STUDENTS' PERCEPTION OF GROWTH AND SCALABILITY OF STARTUP IDEAS

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Abstract

This study deals with the development of startup ideas, created in three entrepreneurial hackathons. We present a case of two similar interactive workshops, which took place after these three entrepreneurial hackathons. International students, with their startup ideas were involved in the process of further developing their ideas. This study focuses on students' perception of growth and scalability of their startup ideas as well as their capability as an entrepreneur to implement these ideas. This study follows a quantitative research methodology. For the purpose of data collection, a survey was developed. Empirical data was collected with the survey at the end of workshops, which took place at two different locations. Our analysis shows that according to students' perception, the 'number of business activities' is the most important aspect of business growth, whereas the 'age of the startup' is the least important one. Secondly, students consider 'major business goals' as the most important management factor for growth and scalability of the startup and 'business processes' the least important. Further, participants would most probably adopt a business model that is free from capacity constraints, has enriched value proposition or one that would provide a platform for other businesses while implementing their startup ideas. The study also provides some insight into the confidence and risk tolerance profile of participating students as a potential entrepreneur. The results indicate that the workshops equally enhanced students' productivity to further develop their startup business ideas. This study is connected to our current knowledge and contributes to the entrepreneurial education literature by providing insights into the practice of developing startup ideas.

Keywords: Startup ideas, growth, scalability, entrepreneurship, higher education.

1 INTRODUCTION

The entrepreneurial startups have been the focus of investigation in several economics and management research studies. Authors have defined business startups as using the criteria including 'new', 'active' and 'independent' businesses. In this study, we rely on the definition proposed by [1] that a startup is an entirely new enterprise, which did not formerly exist as an organization. Studies claim that these new business initiatives are the main source of innovation, employment and regional economic growth [2]. Although the human capital has been labelled as a true determinant of startups' survival [3], other studies show that the startup size, its growth orientation and owners' characteristics are among the main factors towards startup's possible success or undesirable failure [4]. In the seminal work by [5], they identify the main small business management factors including managerial style, organizational structure, extent of formal systems, major strategic goals and the owner's involvement in the newly established business.

This study focuses on students' perception of growth and scalability of their startup ideas. Research shows that higher education institutes foster entrepreneurial mindset in the undergraduate students. A recent study concludes that graduates are more likely to establish a high quality startup within three years of their graduation [6]. In line with this trend, students' perception about the scalability and growth of their startup business ideas is investigated using previously proposed business growth and management factors. Students' perception could play an important role in developing and transforming their ideas into economically viable businesses. The European higher education institutes are offering learning methods to develop entrepreneurial competencies among undergraduate students [7].

The business growth is considered as a core topic in the entrepreneurship and organization theory [8]. This study touches upon the startup's growth and scalability concepts. Since we lack a generally accepted definition of startup scalability in the business context, it is suggested that this concept is related to the growth potential of the company as well as the underlying functions of the business model of the startups [9]. Studies show that the growth potential directly influences the wealth and employment creation at community and society level [10]. The growth of a startup can be described as its ability to exploit economies of scale, where increase in the produced goods or services would result in the

possible reduction in the cost per unit produces [11]. Together these concepts would draw an economic perception of a new and an independent startup. Similarly, the new breed of such enterprises include e-entrepreneurship and digital startups, which become a means to exploit new markets at an exponential growth rate [12].

According to [13], startup scalability or business model scalability can be understood as, inter alia, the ability to retain at par excellence to achieve effectiveness. The scalability is not only about increasing the speed and size of business operations; rather it represents a critical aspect of startup's overall ability to achieve growth potential and generate revenue [10]. In the extant literature, the scalability has become an essential element in the strategic management field. It is equally important from the perspectives of investors, business angels and other stakeholders in the entrepreneurial ecosystem. In that sense, concepts like startup scalability and business potential are related to startup growth [10]. According to [14], there is an increase in empirical research in the United States, Australia, Germany and Scotland to determine the significance of variables such as company's age, the size of the startup, location, number of business activities, legal form and owner's independence. We present hereunder the description of these main factors that underlying the scalability and growth of a young entrepreneurial business startup.

Several studies (see for example [15], [16], [17], [18], [19]) consider age of the company as an important variable in examining the growth of business entity. The findings show that the growth potential of young firms is higher than that of older firms. According to [20] and [21], there is a relationship between the size of a firm at the start and its growth potential. Considering the potential startups to create wealth and employment in the society, this relationship has been explored widely. Startups with five or more employees have shown better growth and scalability in first six years than those with less five employees [22]. Number of business activities has been found to have influence on the business growth, especially firms within a specific industry sector for example technology intensive industries [14]. The theoretical argument put forward by [23] and [24] clearly attaches the location of a firm to its possible growth. Thus, the geographical location can be considered as one of the main factors while exploring the scalability and growth of a startup. This assumption is in line with the empirical findings of [25], who also suggest that there are higher chances of growth for companies with limited liability status that those where personal assets are at stake. Hence, the legal form can be included in the list of variable influencing the scalability and growth of a startup. Lastly, the independence of the owner to govern and make decisions pertaining to finances, resource utilization and creating business relationships with other companies influence the business growth [26], hence it is also included in the list of significant variables, which may affect the startup scalability and growth of a startup.

Research shows that a firm has a pre-establishment stage [27]. Once a startup is established, its growth passes through a number of distinct stages [28]. According to [5], these stages include existence, survival, success, take-off and resource maturity. Similarly, [29] proposed inception, survival, growth, expansion and maturity as a path of business growth. In line with the aim of this study, five management factors including management style, organizational structure, formal systems, major strategic goals and owner's involvement in the startup are considered important, hence included in the investigation of scalability and growth of new and small firm.

The description of the growth and scalability workshops is provided with the collection of the empirical data in the methodology sub-section, followed by the empirical results and conclusion.

2 METHODOLOGY

2.1 Growth and scalability workshops

During the growth and scalability workshops, the startup ideas generated during the three entrepreneurial hackathons were further developed. In this study, we focus on two similar interactive growth and scalability workshops, which took place in Helsinki and Riga. The sample population for this study is a group of 43 international students, out of which 22 students participated in the workshop in Helsinki and 21 in Riga.

The growth and scalability workshops were held for three days in November, 2019 in both places. They were organized in a manner that the student-teams had many opportunities to refine their business ideas. First, in each workshop, there were 4-5 coaches, who were responsible for offering guidance to student-teams and conducting various activities. The activities included mini-workshops on themes like growth, responsible business and sharing economy. Further, some coaches and expert guest speakers

delivered quality lectures to the participants. These lectures focused on themes like growth related trends, profitability and scalability of business, project management, success and failure factors of businesses as well as fostering entrepreneurial mindset. The aim of these activities and lectures was to provide support to the students and guide them in refining their initial business ideas. Lastly, the student-teams worked meticulously on further developing their business ideas and delivered refined presentations at the end of each workshop.

2.2 Quantitative study

This study follows a quantitative research methodology, where the empirical data was collected through questionnaires. The empirical data was collected at the end of both workshops. Keeping in view the ethical standards, the researchers obtained the consent of the participants prior to collecting the research data. The survey developed to collect data consisted of seven questions, which focused on students' perception of growth and scalability of their startup ideas. The first four questions addressed the issues like important variables and management factors for business growth, dimensions of business model scalability, growth issues and the students' capability as an entrepreneur to implement these ideas. The last three questions addressed the effectiveness of growth and scalability workshops in enhancing students' productivity, transforming their business ideas into business models and providing useful tools to visualizing the growth and scalability of their business models.

The authors carefully reviewed the empirical data and assigned a specific identity code to each questionnaire form for internal referencing purpose. After assigning the identity codes, the data from the questionnaires was carefully entered into IBM SPSS statistical tool and the data analysis was carried out by applying Friedman non-parametric statistical test to detect the differences in treatment across multiple test attempts and Wilcoxon non-parametric statistical hypothesis signed-rank test to compare two related samples. The rankings have been modified into scores, where the least important aspect is scored as 1 and the most important aspect has been given the highest score.

3 RESULTS

This study focuses on students' perception of growth and scalability of their startup ideas as well as their capability as an entrepreneur to implement these ideas. As discussed in the section 1, the extant literature provides the theoretical base related to the important variable and management factors, which influence the scalability and growth of a newly created startups. The collected empirical data was carefully analyzed to explore students' perceptions and capabilities.

The participating students were asked to rank the importance of various aspects towards business growth. As described earlier, the rankings have been modified into scores, where the least important aspect is scored as 1 and the most important aspect has been given the score of 6. The mean scores are depicted in figure 1.

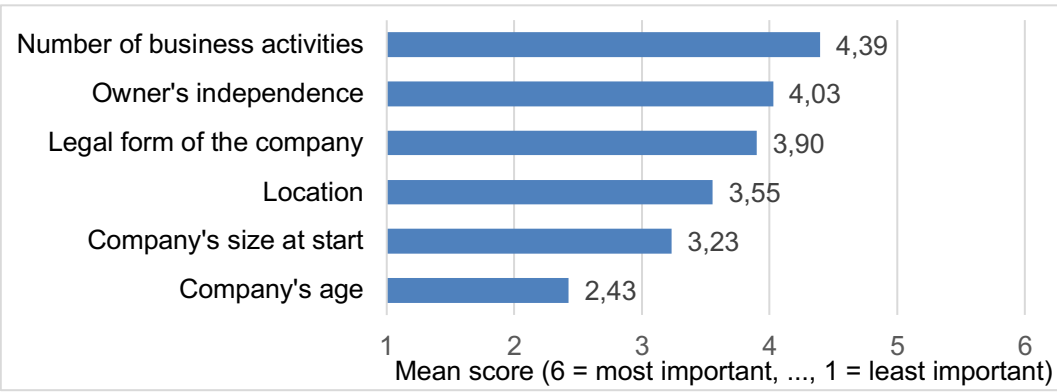

Figure 1. Aspects related to business growth.

Our result shows that there are statistically significant differences between the rankings (Friedman test, χ^2 = 33.140, Sig = 0.000). For further analysis, the aspects were paired and Wilcoxon Signed Ranks Tests was used to stud y which of these pairs show statistically significant differences. The three most important aspects were 'number of business activities', 'owner's independence' and the 'legal form of the company'. However, the ranking orders of these three aspects are not significantly different (Table

1). Noticeably, the ‘company’s age’ was assessed as the least important aspect within business growth. It was ranked significantly lower than any other aspect.

Table 1. Wilcoxon Signed Ranks Test on business growth aspects.

Test Statistics	*Z*	*Sig. (2-tailed)*
Company's size at start - Company's age	-2,079[b]	**0,038**
Location - Company's age	-2,975[b]	**0,003**
Number of business activities - Company's age	-4,143[b]	**0,000**
Owner's independence - Company's age	-3,766[b]	**0,000**
Legal form of the company - Company's age	-3,116[b]	**0,002**
Location - Company's size at start	-1,175[b]	0,240
Number of business activities - Company's size at start	-2,603[b]	**0,009**
Owner's independence - Company's size at start	-1,847[b]	0,065
Legal form of the company - Company's size at start	-1,628[b]	0,104
Number of business activities - Location	-2,251[b]	**0,024**
Owner's independence - Location	-1,339[b]	0,180
Legal form of the company - Location	-,881[b]	0,378
Owner's independence - Number of business activities	-1,070[c]	0,285
Legal form of the company - Number of business activities	-1,625[c]	0,104
Legal form of the company - Owner's independence	-,260[c]	0,795

b. Based on positive ranks.
c. Based on negative ranks.

The participants were also asked to rank the importance of various management factors that influence business growth. The rankings have been modified into scores where the most important aspect has been given score 5 and the least important aspect is scored as 1. The mean scores are depicted in figure 2.

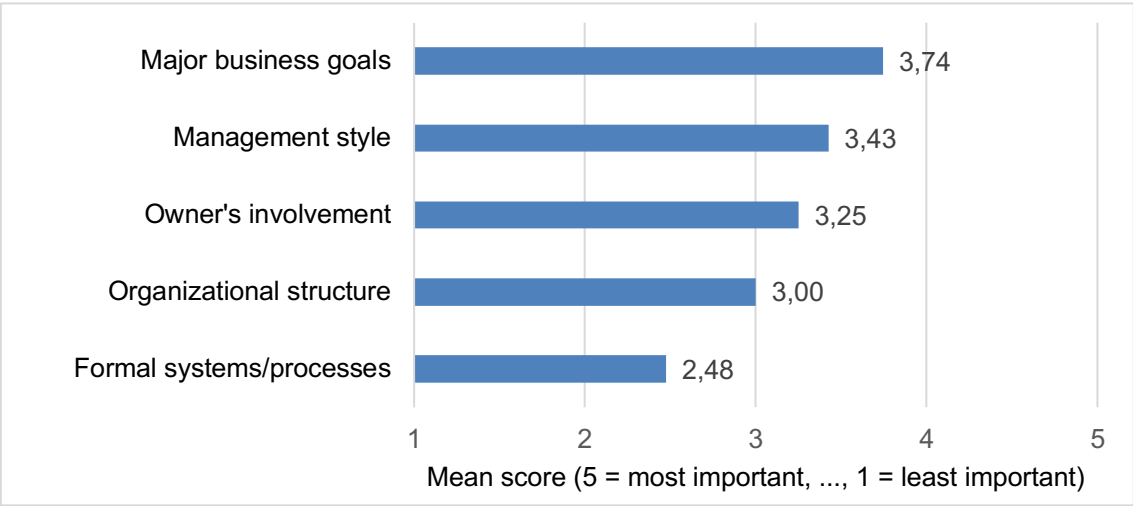

Figure 2. Management factors related to business growth.

The analysis shows some significant differences between the rankings (Friedman test, χ^2 = 18.061, Sig = 0.001). The ‘major business goals’ was assessed as the most important factor followed by the ‘management style’ and ‘owner’s involvement’. The three most important factors were assessed significantly different from all other factors with two exceptions. The ‘owner’s involvement’ and ‘management style’ were not ranked differently from ‘organizational structure’. (Table 2.)

Table 2. Wilcoxon Signed Ranks Test on management factors.

Test Statistics	Z	Sig. (2-tailed)
Organizational structure - Management style	-1,408[b]	0,159
Formal systems/processes - Management style	-2,637[b]	**0,008**
Major business goals - Management style	-,960[c]	0,337
Owner's involvement - Management style	-,476[b]	0,634
Formal systems/processes - Organizational structure	-1,805[b]	0,071
Major business goals - Organizational structure	-2,485[c]	**0,013**
Owner's involvement - Organizational structure	-,979[c]	0,328
Major business goals - Formal systems/processes	-3,514[c]	**0,000**
Owner's involvement - Formal systems/processes	-2,007[c]	**0,045**
Owner's involvement - Major business goals	-1,572[b]	0,116

b. Based on negative ranks.

c. Based on positive ranks.

Furthermore, the participating students were asked to rank the probability of adopting the given dimensions to scale their startup ideas. After data analysis, the mean scores are depicted in figure 3.

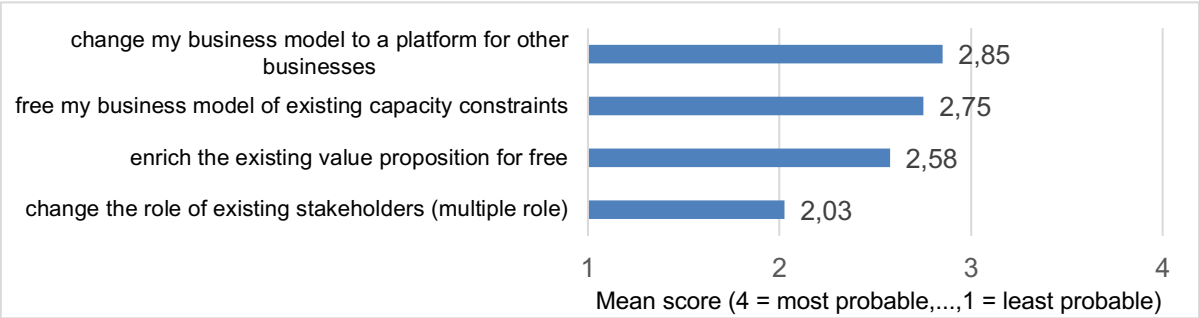

Figure 3. Dimensions that the respondents would adopt for their Business Model (BM) scalability.

The probability of adopting these dimensions had small differences (Friedman test, χ^2 = 11.732, Sig = 0.008). Only the 'change the role of existing stakeholders (multiple role)' stood out from the list of dimensions as the least probable one. It was assessed as significantly lower compared to the two most probable dimensions (Table 3).

Table 3. Wilcoxon Signed Ranks Test on BM scalability dimensions.

Test Statistics	Z	Sig. (2-tailed)
free my business model of existing capacity constraints - enrich the existing value proposition for free	-,604[b]	0,546
change my business model to a platform for other businesses - enrich the existing value proposition for free	-,919[b]	0,358
change the role of existing stakeholders (multiple role) - enrich the existing value proposition for free	-1,780[c]	0,075
change my business model to a platform for other businesses - free my business model of existing capacity constraints	-,413[b]	0,679
change the role of existing stakeholders (multiple role) - free my business model of existing capacity constraints	-2,782[c]	**0,005**
change the role of existing stakeholders (multiple role) - change my business model to a platform for other businesses	-2,934[c]	**0,003**

b. Based on negative ranks.

c. Based on positive ranks.

The participating students were asked to consider themselves as the business owners. In this role, they assessed the given statements related to business growth and scalability on the scale of 'no', 'not sure' or 'yes'. The results are depicted in figure 4.

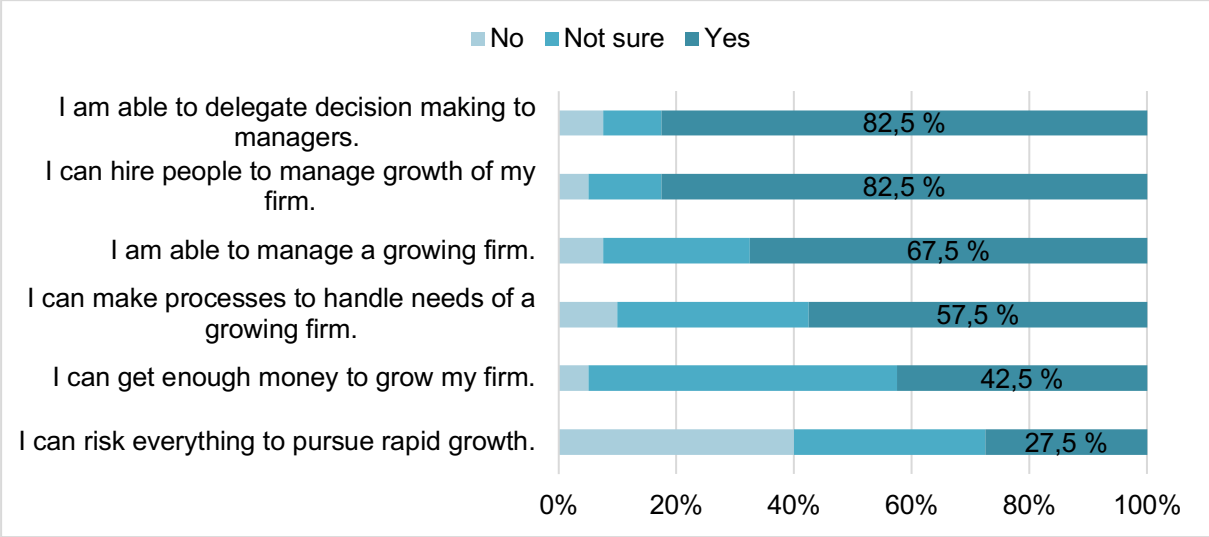

Figure 4. Distribution of choices about the statements related to business growth and scalability.

The analysis of the collected empirical data shows that the students availed all three choices in their answers while addressing each of the given statement. Most of the students considered themselves to be able to delegate the decision-making responsibility to their managers and to hire other people who could manage the growth of their startup. More than half of the participants considered themselves to be capable of managing a growing startup. Less than half of the participants indicated that they were able to acquire required financial resources to grow their new startups. Lastly, only about a quarter indicated their willingness to risk everything to pursue the growth of their startup ideas.

4 CONCLUSIONS

This study presents a case of two similar interactive workshops, where international students participated to explore the scalability and growth of their novel startup business ideas, which were created during three entrepreneurial hackathons. This study focuses on students' perception of growth and scalability of their startup ideas as well as their capability as an entrepreneur to implement these ideas. Keeping in view the aim of the study, data was gathered using two similar survey questionnaires during the workshops. This study follows a quantitative research methodology and the data analysis was carried out using the IBM SPSS package.

The previous studies show that the growth potential of young firms is higher than that of older firms. Our results show that age of the company is not considered as a significant factor perhaps because the participants actually did not have registered startups, only business ideas. Secondly, the participants identified the number of business activities as one of the most important aspects, which is in line with the findings of earlier studies. The students' perception about the 'major business goals' as an important management factor is in line with the earlier studies. This factor is equally important in all five stages of the growth (eg. [29 p.48]). The three most important dimensions of business model scalability to be adopted are to certain extent related to each other and in line with the current business and economics trends. Furthermore, our study shows that students show high level of confidence in management capabilities including delegation of responsibilities, hiring right staff, growth management supported by effective processes. On the other hand, the participants were not too certain to secure external funding required for the growth and participants' willingness to take risk was found quite low.

Students' active participation in the interactive workshops enhanced their perception of scalability and growth of their novel startup ideas. The arrangement and participation of the students in the interactive workshops right after the entrepreneurial hackathons were found to be beneficial and gave clarity to students' perception.

Since the number of students in the workshops was limited, care should be taken in generalizing the findings of this study. This study contributes in providing insights into the practice of interactive workshops in particular and in the entrepreneurial hackathons in general as an effective method for entrepreneurial education.

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