect of non-satisfaction will not be further investigated.

Finally, an amendment concerning the “Third Task of Universities” to the Swedish law for higher education was made 1st of July 2009, stating that “It is part of the task of institutes of higher education to: interact with the broader community, inform about its operations and act so that research results and findings are put to use.” This study does not concern the role of entrepreneurship education in universities’ strategies regarding the Third Task.

DISPOSITION

Following the introductory chapter, the second section examines relevant body of theory for the problem at hand. It introduces the theory by reviewing general education quality management methods, examining important indicators of education quality in general and in the context of education at higher institutes of learning in

² This study is a 15 ECTS Master Thesis.

specific. Following that the concept of satisfaction in general, and potential reasons and effect thereof in specific, are summarized. First and foremost, this section aims to provide a theoretical framework for the problem at hand and generate testable hypotheses on which general conclusions can be drawn.

The third section guides the reader through the methods used in collecting and analysing the data necessary for the study. The will specifically describes the rationale behind the choice and design of survey methods, methods by which relevant data has been collected, and also methods of data analysis. Finally, the section reviews the validity and reliability of the study. First and foremost, this sections aims to describe how, given theory and the empirical setting, the analysis of factors and potential effects of student satisfaction in entrepreneurship education will be conducted.

The fourth section presents the data collected and analyses it. Results from the surveys will be gathered and relevant data for conclusions presented. First and foremost, this sections aims to provide relevant and valid data for conclusions regarding the factors and potential effects of student satisfaction in entrepreneurship education.

In the fifth and final section the results of the two studies and their connections to the purpose at hand will be discussed. Both theoretical and practical implication of the study will be discussed and critique of the study be reviewed. Finally, suggestions for future research will be presented. First and foremost, this sections aims to discuss the findings and make the study as applicable as possible for as well practitioners as researchers.

THEORY

This section aims to discuss the theories that are found to be the most appropriate for the purpose of this study. Theories that describe satisfaction and its role in predicting intentions and behaviour, further complemented by relevant theories about entrepreneurship in general and entrepreneurship education in specific will be discussed.

INTRODUCTION TO THEORY

Today, there is a lack of studies regarding on the one hand the role of student satisfaction in entrepreneurship education and on the other hand the relationship between drivers of entrepreneurial behaviour, its likes and student's assessment of entrepreneurship courses. Moreover, there is a lack of understanding for what a positive and negative student assessment respectively, and anything there in-between, of entrepreneurship courses might lead to, as well short term as long term.

The main purpose of this study is to investigate the factors of student satisfaction and potential effects thereof. Theories and models chosen to be included into the study are selected on basis of their appreciated contribution to solve the problem at hand. By complementing didactic understanding of the concept of "satisfaction" with existing knowledge about entrepreneurship in general and entrepreneurship education in specific there is a hope for a high degree of internal validity in the study (Söderlund, M., 2005).

SATISFACTION

The concept of satisfaction has been described in several studies³. Different studies take different approaches to the concept, but a widely used perception of satisfaction describes it as a mental state in the mind of an individual (Söderlund M., 1997). The state is a result of, and occurs only after, a subjective evaluation of an experience that the individual has been exposed to (Ibid and Yi Y., 1990). A prevalent way to explain this phenomenon is by observing that individuals have expectations on a given

³ A thorough outline is provided by Mägi A., 1996 & Yi Y., 1990.

experience before they are exposed to it. Post experience the individual's subjectively perceived correspondence to the actual expectations is assessed, and a resulting evaluation is created in the mind of the individual. If the individual perceives that the experience met or exceeded the expectations *satisfaction* occurs, if the individual perceives that the experience did not meet the expectations *dissatisfaction* occurs (Oliver RL., 1981). Research suggest that satisfaction should be treated on two levels; first of all satisfaction can concern an individual's relationship to attributes of an offer; secondly satisfaction can concern an *overall assessment* of an experience (Söderlund M., 1997). For applicability on the problem at hand this study will regard the latter form of satisfaction, i.e. satisfaction as the result of a subjective overall assessment of an experience. Thereby, degrees of satisfaction with individual attributes of an experience are regarded as reasons – or *factors* – of satisfaction (Ibid). The state of satisfaction in the mind of an individual seems to have a significant predictive degree on intended behaviour and potential future mental effects that an experience, such as consumption, might have on that same individual (Ibid). Increased behavioural and mental loyalty is often described as potential results of satisfaction, however also resistance and trust seems to be important effects (Ibid). Noteworthy here is that potential effects and their relationships, strengths and scales vary across different product and service consumption experiences. For example, it is probable that a satisfied sitcom-consumer has an increased probability to again watch the sitcom, as opposed to a dissatisfied consumer of the same show. This example also shows the important observation that satisfaction as a concept might vary between different individuals exposed to the same experience. On the contrary, if an individual has a high degree of satisfaction with the service provided by a real estate broker she probably likes her new apartment, why she is less unlikely to return. Hence, the effects of satisfaction are not always trivial, nor are they the same for different services and products.

Furthermore, it is not only the potential resulting effects that might be of value when it comes to the concept of satisfaction, but also the factors of satisfaction can tell us a lot about drivers behind given experience assessment and why different individuals allocate the same experience different degrees of satisfaction. For a practitioner to know that her customers perceives the availability of a support function for the product as a necessary condition for satisfaction, which might be the case for a

technical product like a computer, can be valuable in offering the service demanded by the customer, whereas in other cases availability of a technical support function is not part of the customer's experience evaluation at all; which could be the case in purchase and consumption of a non-technical product as 'bread'.

Thus, satisfaction as a concept does not say so much about an individual's evaluation of an experience, but when we know the different drivers and effects of individuals or groups thereof and preferably are able to observe them over time might have practical implications for a certain product or service management. Finally, understanding drivers and effects of satisfaction may also contribute to a deepened theoretical understanding for relationships, situations and necessary conditions for variables relevant for a specific experience. From this point on in the study "student satisfaction" will refer to "*entrepreneurship* student satisfaction".

CONTEMPORARY ENTREPRENEURSHIP EDUCATION

The increasing number of entrepreneurship education programmes around the world stems from responses to two different demands; on the one hand to the interest among students to undertake entrepreneurial careers, and on the other hand to an increasing understanding among authorities for the role of entrepreneurship in creating economic growth (Fayolle A., Gailly B., Lassas-Clerc. N., 2006). Although entrepreneurship today is recognized as a strong contributor in creating and stimulating economic development within and across economies (Landström, L., 2005) little is known about how to specifically assess entrepreneurship course quality and commonly accepted metrics for sought-after effects are lacking (Volkmann C. and Wilson K. E., 2009). Moreover, suggested entrepreneurship assessments models to date are often either contradictory or ambiguous in-between one another, and usually have a low level of practical applicability (Fayolle A., Gailly B., Lassas-Clerc. N., 2006). It is commonly accepted that economic development and growth via entrepreneurship takes place in at least two corporate settings; through new venture creation (*entrepreneurial behaviour*) and through new business creation inside already established ventures (*intrapreneurial behaviour*) (Landström, L., 2005). Hence, results from entrepreneurship education can be observed on as well an entrepreneurial as an intrapreneurial behavioural level (Vesper and Gartner, 1997).

QUALITY ASSESMENT OF EDUCATION

The area of education quality has had much research, and a number of studies concern quality management of entrepreneurship education in specific (Seymour, DT., 1992). However, many researchers argue that the to date proposed models have little applicability on entrepreneurship education as they in general have a one-size-fits-all approach, and do not take the complex nature of education as a non-static phenomenon in consideration (Fayolle A., Gailly B., Lassas-Clerc. N., 2006). Also, although studies on the direct relationship between entrepreneurship course quality and economic well being do not exist, studies on general education quality suggest a relationship to economic growth (Hanushek E., Woessmann L., 2007). Several investigations of general applicability of service assessment models with consistency on education environment have been conducted, resulting in numerous suggestions for dimensions of student perceived quality in education. Among others a presented framework for dimensions of education quality highlights *students* subjectively perception of the quality (Owila M.S., Aspinwall E.M., 1998). Overall, these frameworks have in common that they substantiate how dimensions of student perceived quality indicators may have a predictive ability on education quality and perceived learning among students (Aitken N., 1982& Athiyaman A., 1997). Student assessed education quality indicators can be categorised in several ways; for example ranked by level of importance or scale; an alternative suggests three *levels* of dimensions (Murray E., Gruppen L., Catton P., Hays R., Woolliscroft J.O., 2000); curriculum structure, perception of faculty and learning environment.

Curriculum structure

Curriculum structure concerns the context of the education. The context of entrepreneurship is unique in that it as a field of research and practice is cross-disciplinary and usually is structured through cross-campus education initiatives (Streeter D.H., Jaquette, J.P., Hovis K., 2002). In turn this affects the structural conditions for the curriculums. Still, although structured in this fashion, the clarity of the curriculum design is a relevant factor in evaluating education quality (Swan K., 2001). The clarity of curriculum design is in large captured by the gap between formulated learning outcomes of programmes and specific courses and what is actually achieved jointly by faculty and students in-class (Trigwell K., Prosser M.,

1991). Originally, learning objectives were seen as important means for adult learners, but today they function as central tools in setting student expectation and serving as points of reference for perceived learning assessment (Otter S., 1995). Moreover, apart from reaching short term individual learning outcomes, education strives to prepare students for a future career. The long term effect and value of education on future career in terms of contribution to employability post graduation plays an important role in quality assessment of education in general (Mathew J., Beatriz J., 1997). As no significant results show that there would be a discrepancy for this variable for entrepreneurship education, even if students strives to undertake an entrepreneurial career, the long term value of education on future career should also play an important role in quality assessment of entrepreneurship education (Ibid).

Perception of faculty

Much is known about the effects of the educators' academic background and competencies, attitudes and motivation in delivering efficient education (Dillon C.L., Walsh S.M., 1992). However, although much of the research regarding how to reach set goals within education stresses the importance of faculty, relatively little research has gone into examining specific and measurable determinants of student perception of faculty (Ibid). Still, students can perceive faculty contributions from several perspectives. First of all, the possessing of relevant knowledge and ability to transfer this knowledge to students appear to be an important factor in students' perception of faculty.

Furthermore, research has also suggested that much of the students' perceived experience quality with faculty comes from the faculty's availability and actual interaction with students, as well inside as outside the class room, as their feedback on assignments and exams (Swan K., 2001). On a further note concerning feedback, student's efforts are evaluated and feed backed by faculty to the students. Thereby, one can assume that also the fashion by which students' efforts are evaluated, and especially the alignment of the evaluation and intended learning outcomes, should affect students' subjective evaluation of their education.

Learning environment

The learning environment concerns a plethora of structural settings that alone or together build up the conditions by which education is experienced. While some research suggest administrative settings as essential quality factors in the learning environment, much research stresses the importance of peer-interaction (Biggs, J., 1999 and Duncombe W., Ruggiero J., Yinger J., 1995). It is trivial to see that the degree by which peer-interaction occurs can depend heavily on the faculty and the degree by which faculty catalyst peer-to-peer interaction, but environmental variables such as class structure also plays a role. Class size determines the availability of peers and provides faculty with the setting of possible peer-to-peer interaction.

Noteworthy with respect to the learning environment is, as mentioned above, the administration of the education. Administration was early recognised as an important driver of education quality (Seymour, DT., 1992 & Mathew J., Beatriz J., 1997).

Finally, as the expectations, in terms of time and effort required from students by faculty define the alternative cost of education, it is believed that the effort required in courses may steer perceived quality of education as a learning environment variable (Duncombe W. et al, 1995).

FACTORS OF STUDENT SATISFACTION

The body of research regarding satisfaction does not necessarily limit its applicability to experiences of commercial products or services. Several studies use the concept of satisfaction to model an understanding for how to effectively design experiences such as medical care (Roghamann K., Hengst A., Zastowny T., 1979) or employments (Boswell W., Shipp A., Payne S., Culbertson S., 2009), that at a first glimpse might seem very different in nature. Even if several researchers have had problems defining the actual customer of education, suggesting, among others, society as a whole or the local or regional governing body, some studies have equated the education experience with a commercial service experience where the student is the customer and the education is the service experience. Still, students can be regarded as *customers of the institutions they attend*, which in turn offer students the education (Sirvanci M., 1996).

Even if several studies of quality management stress the role of subjective evaluations there is no research that per se suggests that quality indicators of education should be

the same as, or even associated with, reasons of student satisfaction. However, the measures suggested by theory (*the course's value for the students' future career, the extent by which the course fulfils the intended learning outcomes, the size of the class, the quality of the administration around the course, the quality of the work by the course director, the quality of the grading system and the effort required in the course*) are all results of a subjective overall assessment of the entrepreneurship education experience. If, and only if, students are exposed to the education experience, much like customers are exposed to the offer of a supplier of products or services, can they leave judgement on these indicators through an evaluation underpinned by emotive motivations (Söderlund M., 2003).

These observations lead the study to formulate the following hypotheses;

Hypothesis I_a: Value for future career will promote student satisfaction

Hypothesis I_b: Fulfilment of intended learning outcomes will promote student satisfaction

Hypothesis I_c: Perceived class size will promote student satisfaction

Hypothesis I_d: Quality of the administration will promote student satisfaction

Hypothesis I_e: The work of the course director's will promote student satisfaction

Hypothesis I_f: The grading system will promote student satisfaction

Hypothesis I_g: The required effort will promote student satisfaction

EFFECTS OF STUDENT SATISFACTION

Understanding that students play the same role in education experiences as customers do in consumption experiences allows us to also regard a relationship between student satisfaction and potential effects thereof (Sirvanci M., 1996). As noted above, entrepreneurship education can generate economic growth and development through stimulating its students to engage in either entrepreneurial or intrapreneurial behaviour. This leads us to formulate the following hypotheses;

HII_a: Satisfied students are more likely to engage in intrapreneurial behaviour than non-satisfied students

HII_b: Satisfied students are more likely to engage in entrepreneurial behaviour than non-satisfied students

As there seem to exist a positive relationship between student retention rate and the scale of entrepreneurial as well as intrapreneurial behaviours among students and alumni, retention rate could play an important role for management of efficient entrepreneurship education. Furthermore, education image and reputation have proven to play a critical role in education institutes ability to attract future students and faculty (Nguyen N., LeBlanc G., 2001). This leads us to formulate the following hypotheses;

HII_c: Satisfied students are more likely to intend to return to entrepreneurship education and training than non-satisfied students

HII_d: Satisfied students are more likely to intend to recommend entrepreneurship education and training than non-satisfied students

As the number of entrepreneurship education initiatives in general and those at universities in specific increase in number and scale day by day, one might assume that organisers of this education see a positive direct result or side-effects of the activities (Kourilsky M., 1995). These results have been recognised also by researchers, for example it has been shown that when universities engage in entrepreneurship education positive externalities such as network effects usually may appear (Minniti M., 2005).

It is therefore interesting to see whether generation of high student satisfaction also could contribute to the universities overall effectiveness in other ways than increasing entrepreneurial and intrapreneurial behaviour. A common communication tool for universities in attracting students are labour market value indicators such as “average entry salary”, “time until employment after graduation” etc. Defining as ≤ 3 years, and long term as > 3 years, this leads us to formulate the following hypotheses:

HII_e: Satisfied students are more likely to have an increased short-term value on the employment market value than non-satisfied students

HII_f: Satisfied students are more likely to have an increased long-term value on the employment market value than non-satisfied students

METHOD

This section of the thesis will first of all describe the pre-work of the study and motivate the approach and choice of empirical data. Secondly, the methods used in the study will be motivated and choice of variables further discussed. Finally, the reliability and validity of the study will be discussed and test settings described.

Pre-work

The first seed for an empirical study inside the area of entrepreneurship education management was planted in discussions with Mikael Samuelsson (Associate Professor at the Stockholm School of Economics and CEO at SSE Business Lab). Further interviews with participants at the Stanford Roundtable on Entrepreneurship Education led the thesis to focus on the area of quality management and the construction of a model with practical implications. A literature review of the topic suggested there is little research on the concept of satisfaction in the entrepreneurship education management literature. As entrepreneurship education programmes are launched frequently across the globe it was interesting to investigate the structure of an entrepreneurship education satisfaction model.

Structure

The structure of the thesis constitutes of two different, still complementary, studies:

- *Study I* concerns the hypotheses attempting to describe the relationships between the factors of student satisfaction and student satisfaction.
- *Study II* concerns the hypotheses attempting to describe the relationships between student satisfaction and the effects thereof.

Empirical setting

Data for the studies have been collected from surveying graduated students from courses within the framework of the Stockholm School of Entrepreneurship (hence forth SSES). Structurally the school functions as a coordinating platform for entrepreneurship education and training across five universities; Karolinska Institute, Royal Institute of Technology, Stockholm School of Economics, Stockholm

University and Konstfack University College of Arts, Crafts and Design. The formal aim of the organisation is “to develop and conduct education and training in entrepreneurship, and to create conditions and opportunities for entrepreneurship and business creation, in the first instance for students and researchers with a foundation in research-based ideas”, why the school should function as a reliable pool for data collection.

STUDY I – FACTORS OF STUDENT SATISFACTION

The aim of this study is to describe the relationships between the factors of student satisfaction and student satisfaction . To do so hypotheses have been constructed and potential relationships will thereby be investigated and tested through a quantitative research method, which apart from simplifying the analysis also should contribute with a high degree of reliability (Malhotra N., Birks, B., 2006).

Data

Since the inception of SSES in 1999, students successfully graduating from courses offered within the partnership have been surveyed on their experiences with the courses.⁴ The surveys have included a wide set of questions, measuring everything from perceived quality of the courses to the provision of mentoring networks. However, the design of the surveys varies a lot due to continuous changes in the internal work processes why the method for measuring quality has been inconsistent. In 2006 all perceived quality indicators were adjusted to include measures of student satisfaction and loyalty. A review of the satisfaction metrics used in the surveys shows that they are posed as statements where students were asked to rank the agreement on a 5-point Likert scale (where a 1 represented lowest possible value “I strongly disagree”, and a 5 represented highest possible value “I strongly agree”). The statements used are “Overall, I am satisfied with this course”, “The course corresponded to my expectations”, and “This course was close to being a course perfect in all senses”. Hence, questions are asked in general terms. A reliability analysis yields a Chronbach’s Alpha of 0.903, which indicates a good applicability of the surveys to the study at hand (Day RL., 1987). Furthermore, the surveys have also

⁴ Information regarding the total number of unique student examinations from the school varies, but encompass at least 4000 student graduations.

been sent to students failing to graduate from the courses, hence also capturing students that are likely to have the least positive image of the education experience.

Characteristics of the surveys

All surveys have been sent out after the final lecture of given courses. The actual timing of the distribution of the surveys has varied somewhat depending on course; sometimes the survey has been sent out directly after examination, other times the actual timing of the distribution has been later, although it has been done post examination. With no exceptions, the collection of surveys concern all courses that have been offered since the start of academic year 2005/2006, adding up to 38 courses with a total of 1386 respondents.⁵

All surveys have been sent out electronically to all registered participants in courses. Students who have completed examination, with both successful and failing results, and students that have chosen to drop out, or for any other reason ended up not completing the course, have received the same survey. Branching inside the course survey has been used to lead these three categories of students to three different surveys; students who were registered but did not start or only participated in a little part of the course are led to only answer questions concerning why they did not complete the activity, students who participated in the course but for one reason or another did not go through examination are led to answer the full survey, but with complementary questions on why they did not graduate. Finally, students who graduated from the course are led to answer the majority of the questions, but excluding the complementary questions for the previous.

Questions, measures and scales

The course surveys includes four sections; the first section defines the extent by which the student has participated in the actual activity and in turn defines which version of the survey the respondent is exposed to. The second part collects data on the student's demographic profile: gender, academic background and previous entrepreneurship training. The third part collects data relating to the student's experience with the actual course. The fourth part varies across surveys, but in general

⁵ For a complete listing of these courses, please refer to www.sses.se

this section includes questions that are course offering specific such as specific guest lectures contributions or usability of new course web functionality.

Summing up the total number of unique questions used throughout the surveys adds up to 113 questions with various scales and measures used throughout the surveys. With construct validity in mind all questions not relating to student satisfaction or one of the seven proposed factors of student satisfaction were removed (Söderlund M., 2005). Among the 113 questions in the surveys a total of 22 (see below) were finally selected as they were assumed to best reflect each respective category of potential factor. In instances where Chronbach's alpha exceeded 0.7 the individual dimensions were indexed, otherwise not (see below).

Learning objectives: According to education management theory clarity of learning objectives are important as they may explain the clarity of the curriculum design, and in that they set expectation levels for students before the course. To measure this the thesis will use the degree of agreement students have with the statement "The aims and objectives of the course were clear". Students are asked to rank their agreement with the statement on a 5-point Likert scale. As no other measures for learning objectives exist in the surveys, no scale reliability analysis has been conducted.

Future career: Research suggests the impact of a given education as an important indicator of education quality in general. This study has chosen a double-query dimension to measure the student's perceived value of the entrepreneurship education on the subjects' future career. The chosen questions are "The participation in this course is valuable for my business/career", and "The subjects taught in this course are essential to my future career". The questions are measured on a 5-point Likert scale. Furthermore, an index with a Chronbach's alpha of 0.805 could be computed from the two questions.

Class size: As this thesis concerns the effect of *perceived* class size *actual* class size is not taken into consideration. Perceived class size is believed to affect the students' ability to interact with peers, which has been suggested as an important factor in quality management of education in general. For the purpose the question where subjects were asked to state their agreement with the statement "The size of the class

was good” was chosen. The question is stated on a 5-point Likert scale. As no other measures for learning objectives exist in the surveys, no scale reliability analysis has been conducted.

Administration: The quality of the administration concerns an important education quality indicator when it comes to the learning environment. In this study two separate multi-query dimensions have been used to capture students’ perception of the administration. First of all, students were asked on their subjective perception of the course’s general administration by asked to rank their agreement to two statements; “The administration and organisation before the course were good”, and “The administration and organisation during the course were good”. The questions were measured on 1-5 Likert scales, where a 1 represents lowest possible value “I strongly disagree”, and a 5 represents highest possible value “I strongly agree”. Secondly, students have been asked specifically about their perception of the work of the course administrator by declaring agreement with the statements “What did you think about the course administrator’s overall course administration” and “What did you think about the course administrator’s accessibility and willingness to spend time communicating and helping course participants”. The questions were measured on 1-5 scales, where a 1 represents lowest possible value “Not so good”, and a 5 represents highest possible value “Great”. The Chronbach’s alpha for the four questions amounted to 0.746, and as Chronbach’s alpha only decreased if items were deleted an index of the four questions was created.

Faculty: Suggested as one of the most influential variables on education quality the contribution of faculty seems to have several dimensions. According to literature the faculty’s knowledge, ability to communicate this knowledge to students, their accessibility and feedback seem to play important roles in students’ evaluation of the education as a whole. Four questions from the course surveys have been regarded for this purpose. All questions are posed as statements and subjects are asked to state their agreement to “What did you think of NN’s contributions in the following areas: Presentation; Knowledge; Being accessible and willing to spend time communicating and helping course participants”. The answers were constructed as 1-5 scales, where a 1 represents lowest possible value “Not so good”, and a 5 represents highest possible value “Great”. The Chronbach’s alpha for the four questions amounted to 0,783, and

as Chronbach's alpha only decreases if items were deleted an index of the four questions was created. Noteworthy, by removing the course director's presentation skills from the index would result in a Chronbach's alpha below 0.7.

Grading system: The grading system is thought to affect the perception of students' experience with education as it in turn evaluates the students' efforts in the course. Two statement-questions have been selected to represent the student's perception of the grading system; "The grading system evaluated my efforts during the course" and "The grading system tested my understanding of key theories and/or methods taught in the course". The two questions are measured on a 5-point Likert scale. A Chronbach's alpha of 0.86 motivated the construction of an index of the two questions at hand.

Effort requirements: The effort required from the student should be important in understanding students' assessment of the education learning environment experience as it among others captures the alternative cost of education. This study will use a single question to attempt to capture this "The overall effort required in the course should be", posed on a 1-5 scale where 1 represented lowest possible value "Lesser", and 5 represented the highest possible value "Greater". For the purpose of a high construct validity in the study the question was re-coded to fit the 1-5 scales used in the other questions.

STUDY II – EFFECTS OF STUDENT SATISFACTION

The aim with Study II is to explore the relationship between student satisfaction and suggested effects thereof. To do so hypotheses have been constructed and potential relationships will thereby be investigated through a deductive and conclusive research design. The hypotheses will be tested through a quantitative research method, which a part from simplifying the analysis also should contribute to a higher degree of reliability (Malhotra N., Birks, B., 2006).

Data sample

At the time of this thesis SSES had just updated its entire registry of alumni coordinates, and although response rate is not the sole condition for reliability, the timing of the study is good as it is likely that as many as possible of the alumni

contact coordinates are valid. It is assumed that the data kept by the school is correct, and that the extensiveness of it will further contribute to reliability in the study. As the collection of data includes a vast majority of the graduates from the education and training program at the time of the study, the number of respondents (n=1452) should be considered good and sufficient for the study at hand. Furthermore, the respondents represent a wide spread of nationalities, gender and academic background.

Survey design

The registry of alumni data includes valid e-mail coordinates to 1452 of the entrepreneurship education alumni, why an electronic survey format has been chosen to understand potential effects of student satisfaction in entrepreneurship courses (Graziano, M., Raulin, M., 2009).

The survey was sent out electronically using the online survey manager software Questback.se. Recipients were able to either answer the survey or decline to be part of it (response rate = 44%). For recipients that chose neither a total of three reminders were sent up until the recipient either answered or chose to decline to participate. SSES had, by trial and error, identified that they receive the highest possible response rate on surveys among their students and alumni if the surveys are sent out Saturday morning, and by setting reminders to go out every one week after the first e-mail. Following that logic this survey was distributed by the same fashion (Ibid).

Although response rate itself is not significant for the reliability of the survey three actions have been executed to try to increase the number of respondents:

1. The sender of the survey has been set to be a person known to as many respondents as possible. The current SSES Course Co-ordinator is someone that a majority of the respondents have met throughout their studies at the school. By making the survey more personal and connected to this person response rate is expected to increase (Kent R., 2006).
2. By participating in the survey the respondent participated in a lottery of seven restaurant dinners at a value of approximately 100 € each. Respondents are asked to enter their e-mail at the end of the survey to participate. Although

there is the risk that this use of incentive may increase the number of respondents that participate and does not give reliable answers it is the hope of the author that these entries will be eliminated by an already high degree of reliability, and that the potential positive effects outweigh the potential negative.

3. The survey has been constructed to be as easy as possible for the respondent to complete. Although more information is preferred in the analysis, the balance to get reliable data has led to some compromises, for example the survey was constructed in English only, students are not asked the number of entrepreneurship courses they have participated in, but an estimate. However, it is, also here, the belief of the author that the potential positive effects of doing so outweighs the negative side-effects and that the survey will still capture the questions relevant for the study (Kent R., 2006).

Questions, measures and scales

Six sets of questions constitute the questionnaire; one for measuring student satisfaction, and one for each respective potential effect of student satisfaction *entrepreneurial and intrapreneurial behaviour, employment market value short and long term and recommendation and retention intent*. The survey is constructed as such that the respondent is asked to rank her level of agreement to statements on Likert scales on 1-5, where a 1 represents lowest possible value “I strongly disagree”, and a 5 represents highest possible value “I strongly agree”. Where nothing else is mentioned the same interval is used for the remainder of variables.

Student satisfaction is measured the same way student satisfaction is measured inside the course surveys. This should account for a high reliability in the measure, and comparability across results. Furthermore, a reliability scale test generates a Chronbach’s alpha of 0.90, and a student satisfaction index is constructed of the three questions.

Entrepreneurial behaviour: is a prime desired outcome of entrepreneurship education. In this thesis, entrepreneurial behaviour has been measured as a dichotomy variable where subjects are asked if they “have been involved in a start-up that included a

formal company registration, and in which they have or have had a formal owner share”. Compared to other studies this should be considered a narrow definition of entrepreneurial behaviour. However, as this question seeks to understand relationships that are different from intrapreneurial behaviour a clear distinction between the two is important. The question is measured on a binary 0-1 scale, where a 0 indicates “No” and 1 indicates “Yes”.

Intrapreneurial behaviour: is also regarded as a prime desired outcome of entrepreneurship education. The intrapreneurial aspect is in nature more wide in its definition than entrepreneurial behaviour and hence more complex to capture in a survey. After consultations with entrepreneurship education professionals it was decided to ask subjects about their agreement with the following statement “Having studied entrepreneurship has taught me to act more intrapreneurially at places I have worked”. Subjects were asked to respond on a 5-point Likert scale.

Short and long term employment market value: is proposed as important results of entrepreneurship education. This thesis will measure entrepreneurship students’ employment market values by asking subjects to rank their agreement to the following two statements; “Having studied entrepreneurship has increased my value on the employment market short term”, and “Having studied entrepreneurship has increased my value on the employment market long term”. Subjects were asked to respond on a 5-point Likert scale. One could have considered also collecting objective test data, as for example employment frequency statistics, but as this data is hard to acquire this thesis will settle with the above-proposed questions.

Retention rate intentions: concerns prediction of student future behaviour in relationship to the entrepreneurship education, for example interest to attend to alumni activities. This was evaluated by asking subjects to rank their agreement to the statement “I would like to participate in entrepreneurship alumni activities (for example breakfast seminars and inspirational lectures)”. Subjects were asked to respond on a 5-point Likert scale. As a strong relationship has been shown in previous research between satisfaction and retention rate (Söderlund M. 2001) and for the purpose of keeping the survey short a multi-query dimension was not chosen for this very variable (Kent R., 2006).

Recommendation intentions: concerns student intention to recommend the entrepreneurship education to others. This was measured by asking subjects to state their agreement with the statement “I would recommend other students to participate in this entrepreneurship education”. Subjects were asked to respond on a 5-point Likert scale. As a strong relationship has been shown in previous research between satisfaction and recommendation rate (Söderlund M. 2001) and for the purpose of keeping the survey short a multi-query dimension was not chosen for this very variable.

RELIABILITY AND VALIDITY

Statistical validity concerns the extent by which a measure is free from as well statistical as random errors of measurement. With the purpose to assure that the thesis kept a high degree of validity the following was regarded in the design of the research and surveys (Söderlund M., 2005):

To ensure construct validity the thesis and its methods built on theoretically already established constructs and measures. Where constructs and measures did not exist in theory all employed such were discussed and elaborated on with experienced experts in the field of education in general and entrepreneurship education in specific.

To ensure that the study actually measured what it was intended to several discussions and statistical methods underpin the methods used in this study. Discussions with experts in the field led up to the construction of measures and creation of questions. By also using several measures for different factors and effects it was the hope of the author that this thesis would have a high degree of content validity.

As the observed values were collected over several years and at different times the extent by which the observed effects and values in the study were able to explain by means other than the manipulation in the study was appreciated as low.

Although the external validity of this thesis was appreciated as satisfactorily for the purpose at hand one should keep in mind that even though data was collected over time and from a large number of respondents they were all gathered from one single institute of entrepreneurship education (SSES).

Reliability concerns the extent by which the observed value and the actual value deviates due to random statistical error (Söderlund M., 2005). Hence, reliability concerns whether the results from a test will be consistent if the study is repeated (Malhotra, 1999). With the purpose to assure that the thesis had a high degree of reliability the following was regarded in the design of the research and the surveys:

The studies were based on theoretical reviews of potential measures of factors of satisfaction in general, and student quality perceptions in specific. Where necessary, complementary studies were used to confirm, and explore other potential factors specific to entrepreneurship education. Where possible the use of multi-query dimensions were used, and dimensions that negatively contribute to the reliability were possible to exclude. Where internal consistency could be an issue it was controlled via Chronbach's Alphas, where a minimum of 0.7 was been accepted (Malhotra, 1999). Tests for internal consistency signalled nothing but a high reliability in the study (see below). Unfortunately, given the static structure of the course surveys, order effects of questions might have affected the reliability of Study I negatively.

Finally, the reliability of the thesis further gained from that all surveys were collected in the same language the student was trained; English. Having used only one language plausibly minimized the risk for unfortunate translations.

Instruments of data collection and data analysis

Appropriate methods of analysis were identified as being linear regression, independent t-tests and correlation analysis. Therefore SPSS 16.0 for Mac was used for all analysis. Data for Study I was extracted from the course surveys kept in Excel records and the online survey manager software Questback.se. Data for Study II was exported from the online manager software Questback.se, and imported into SPSS. For all hypotheses HI and HII, it was chosen to only accept results at a significance level of 0.01%.

ANALYSIS

In this section of study the proposed hypotheses will be tested and analysis of data and results thereof be presented.

INTRODUCTION

In total 13 hypotheses have been suggested within this study. The first section concerns hypotheses regarding facets of student satisfaction, and the second section concerns the potential effects of student satisfaction.

STUDY I – FACETFACTORS OF STUDENT SATISFACTION

Hypotheses $HI_a - HI_g$ concern the factors of student satisfaction. As an approximate linear relationship can be assumed, all hypotheses have all been tested using linear regression, thereby being able to model the relationships between the variables *career value*, *objective fulfilment*, *class size*, *administration*, *effort*, *course director*, *grading* and *student satisfaction*. Results from the linear regression can be found in the tables below:

TABLE 1: DESCRIPTIVE STATISTICS FOR STUDENT SATISFACTION

Factor (Independent variable)	Mean	STD deviation
Career value	3.47	1.23
Objective fulfilment	3.76	1.20
Course director	3.48	1.40
Grading	3.22	1.11
Class size	3.44	1.37
Effort	3.47	0.96
Admin	3.55	1.26

n=1386

TABLE 2: LINEAR REGRESSION FOR STUDENT SATISFACTION

Factor (Independent variable)	Standardized Beta
Career value	0.30**
Objective fulfilment	0.25**
Course director	0.19**
Grading	0.13**
Class size	0.09**
Effort	0.12*
Admin	0.09**

n=1386, *p>=0.05, **p<0.001, adjusted R²=0.66

First of all, the study shows that *effort* is non-significant in explaining the variance of the measure in order to be considered to have a significant effect on student satisfaction. Therefore, *effort* is excluded from the linear regression model.

Secondly, the study shows that *career value*, *objective fulfilment*, *class size*, *administration*, *effort*, *course director* and *grading* seem to be significant factors of student satisfaction. All drivers are confirmed on a strong level of significance (<0.001%).

Co-linearity analysis was conducted in order to be able to exclude linear relationships between the different predictive factors. The largest condition index equals 13.63, suggesting that co-linearity is not a concern in the model at hand.⁶

As previous research of entrepreneurship student satisfaction does not exist an approximate expected value of determination coefficient is hard to define, however values higher than 0.3 in social surveying should be considered as high.⁷ The analysis suggests that 66% of the variability in the data is accounted for by the proposed statistical model. Removing any of the factors results in a decreased R² for the model. Hence, the goodness of fit of the above suggested regression model should be considered good.

⁶ Interview with Ass. Prof. Mikael Samuelsson

⁷ Interview with Ass. Prof. Mikael Samuelsson

Career value concerns to what extent the education and training in general terms is valuable and essential for the student's intended future career. Education quality studies suggest that future career is an important predictor of course quality. Among the proposed factors of student satisfaction the model suggests that perceived future career value is the most influential factor of student satisfaction. Furthermore, the effect of career value is more than three times as influential as that of administration, being the least influential factor. Remarkable here is that the measure does not take into account whether or not the student intends or prefers an employment career or a self-employed career. The high importance of the career value further validates previous studies, and is probably connected to the very basis of education, namely the ways by which an education can prepare the student for a future career, no matter if that has to do with an employment or self-employment (Swan K., 2001).

Learning objectives concerns the clarity of and extent by which the course has fulfilled its intended learning outcomes. The importance of this measure was suggested by previous researchers as important in education quality studies, but not as important as it turns out for a student satisfaction model. The linear regression concludes a beta of 0.25, meaning that among the factors objective fulfilment is the second most important. The beta is approximately 84% that of the most important factor, and almost three times that of administration. As satisfaction to some degree has to do with expectations correspondence the importance of the objective fulfilment is probably in large due to its connection with the expectations of the students before the course.

In education quality studies the contribution of the faculty is several times referred to as one of the most important dimensions of quality. The results from this study suggests that the work of the course director is neither as important as the future career value nor the objective fulfilment. Furthermore, the course director only affects the student satisfaction by approximately 60% compared to the effect of the career value. However, the course director accounts for a beta of 0.190, which is more than twice that of administration and class size.

Education quality studies and research has shown ambiguous results regarding the role of grading in general education quality. Grading has herein been defined as the extent by which the student perceives the grade's ability to measure efforts in the course and understanding of theories and models in the course, thereby disconnecting the measure from the actual grade allocated to the student. With a beta of 0.13 the test suggests the grading as being an important driving factor of student satisfaction. The beta is less than half of the career value, and less than half of the administration. Still, it is important to add that this study has not considered the actual grade allocated to the student, neither absolute nor relative the class or the student's previous study performances.

Class size is believed to facilitate students' interaction, which in general education quality has been suggested as an important driver of education quality. This study suggests that classroom size indeed has an effect on the satisfaction among students. Moreover, the linear regression model shows a beta of 0.09, which is less than a third than that of the most influential factor. However, the thesis has not correlated the perceived quality with the absolute nor relative size of the course.

Administration has through education quality research been identified as an important quality indicator of the learning environment to which students are exposed (Kourilsky M., 1995). Some literature even suggests administration as a necessary condition for the existence of a learning environment per se. The variable administration was herein measured as a combination of the administration conducted by both the course assistant and other non-defined administrative support functions, as well before as during the course. This thesis suggests that with a beta of 0.09 administration is one of the six most important factors of student satisfaction, still less than a third than that of the most important factor, and also almost a third of the second most important factor.

Although suggested by theory as an important driver of student satisfaction the factor effort, measuring perceived required effort in the course, is concluded to not explain variance in student satisfaction satisfactorily significantly. This may in part a construct validity concern in that there might a discrepancy in students' perception of the term "effort" and to that of theory, but foremost this signals that there from time to

time is an incongruity in the perception of drivers of student satisfaction and actual predictors of the measure.

Summary

In sum, the study supports that there is a significant positive relationship between *objective fulfilment, class size, grading, career value, administration, course director* and *student satisfaction*, and that co-linearity is not a concern in these relationships. With career value as the most important factor and administration the least important factor the model yields an adjusted R^2 of 0.66.

STUDY II – EFFECTS OF STUDENT SATISFACTION

This section aims to test the potential effects of student satisfaction in terms of entrepreneurial activities, intrapreneurial activities, employment market value and recommendation intent rates.

First of all, given the sample size ($n=638$) the data can be assumed to follow a normal distribution (response rate = 44%). In order to assess the significance of the effects of student satisfaction among satisfied students independent t-tests were conducted. For that reason, the variable *student satisfaction* was divided in two groups; “not satisfied” and “satisfied”. The cut-off point for the two groups was chosen to 4, where values of student satisfaction <4 are defined as “non-satisfied” and values of student satisfaction ≥ 4 are defined as “satisfied”. Moreover, using 4 as a cut-off point turns out well as it leads to two almost equally sized groups of 342 and 296 respondents respectively. The table below describes the results from the tests:

TABLE 3A: EFFECTS OF STUDENT SATISFACTION

Effect	Mean: satisfied	Mean: non-satisfied	Mean difference
Entrepreneurial behaviour	0.42	0.26	0.17
Intrapreneurial behaviour	3.95	3.07	0.88
Employment market value, long term	3.79	2.86	0.93
Employment market value, short term	3.57	2.77	0.80
Retention intent	4.28	3.10	1.185
Recommendation intent	4.21	3.40	0.81

Significance level $p < 0.01$, $n=638$

To get a further understanding for the strengths and direction of the relationships between student satisfaction and the effects thereof a correlation analysis was conducted. Table 3B below describes the results from the tests:

TABLE 3B: CORRELATION MATRIX; STUDENT SATISFACTION AND EFFECTS OF STUDENTS SATISFACTION

	1.Student satisfaction	2.Entrepreneurial Activity	3.Intrapreneurial Activity	4.Employment market value, short term	5.Employment market value, long term	6.Retention intent
1.Student satisfaction	1	0.13	0.57	0.49	0.53	0.45
2.Entrepreneurial Activity	0.13	1	0.09	0.14	0.12	0.29
3.Intrapreneurial Activity	0.57	0.09	1	0.49	0.60	0.41
4.Employment market value, short term	0.49	0.14	0.49	1	0.75	0.32
5.Employment market value, long term	0.53	0.12	0.61	0.75	1	0.36
6.Retention intent	0.45	0.29	0.41	0.32	0.36	1

Significance level $p < 0.01$, $n = 638$

From above it follows that satisfied students are assumed to, in a larger extent than non-satisfied students, to be involved in entrepreneurial activities. On the 0.01% significance level the t-test shows that satisfied students were involved in entrepreneurial activities almost twice as often as non-satisfied alumni. Among the possible outcomes of student satisfaction measured in Study II Entrepreneurial Activity seems to be the most important.

As relatively little time has passed since the majority of students graduated from the education the weak level of correlation should be expected, as such this is a measure that most probably will increase over time.

Intrapreneurial activity is a measure disregarded in a large proportion of the body of research concerning entrepreneurship education. An independent t-test finds support for the hypothesis that satisfied students are more prone than non-satisfied students to engage in intrapreneurial activity. The individual means of 3.95 and 3.07 respectively the mean difference equals 0.88,. Furthermore, a correlation analysis shows that intrapreneurial activity and student satisfaction is strongly correlated ($r=0.57$). The degree of correlation is significantly higher than that of entrepreneurial activity, which might be explained by time frame and the possibility to engage in intrapreneurial activities is inherent in many of the positions offered to university students (Brown P., Scase R., 2004).

The employment market value has been divided into two different time variables; short term and long term respectively. Expectations on the effect of the education on the participating student's employment market value are ambiguous. The independent t-test shows a significant mean difference of more than 30% between the non-satisfied and satisfied students, indicating an importance of student satisfaction when it comes to creating employment market value long term. Furthermore, a correlation analysis supports the existence of a potential relationship between the degree of long-term employment market value and student satisfaction. The correlation coefficient equalled 0.52. Compared to the other potential effects of student satisfaction, but entrepreneurial activity, long-term employment market value has an approximate equal strength in relationship to student satisfaction.

The other of the two employment market variables regards the value from a short-term perspective. The independent t-test shows that there is a significant mean difference between the short-term employment market value and satisfied and non-satisfied students. The mean difference is close to that of the long-term employment market value, namely 29%. Furthermore, the relationship between student satisfaction and short-term employment market values is shown in a strong correlation coefficient value close to 0.5. Still, the measured coefficient value is somewhat lower than all of the other variables. This difference might explain the student's relatively good appreciation of employment market values proxy in time, and might signal that the relationship between employment market value long term and student satisfaction is in fact an overestimation from the respondents.

As suggested by theory and loyalty studies in specific return rates are significantly higher among satisfied students than among non-satisfied students. The mean difference is 1.18 and there exist a 0.48 correlation coefficient between return intent and student satisfaction, which furthermore indicates a relatively strong continuous relationship between the level of student satisfaction and return intent.

Recommendation intent

As suggested by theory and previous satisfaction and loyalty studies, recommendation intents are higher among satisfied students than among non-satisfied students. The mean difference indicates an almost 25% higher degree of recommendation intents among satisfied alumni. Furthermore, the correlation between student satisfaction and recommendation intent is 0.45, which is expected in this kind of study (Mittal V., Kamakura W., 2001). Hence, the more satisfied students are with the provide education and training, the more likely they are to intend to participate in more educational and training activities.

Summary

In sum, Study II supports that there is a positive continuous relationship between student satisfaction and entrepreneurial behaviour, intrapreneurial behaviour, employment market value short term, employment market value long term and student recommendation and return intent respectively. It appears as if among the identified variables student satisfaction affects entrepreneurial activity the most and student recommendation intent the least.

SUMMARY OF RESULTS

Hypothesis I _a : value for future career will promote student satisfaction	SUPPORTED
Hypothesis I _b : fulfilment of intended learning outcomes will promote student satisfaction	SUPPORTED
Hypothesis I _c : perceived class size will promote student satisfaction	SUPPORTED
Hypothesis I _d : quality of the administration will promote student satisfaction	SUPPORTED
Hypothesis I _e : the work of the course director's will promote student satisfaction	SUPPORTED
Hypothesis I _g : the grading system will promote student satisfaction	SUPPORTED
Hypothesis I _h : the required effort will promote student satisfaction	REJECTED
HII _a : Satisfied students are more likely to engage in intrapreneurial behaviour than non-satisfied students	SUPPORTED
HII _b : Satisfied students are more likely to engage in entrepreneurial behaviour than non-satisfied students	SUPPORTED
HII _c : Satisfied students are more likely to intend to return to entrepreneurship education and training than non-satisfied students	SUPPORTED
HII _d : Satisfied students are more likely to intend to recommend entrepreneurship education and training than non-satisfied students	SUPPORTED
HII _e : Satisfied students are more likely to have an increased short-term value on the employment market value than non-satisfied students	SUPPORTED
HII _f : Satisfied students are more likely to have an increased long-term value on the employment market value than non-satisfied students	SUPPORTED

DISCUSSION

In this section the fulfilment of the purpose at hand and implications for as well theory as practice will be discussed. Furthermore, the weaknesses in the thesis will be put forward and finally a suggested direction for future research be presented.

FULFILMENT OF PURPOSE

This thesis has the purpose to identify, describe and analyse focal factors of entrepreneurship student satisfaction and potential effects thereof. The thesis suggests that focal aspects of entrepreneurship student satisfaction are *career value, learning outcomes, class size, administration, faculty and grading system*. The thesis suggests that effects of entrepreneurship student satisfaction are *entrepreneurial behaviour, intrapreneurial behaviour, short term employment market value, long term employment market value, retention intents and recommendation intents*.

THEORETICAL IMPLICATIONS

The research field of entrepreneurship education quality management is important as it, among others, strengthens the understanding for how to effectively generate economic growth and development by increased entrepreneurial and intrapreneurial behaviour. Still, research has in large disregarded the aspect of students' subjective perception of the education experience, where that stems from and implications thereof. This thesis proposed a model where student satisfaction was hypothesised to explain the effects and factor of students' education quality perceptions. Furthermore, the thesis shows that the model is strong in explaining differences in intentions, behaviours and employment market values among satisfied as opposed to non-satisfied students. Moreover, the study generates results specifically important for individual factors and effects of student satisfaction:

Curriculum structure

This thesis shows that the curriculum structure is dominating in its role in building student satisfaction in entrepreneurship programmes. La raison d'être of entrepreneurship education programmes was originally to respond to individuals' interest in an entrepreneurial career. Not so surprisingly does the career value of the entrepreneurship education turn out to be the most important driver of student

satisfaction. Student's long term consideration of the value of their education seems to prevail also in entrepreneurship education. This is an important finding with respect to previous studies that does not attribute career value the same level of importance as this study. It is also an interesting finding as career value herein was measured as student's perception of the value, without considering students' interest in traditional employment or self-employment.

The importance of the curriculum structure is prevalent also when it comes to the direct objective fulfilment of the entrepreneurship education. The clarity of learning outcomes is suggested as the second most important factor of students' satisfaction with entrepreneurship education. In large it is likely to assume that this importance is connected with the role of learning outcomes in setting expectations on the education experience for student pre the education experience. The results for this variable are in line with current theory and reinforce the importance of objective fulfilment also in entrepreneurship education.

Perception of faculty

This thesis suggests the perception of faculty as the second most important component in entrepreneurship education when it comes to building student satisfaction.

First of all, the perception of the course director in general is concluded as the most important driver of student satisfaction. Among the dimensions that construct students' experience with the course director, the presentation skills prevail as the most important aspect, i.e. more important than perceived knowledge, availability and quality on feedback. Interestingly enough this measure does not take into account traditional measures as academic background and competencies, attitudes and motivation of faculty.

A relatively little studied variable of education quality in general is student's perception of the grading system. This thesis suggests that the fashion by which students' contributions are evaluated plays a key role in students' perception of faculty. Interestingly enough, this result does not take the actual grade allocated to students into consideration.

Learning environment

First of all, learning environment does play a role in creating student satisfaction, but among the researched dimensions in this study it plays the least important role, still close to that of student's perception of faculty. The power of the learning environment is still *very* close to the importance of the perception of faculty.

First of all, the class size is the most important learning environment variable is the class size, which facilitates students' interaction with peers. Importantly, this study has not taken the actual size of the class into consideration, instead students have been asked to declare their perception of the size. Secondly, the administration surrounding the education is shown to be a significant learning environment variable. The administration captures as well the role of class administrators as the general administrative setting. Noteworthy is that administration is important during, and *before* the course.

Effort is believed to affect the satisfaction evaluation primarily for its role of capturing the effect of alternative cost of education. In the context of learning environment, contrary previous findings, effort required from the courses did not significantly affect student's satisfaction perception of the entrepreneurship education.

Entrepreneurial and intrapreneurial behaviour

Previous research has shown the role of entrepreneurship education in stimulating entrepreneurial behaviour, but not its connection to student satisfaction. This thesis suggests that entrepreneurship education may lead to as well entrepreneurial as intrapreneurial behaviour among participating students. Moreover, satisfied students are 63% more likely than non-satisfied students to engage in entrepreneurial behaviour, and 28% more likely to engage in intrapreneurial behaviour. Furthermore, the study suggests a strong positive relationship between the degree of satisfaction and intrapreneurial behaviour (the same relationship exist for entrepreneurial behaviour, although not as strong).

Employment market values

The relationship between student satisfaction in entrepreneurship education and employment market values has not been researched in detail before. This thesis shows that satisfied students, as opposed to non-satisfied students, tend to have a higher employment market value as well short as long term, with an close to equal effect of 30% and 29% respectively. Furthermore, the thesis suggest that the more satisfied

students are the higher employment market value they have, especially when it comes to long term value evaluation. The role of self-reporting and potential self-selection in this variable has not been investigated, nor has it been compared to other comparative data such as employability and job satisfaction measures (please refer to the chapter on Future Research).

Retention and recommendation intents

The role between satisfaction, retention and recommendation rates has been carefully researched in previous studies, but not specifically on an entrepreneurship education level. This thesis suggests that satisfied students are 38% more prone than non-satisfied student to return to entrepreneurship education, and that they are 25% more prone to recommend it. Furthermore, the study suggests that the more satisfied students are the more prone they are to as well recommend it, as they are to return to it. It is important to note that the study is carried out in a setting where students are able to return also after graduation.

MANAGERIAL IMPLICATIONS

First of all, this thesis has again depicted the potential and applicability of satisfaction as a management concept. The results of this study are identified to in large being specifically applicable for three groups; school management, entrepreneurship programme managers and entrepreneurship educators.

School management

Inclusion of entrepreneurship education in higher education is more and more frequent, still little is known about the specific needs and characteristics of these programs when it comes to effectively manage them. The factors of student satisfaction can guide the overall school resource allocation decisions and more specifically contribute in policy programs for priorities and decision concerning curriculum structure, learning environment and faculty development and recruitment. Moreover, this thesis suggests that entrepreneurship education indeed is a way to stimulate entrepreneurial and intrapreneurial behaviour among students at the school. The thesis has presented a model that on a school management level over time could be used as a benchmark across programs. However, this requires that satisfaction is measured across different programs, and preferably that models unique for separate

programs are developed, but with the same measure of the concept of student satisfaction. Noteworthy, as entrepreneurship education outcomes function as important efficiency metrics on a school level this study promotes the value of quality management with education in general and of entrepreneurship education in specific at a school management level. Finally, this thesis shows that schools with satisfied students are more likely to also have students that are valued by the employment market, as well short as long term. One might therefore speculate that entrepreneurship education may have results for school performance other than the intended purposes.

Entrepreneurship program managers

First of all the model reported in Study I provide entrepreneurship program managers with an understanding for how students evaluate their participation in entrepreneurship programs. Using a satisfaction based surveying of programs in general and courses in specific allows for program managers to benchmark across individual courses and over time construct quality indexes with quality management applicability. It also allows for them to construct reactive total quality management models on an individual course level. Furthermore, understanding factors of student satisfaction facilitate for them to efficiently allocate resources on an individual course and factor level.

Moreover, this thesis shows that program managers should keep in mind to design programs that as a whole and to the largest degree possible are relevant to the participating students' future careers plans. Furthermore, the program manager should understand the importance of class sizes in generating student satisfaction. The thesis does not provide insights to recommended class sizes; the key of the class size is, from a student perspective, to generate *interaction*. In addition to the above, providing the entrepreneurship educators and classes with good administrative systems as well before as during the courses is a key method for entrepreneurship program managers to affect the actual outcomes of the program. Finally, as presentation skills is the most important driver of student satisfaction among the faculty skill-set, program managers who have the opportunity to affect faculty members' professional development should especially encourage presentation skills developments.

The potential value of having satisfaction as a steering variable in the quality management process of the education should not be disregarded. Entrepreneurship education is regularly in a state where it has to motivate its existence by showing concrete results (Volkmann C and Wilson K. E., 2009). Although this study only concerns entrepreneurship alumni students' recommendation and retention intents it indicates that much is to win on a program level from a proactive relationship to alumni on a program level where for example interaction such as short term guest lecturing and long term future program financing.

Entrepreneurship educators

The entrepreneurship educator is as well a direct decision maker in entrepreneurship education as a contributing factor to student satisfaction. The model proposed in this thesis can increase the understanding among educators on how to effectively leverage course resources in a manner that increases probability for sought after behaviour among its participants. Educators are able to benchmark the course with previous offerings over time and directly leverage understanding for the factors of student satisfaction in-class. Unlike school and program managers the educator can translate understanding of the model and measures to direct actions in-class.

Applying the herein proposed student satisfaction model should facilitate in-course prioritization and decision making for educators. Specifically, educators should keep in mind to design courses that have understandable and reachable learning outcomes and that have as clear a connection to, and value for, the students' future career as possible. Interestingly, among the factors of student satisfaction the perception of faculty is the only factor that is directly human resource connected. Where possible educators should develop, or ensure to maintain, fine-tuned presentation skills. Apart from presentation skills the knowledge about the specific course topic, and feedback processes are important to maintain and develop as a faculty member. Almost equally important is the construction of the grading system and its ability to evaluate students on their efforts in the course. The grading system should be connected to the learning objectives of the course and designed to test key theories and models therein.

Last, but far from least, the educator's potential effect on entrepreneurship education cannot be understated; as individuals they have the highest potential of directly

affecting students' entrepreneurial and intrapreneurial behaviours, as well positively as the contrary.

CRITIQUE OF THE THESIS

Several ways by which studies can fail to depict reality exist (Malhotra, 1999). In general education programs differ a lot in their structure and what they aim to achieve. Furthermore, the increasingly popular e-learning pedagogic, which is possible to adjust the learning environment to a large extent is not regarded in this thesis which can question its connection to reality. However, using a quantitative study is an appropriate way to attempt to depict reality. With small adjustments the model is applicable for a wide array of entrepreneurship programs (Ibid).

It should be regarded that although the data is collected over time and from a large sample with widely different profiles in terms of domestic and academic backgrounds, the empirical setting is limited to one unique education program (SSES). However this specific entrepreneurship program has during the time the data has been collected changed a lot; the program has increased from eight to 19 courses, from teaching only Master students to teaching as well Bachelor as Doctoral students, from generating 400 to generating 1100 student graduations annually. This in turn leads the population to represent student cohorts from the same teaching institute but from different programs and program conditions.

Moreover, although the thesis suggest increased likelihood of sought-after effects among satisfied students the data is self reported. Given no quality control has been executed it is unknown if it is exaggerated by the respondents. Hence, the study suffer from self-report bias, which in turn leads to unreliable answers (Donaldson S., Grant-Vallone E., 2004). A more thorough investigation of the actual effects of student satisfaction could account for a higher reliability in the self-reported answers.

Finally, although the correlation coefficients in the analysis did indicate strong and interesting relationships between variables it should be noted that this could indicate a potential inflation between the measures. If that is the case it is possible that this thesis suffers from common method bias in that the correlations have been assessed using the same statistical method (Doty D.H., Glick W.H., 1998).

FUTURE RESEARCH

Entrepreneurship education as a field of research is growing and becoming increasingly mature. However, this thesis opens up several interesting new avenues for future research within the field of education management in general and entrepreneurship education management in specific;

First of all, future research should focus on complementing the data collection in this thesis with that of additional entrepreneurship education programmes. Thereby, the reliability of this thesis would be further tested, and light be shed on the potential need to adjust the model accordingly for specific entrepreneurship education programmes. Moreover, future research should aim to also describe the development of student satisfaction over time, and how it relates across courses and programmes. Thereby, the reliability would be further tested and additional applicability of the study's results concluded.

Furthermore, although this thesis promotes the importance of different factors of entrepreneurship education and provides managerial implications thereof, it does not take the relative cost of specific financial efforts needed to work with them into consideration. Knowledge of how to practically weight factors given their relative cost-efficiency and potential effect trade-offs does not exist.

Finally, future research should investigate the potential scaling of the factors of student satisfaction to other disciplines of education. Much indicates that the factors identified in this study are important for entrepreneurship education, but nothing indicates that it would not be relevant also to other genres of programmes.

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