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Factors Influencing the Business Performance of Scaleups. A Comparative Analysis

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ABSTRACT:
The analysis of the literature on scaleups has shown that the conditions and factors that influence the existence and favorable development of scaleups are known, but most studies take a declarative stance on the topic and provide mostly indirect evidence without a direct relationship to business performance. There is therefore a research gap that can be filled by a better and more detailed understanding of the factors that influence the business performance of scaleups. The purpose of the research is to identify the causes and reasons that positively or negatively affect the business performance of scaleups. A field study of 92 scaleups was conducted. The source of knowledge about the studied scaleups is personal experience recorded in a questionnaire. Research without intermediaries is more authentic and allows for immediate feedback. The research sample was divided into more and less powerful scaleups. Using comparative analysis, the causes and reasons for different business performance were identified. The performance difference between more and less powerful scaleups is a consequence of (a) more efficient conversion of a business idea into a useful product, (b) internationalization of business, (c) a larger and broader offer of various types of cooperation with external partners, (d) more valuable enterprise resources of all kinds, (e) better fulfilment of explicitly set and relevant goals, (f) greater implementation capacities, (g) doing business on international markets and (h) more effective promotion and advertising. The results of empirical research and comparative analysis in the range of identified parameters bring new knowledge about the causes of higher performance of scaleups and at the same time provide guidance on how to achieve such higher performance.

Keywords: scaleup, business performance, comparative analysis, performance factors, high-performance scaleups, low-performance scaleups

1. Introduction

Scaleups are high-growth companies that achieve more than 20% annual growth in terms of employees or sales over a period of more than three years and have more than 10 employees at the beginning of this period (Jansen et al., 2023). Scaleups play an important role in the national economy, as they contribute to job creation, innovation, and economic growth. Scaleups are companies that have already passed the initial start-up phase, seeking to grow rapidly, expand, and maintain a strong market position (Sanasi et al., 2023). The rapid growth of scaleups is conditioned by the continuous innovation of original products and the development of new products, expanding market presence, improving customer service, and rigorous cost control (Rove et al., 2019). Scaleups face unique challenges and risks during their rapid growth (Piaskowska et al., 2021). Rapid growth is conditioned by scaling, which means increasing the capacity of processes or

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technologies when moving from the trial phase to routine operation, industrial, and commercial use (Coad et al., 2024; Lee and Kim, 2023). (High business performance, which is a consequence of rapid growth, is a manifestation of the viability of a scaleup, attracts investors (Cavallo et al., 2019), and discourages competitors, and therefore the research question is what influences the business performance of scaleups, why do some scaleups have greater performance than others? Answering the research question is expected to meet the goal of field research, which identifies the causes and reasons that positively or negatively affect the business performance of scaleups. This goal will be achieved by comparing the characteristics (research criteria) of a group of scaleups with higher business performance (revenues) with a group of scaleups with lower business performance (revenues).

2. Literature analysis

The literature review explores the reasons, causes, and factors that influence the business performance and growth of scaleups. The rapid growth and powerful performance of scaleups are conditioned by the continuous development of **new products** and their continued **innovation**, but also by increasing market presence, improving customer service, and reducing costs (Rowe et al., 2019). The result of the development is a potentially original and useful product, which becomes an innovation if it is commercially attractive enough (Ummar and Saleem, 2020). Innovative originality positively predicts and influences the profitability of the company (Hirshleifer et al., 2017). Research on fast-growing companies and scaleups has identified several key factors that influence their success and growth. These include, in particular, the business idea and business model (Balboni et al., 2014; Sevilla-Bernardo et al., 2022). Other research studies emphasize the importance of innovation, especially product innovation, strategic adaptability, and ecosystem support for start-ups that turn into scaleups (Crnogaj and Rus, 2023; Wallin et al., 2016). Start-up accelerators play a crucial role in the entrepreneurial ecosystem by providing tools and programs to help young enterprises overcome challenges and build successful business models (Bańka et al., 2023). Similarly, start-up incubation has emerged as a critical factor in fostering entrepreneurship, innovation, and regional development (Máté et al., 2024).

Successful scaleups are led by strong personalities, **founders, and entrepreneurs** who can strategically manage growth and adapt quickly to new market conditions. Their leadership is key in identifying opportunities for scaling and implementing innovations (Dockel and Ligthelm, 2015). The important role of the human factor is also confirmed by research by Sevilla-Bernardo et al. (2019), which highlights the leadership role of the founder and the team in a starting and fast-growing company. Similarly, Koryak et al. (2015) identify the key role of company management and its capabilities in the growth of SMEs, and Berre and Le Pendeven (2022) elaborate on the characteristics of an entrepreneur. Successful entrepreneurs are middle-aged, not young, and their previous industry experience predicts greater entrepreneurial success (Azoulay et al., 2020). The average age of successful high-tech entrepreneurs is closer to 40, not the age of famous young founders (Lebret and Lebret, 2014). In the case of new international companies, the

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previous experience of founding teams initially aids growth, but its effect diminishes as experience and knowledge accumulate (Hashai and Zahra, 2022).

Research on business and growth of companies has identified several key factors influencing success. These include the characteristics of the **entrepreneurial team** and **employees** (Eliakis et al., 2020), team size (Kumar Pasayat et al., 2020), entrepreneurial education and training for regional development and innovation (Galvao et al., 2017), entrepreneurial skills and competences (Botella-Carumbi et al., 2022). Key factors for the success of start-ups in the EU include human capital and institutional support (Skawinska and Zalewski, 2020). Talented employees are a key factor for innovation, productivity, and sustainable growth of start-ups (Csefalvay, 2024), and therefore the success of scaleups depends on finding and retaining the best talents.

A favorable **business environment**, including access to resources, infrastructure, and technologies, plays a significant role in the growth of scaleups (Reypens et al., 2020). The influence of external factors and location on the growth of scaleups is also confirmed by Hechavarria et al. (2019). The performance of fast-growing companies is linked to regional entrepreneurial ecosystems, which highlights the need for profiling approaches to assess their impact (Gancarczyk, 2016). Entrepreneurs of high-growth firms in small economies prefer active government support through targeted innovation instruments (Denney et al., 2023). Fast-growing companies often need significant financial investments from the external environment to continue their growth (Cavallo et al., 2019). European entrepreneurship policies often fail to promote scaling due to overemphasis on innovation at the expense of entrepreneurial business models, suggesting a need for policy reforms to foster rapidly scaling ventures (Maresch et al., 2023). However, empirical research on external factors that support start-up growth is limited (Horne and Fichter, 2022).

Growth ambitions are influenced by the institutional context, the scalability of the **business model**, and personal characteristics (Wallin et al., 2016). The business model is a serious prerequisite and tool for scaling (Jansen et al., 2023). Scaleups with a flexible and sustainable business model adapt quickly to market changes and achieve long-term growth. Models that enable the effective use of innovation can lead to successful scaling (Dockel and Ligthelm, 2015). Scaleups are companies with limited and incomplete resources and are therefore dependent on the development of partnerships (Rizvanovic et al., 2023), networking within the industry (McQuaid et al., 2021), or even beyond the industry (Yazici et al., 2016) in their growth, thus adding complementary components to their business models.

The growth of scaleups also depends on the **internal environment** of the company, which also includes the conditions and reasons for growth. Strategy development is key to the long-term success of scaleups and maintaining competitive advantages, and therefore they must develop resilient market strategies to sustain growth (Piaskowska et al., 2021). Success indicators of technology start-ups include revenue generation and the ability to obtain external financing (Diaz-Santamaria and Bulchand-Gidumal, 2021). Studies that examine factors influencing the success and scaling of companies highlight strategic initiatives, organizational capabilities, and external environmental factors (Ćwiklicki, 2018; Ireta Sanchez, 2024; McQuaid et al., 2021). Research on start-ups and entrepreneurship points to complex factors that influence their growth and success. Studies emphasize the importance of innovation, strategic

adaptability, and ecosystem support for start-ups that move into the scaleup stage (Crnogaj and Rus, 2023; Wallin et al., 2016).

Scaling scaleups is a tool for achieving high growth and strong business performance after overcoming the start-up phase of business. Scaling is defined as an increase in size accompanied by a larger-than-proportional increase in performance (Palmié et al., 2023). Key attributes for scaling SMEs in the IT sector include academic background, budget control, negative business experience, team building, geographical expansion, and first critical experience (Ireta Sanchez, 2023). Scaling often involves an international dimension, requiring cross-border management strategies (Tippmann et al., 2023). Scaleups rely more on commercialization capabilities than on technological capabilities to achieve growth (Seip et al., 2022). Circular start-ups employ unique scaling strategies, balancing commercial and impact activities (Han et al., 2023). Research on massive and rapid business expansion in digital start-ups has identified key factors, which are operational excellence and organizational agility (Lange et al., 2023). For small and medium-sized enterprises (SMEs), factors such as size, age, internationalization, networking, innovation, public institutions, and capital structure significantly influence their growth and financial performance (Garcia-Martinez et al., 2023). In addition to academic texts, the topic of scaleups and scaling also appears in practitioners and consultants who offer various guides and solutions. They present ideas that are interesting and thought-provoking, but their validity is not confirmed by scientific research, e.g., Salter (2016) (six steps to scaling a business) and Peshev (2024) (ten steps to scaling).

The analysis of the literature on scaleups has shown that the conditions and factors that influence the existence and favorable development of scaleups are known, but most studies take a declarative stance on the topic and provide mostly indirect evidence without a direct relationship to business performance. It is clear that the innovative product, founders and teams, business environment, the internal environment of the scaleup, business model, and scaling have a favorable impact, but a deeper and more detailed knowledge of the impact of these factors is missing. One can even consider the negative impact of some factors and circumstances. Therefore, there is a research gap that can be filled by field research and finding new knowledge that will contribute to a better and more detailed understanding of the factors that influence the business performance of scaleups, with an emphasis on in-depth knowledge of the influential factors.

3. Research methodology

We will answer and achieve the research question and research goal through a research design based on field research of scaleups that do business and the use of quantitative methods. Field research lets researchers get first-hand experience with the object of research. Quantitative analysis of results provides researchers with a tool based on numerical data and exact methods. The research process has three phases.

1. The research question and research objective must be formulated. Why are some scaleups more and others less powerful? It is probably useful to know the reasons and causes of this difference.
2. The next step is to select the research sample and collect the data. Compilation of a sufficiently large research sample that considers the estimated number of scaleups in the

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country. Field research and personal contact with entrepreneurs when recording data in a questionnaire.
3. The research method must be selected. Statistical analysis did not yield statistically significant results, and therefore it was replaced by a comparative analysis of the differences between more and less powerful scaleups.
4. Data must be analyzed and visually displayed. Visual display of the data of two groups of scaleups in the form of box plots and identification of differences between the factors affecting performance.
5. Discussion. Selection of relevant differences between factors influencing performance, division of factors into positive and negative, explanation and justification of the influence of factors and their comparison with similar research.
6. Conclusion. Recapitulation of the main findings, evaluation of the originality of the research and consideration of the practical use of the results.

3.1 Sample of the research and the research conducted in the field

Our research took place from October to December 2023, and we surveyed 133 SMEs in the Slovak Republic. The initial number was narrowed to 92 businesses that fit the scaleup criteria: a minimum of 10 employees, revenue in the previous three years, a 20% growth rate in that time, and completion of the Series A investment phase. Obtaining an investment is outside the usual definition of a scaleup, but it confirms its viability and growth potential from the perspective of investors. Neither state nor other statistics deal with the registration of scaleups. Only unofficial records are kept with varying reliability on the number of start-ups, which in 2023 were approximately 511/resp. 93 start-ups per million inhabitants (SITA, 2024). Only a quarter of Slovak start-ups survive more than five years (Kollárová, 2021), i.e. approximately 127 reach the scaleup phase. The research sample of 92 scaleups can therefore be considered sufficiently representative given the total number of scaleups in the country.

Studied scaleups were formally affiliated with the industry, though this was not required. Research was conducted via a structured questionnaire, involving direct communication between the respondent—typically the founder of the enterprise—and the researcher. We obtained additional information from the enterprise website, public databases, as well as professional journals that published interviews with founders and reports on scaleups. The following is a list of the industry-included scaleups according to SK NACE (number of scaleups operating in the industry): J – Information and communication: 41, M – Professional, scientific and technical activities: 24, G – Wholesale and retail trade: 10, C – Industrial production: 7, N – Administrative and support service activities: 7, I – Accommodation and catering services: 2, K – Financial and insurance activities: 1.

Two research samples were created from the reduced number of companies. Research sample 1 contains 29 scaleups. It contains the best-performing companies with revenues over 2 million euros and a minimum annual growth of 1.2 (20%), which have been in business for at least 3 years. Research sample 2, which is the control sample, contains 63 scaleups. It contains other companies that do not reach revenues of at least 2 million euros, but have a minimum annual growth of 1.2 (20%) and have been in business for at least 3 years.

3.2 Data collection

Field research was concerned with collecting quantitative data that describe the characteristics of the scaleups under study. Respondents answered explicitly posed questions. During the interview, the answers were written down immediately and then professionally edited without altering the content. Our interview was quite thorough, spanning an hour and a half to two hours. If the questions were not entirely clear, the researchers were quick to provide clarifications upon request. Quantitative research on scaleups using direct interviews is rare because it is laborious, and therefore research is much more often conducted based on publicly available data, which, however, do not describe the internal environment, dynamics, and motivations of scaleups. The characteristics of scaleups (research criteria) are listed in the Appendix. Data on the business performance (revenue) of scaleups and their dynamics are taken from the publicly available Finstat database (https://www.finstat.sk/).

3.3 Data analysis

The research results are recorded in the form of box plots. This method of recording the research results was chosen because the originally intended correlation and regression analysis did not yield statistically significant results at the $p \leq 0.05$ level. The positive and negative deviations of sample 1 (top 29 scaleups) from sample 2 (the remaining 63 scaleups) are compared. The object of comparison is the same attributes (research criteria) of the two research samples, which are displayed in box plots.

Box plots show the mean value (arithmetic mean), quartile range, the position of the upper 3rd quartile Q75 and the position of the lower 1st quartile Q25, usually on a five-point scale, maximum and minimum values (the so-called whiskers) and outliers. The box contains 50% of the data values, the size of the box is the quartile range, which expresses the size of the dispersion of the values (the larger the height of the box, the greater the dispersion of the values), the quartile range QR = Q75 – Q25. The comparison is mainly focused only on obvious differences between the evaluated samples. A narrow (short) quartile range can be interpreted as a small dispersion around the mean value, it is a manifestation of close agreement, consistency, similarity, and approximately the same attribute or activity of the enterprises in the research sample. A wide (long) quartile range is a manifestation of greater diversity, less agreement around the mean value, fluctuating practice, and perhaps even an unsuccessful attempt to achieve a better parameter value.
The results of the analysis are described as differences between the characteristics of scaleups that achieve greater (research sample 1) and lesser (research sample 2) business performance. The data in parentheses are the average point values of the attribute (research criterion) of scaleups in sample 1 and sample 2, unless otherwise stated. Box plots including research criteria with scales are below in the text. The content of the questionnaire and links to the graphs that display the values of the research criteria are as follows:

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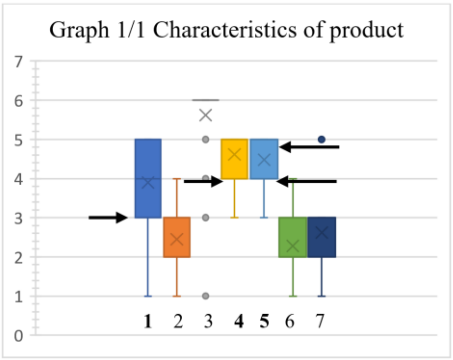
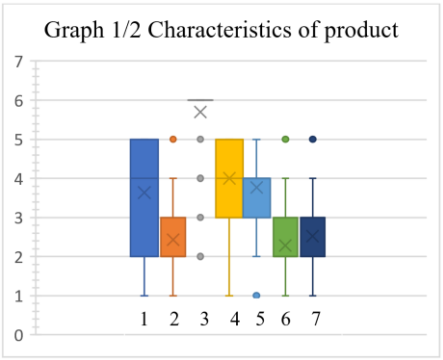
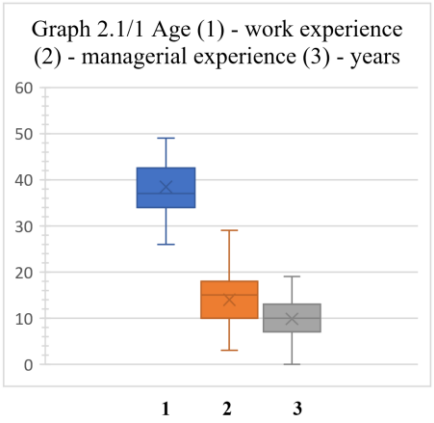
1. Characteristics of the product/service:

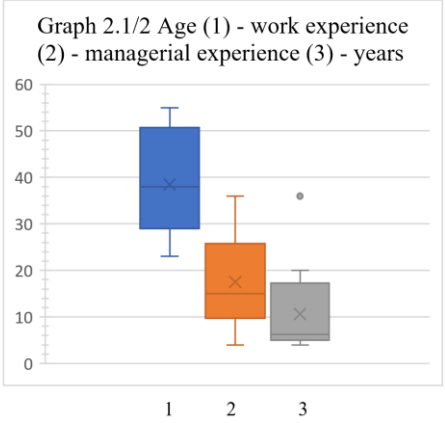


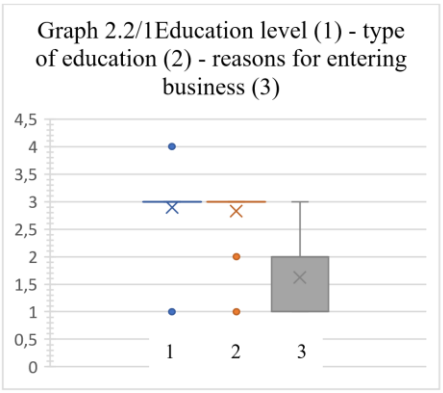


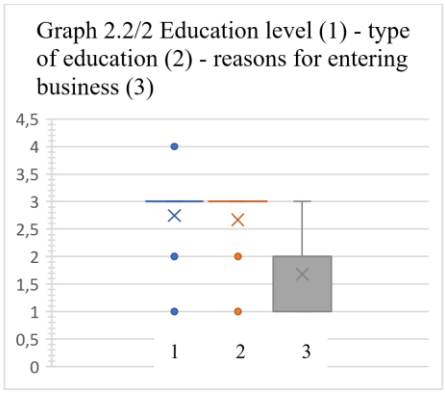
1. Originality of the product/service:
Scale: 1 – local 2 – national 3 – Central European 4 – European 5 – global
2. Length of product/service development (years):
Scale: 1 – short 2 – longer 3 – long 4 – very long 5 – unbearably long
3. Current status of product/service development and implementation:
Scale: 1 – idea/concept 2 – development/prototype/MPV 3 – testing 4 – production 5 – sales/first revenues 6 – sales/growing revenues
4. Estimated business potential of the product/service
Scale: 1 – local 2 – national 3 – Central European 4 – European 5 – global
5. Existing use (conversion into value for the customer) of the business potential of the idea
Scale: 1 – insufficient 2 - sufficient 3 - good 4 - very good 5 - excellent
6. The production implementation of the product or provision of the service is:
Scale: 1 - short 2 - longer 3 - long 4 - very long 5 - unbearably long
7. Problems with production capacity, accompanying service, suppliers, and financing:
Scale: 1- none 2 - small 3 - normal 4 - large 5 - very large

2. Entrepreneur/founder/leading person:



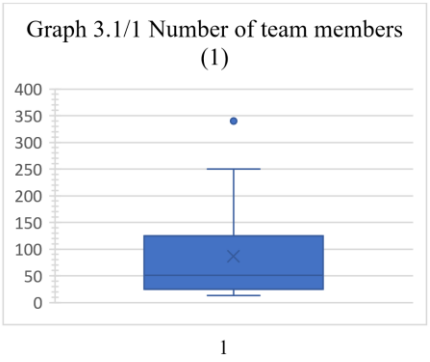


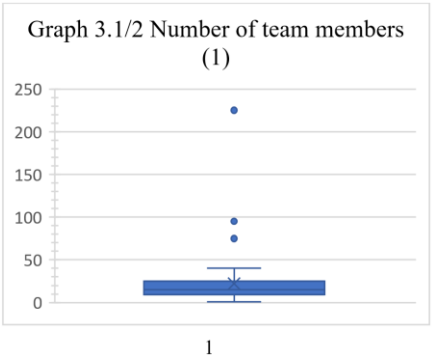


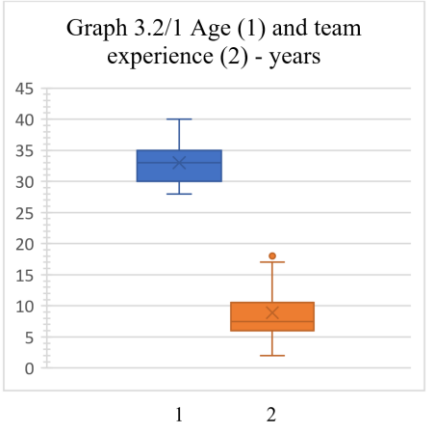


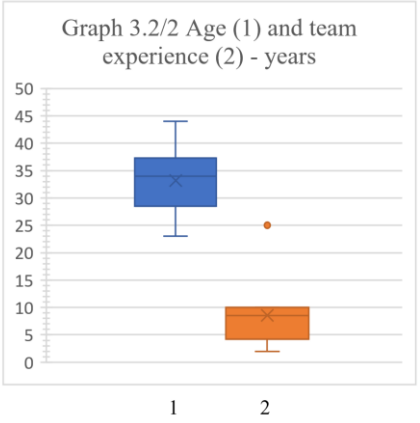
1. Level of education: 1. secondary school, 2 - 1st level university, 3 - 2nd level university, 4 - 3rd level university
2. Type of education: education distant 1 2 3 close to doing business
3. Reasons for entering into business: psychological 1 2 3 situational

3. Team/employees:









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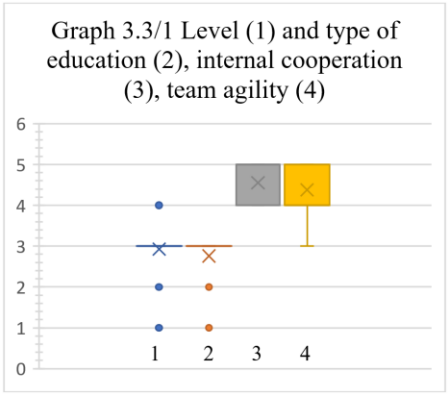
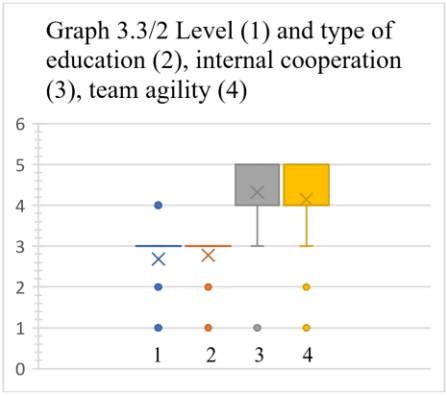
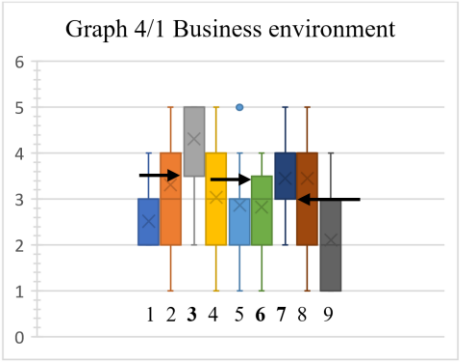
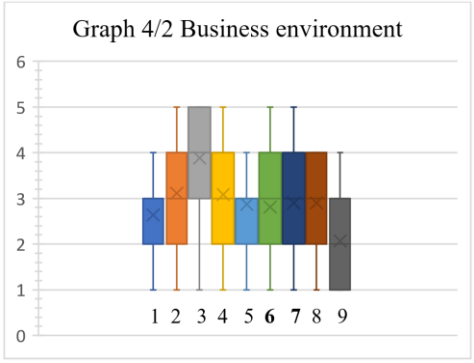




1. Education level: 1. secondary school, 2 - 1st level university, 3 - 2nd level university, 4 - 3rd level university
2. Type of education: education distant 1 2 3 close to doing business
3. Internal team cooperation: low 1 2 3 4 5 high
4. Team adaptability/agility to unforeseen events and challenges: low 1 2 3 4 5 high

4. Business environment:

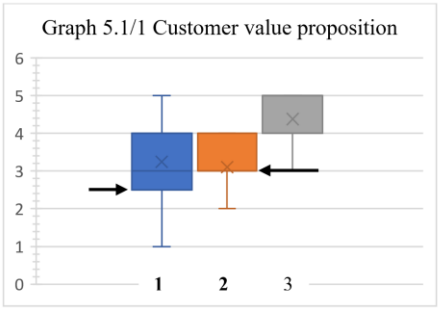


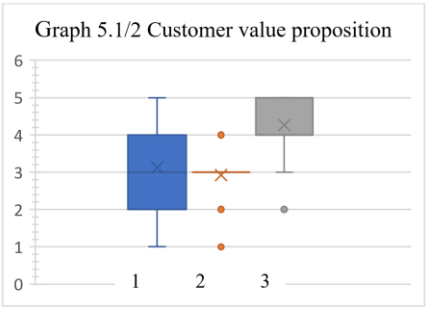


1. Industry life cycle phase.
Scale: 1 – embryonic 2 – growth 3 – shake out 4 – maturity 5 – decline, extinction
2. Annual market growth rate (industry).
Scale: 1 – up to 5% 2 – up to 10% 3 – up to 15% 4 – up to 20% 5 - 25% and more
3. Action radius of competition.
Scale: 1 – local 2 – national 3 – Central European 4 – European 5 - global
4. Intensity of competition (competitive conditions in the industry).
Scale: 1 – low 2 – moderate 3 – higher 4 – high 5 - very high
5. Predictability of future development (3 – 5 years).
Scale: 1 - very high 2 - high 3 – higher 4 – moderate 5 - low
6. Expected changes in the business environment.
Scale: 1 – small 2 – moderate 3 – larger 4 – large 5 - very large
7. Offers for technological (R&D), production, commercial, and promotional cooperation.
Scale: 1 – small 2 – moderate 3 – larger 4 – large 5 - very large
8. Interest (offer) of investors in business with growth potential.
Scale: 1 – low 2 – moderate 3 – higher 4 – high 5 - very high
9. Public and state support for business with growth potential.

Scale: 1 – low 2 – moderate 3 – higher 4 – high 5 - very high

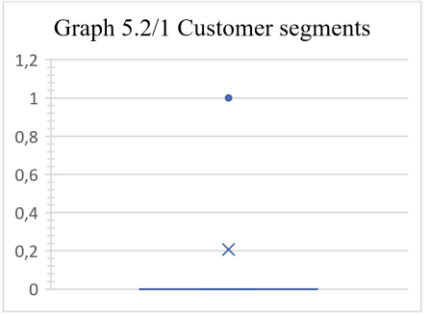
5. Business model (methodology of Osterwalder et al., 2014)
5.1 Customer value proposition:

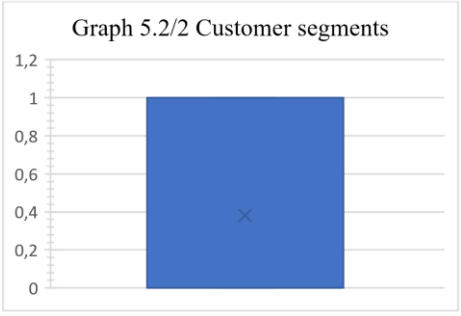




1. The main product/service compared to similar companies in the industry is
Scale: very similar - very different, 1 2 3 4 5
2. The main product/service compared to similar companies in the industry is
Scale: very cheap - very expensive, 1 2 3 4 5
3. The main product/service compared to similar companies in the industry is
Scale: very standard quality - very high quality, 1 2 3 4 5

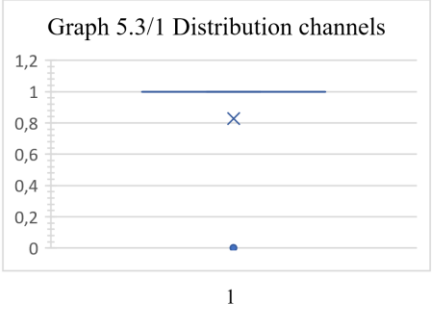
5.2 Customer segments:

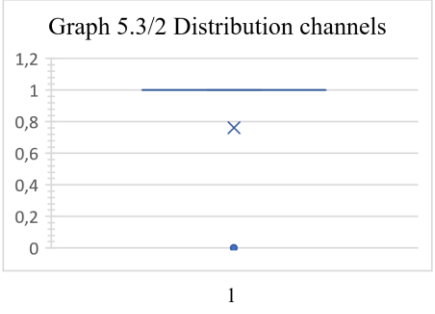




1. Main customers are other enterprises or organizations - 0
Or main customers are final consumers - 1

5.3 Distribution channels:





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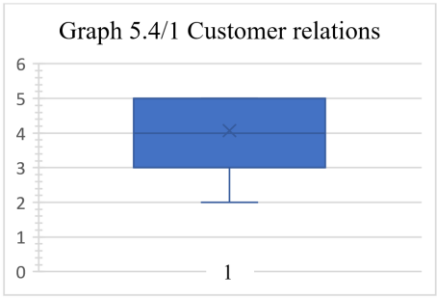
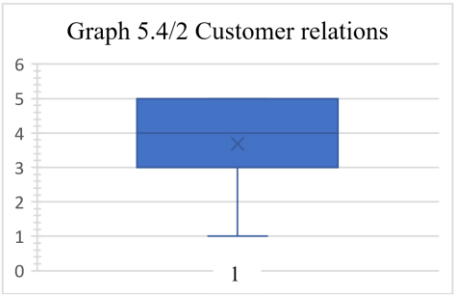
1. Main customers receive the product/service mainly indirectly from other distributors – 0 or main customers receive the product/service mainly directly from their own distribution – 1

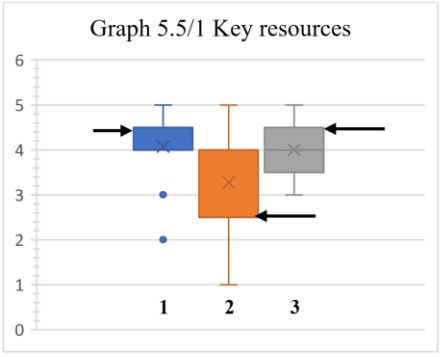
5.4 Customer relationships:

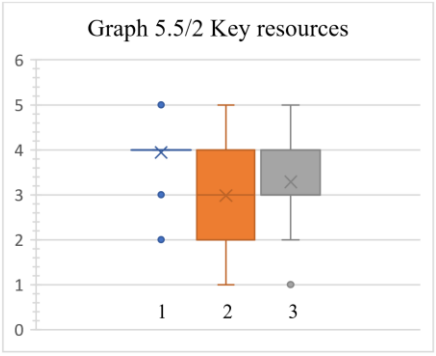




1. Customer relationships are:
Scale: very distant - very close 1 2 3 4 5

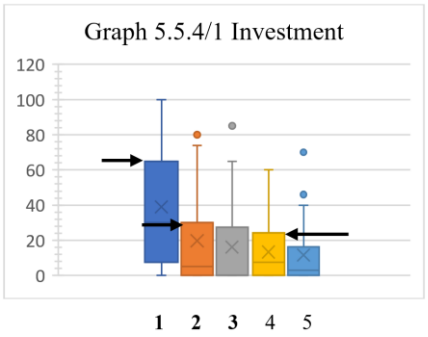
5.5 Key resources:

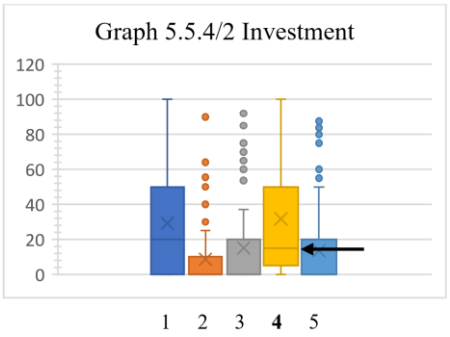




1. Intangible resources, expertise, know-how, and technology are compared to similar companies in the industry
Scale: same or little advanced - very advanced, 1 2 3 4 5
2. Tangible resources, equipment, and location of the company are compared to similar companies in the industry
Scale: same or little more unique - much more unique, 1 2 3 4 5
3. Reputation, brand or name of the company are compared to similar companies in the industry
Scale: little recognized - much more recognized, 1 2 3 4 5

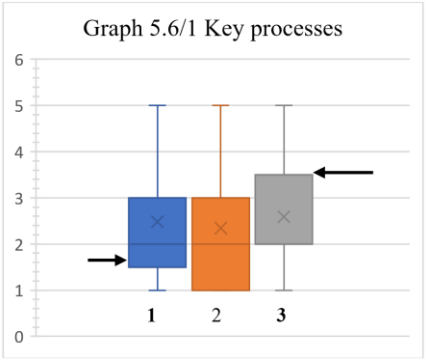
5.5.4 Investments:

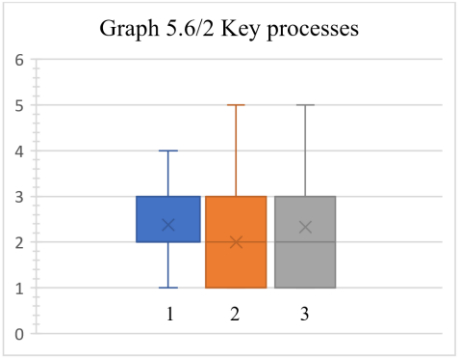




4. Investments
Scale: 1. own savings/equity, 2. angel investors, 3. venture capital, 4. own resources/retained earnings and depreciation, 5. other resources, total 100%

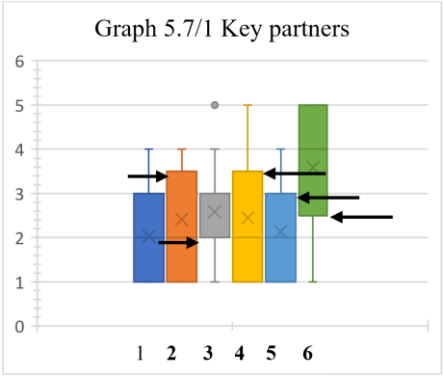
5.6 Key processes:

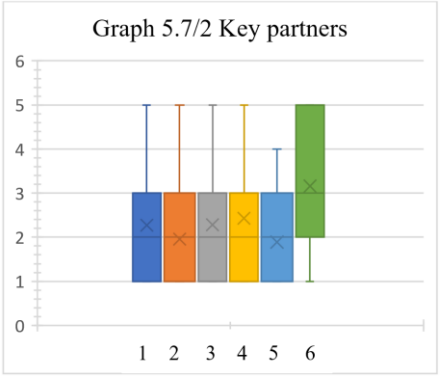




1. Expertise and technology development is carried out
Scale: completely internally - completely externally, 1 2 3 4 5
2. Production of the main product/service provision is carried out
Scale: completely internally - completely externally, 1 2 3 4 5
3. Sales, marketing, and after-sales services are carried out
Scale: completely internally - completely externally, 1 2 3 4 5

5.7 Key partners:





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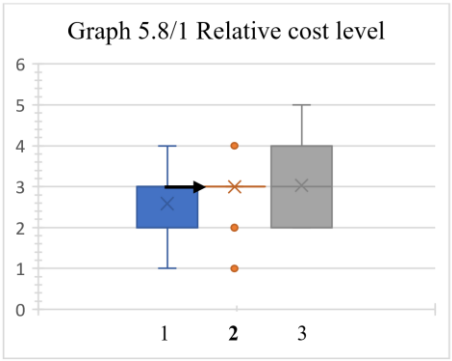
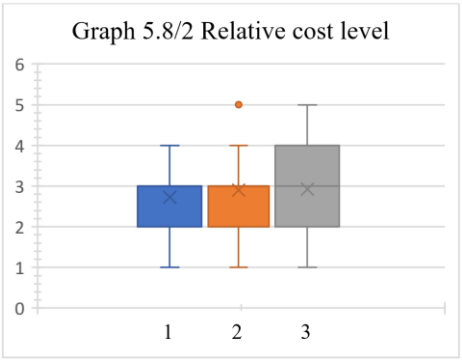
Contractual and permanent partners (not one-time) participate:
Scale: min. participation (1) - max. participation (5)
1. in the development of the main product/service, 1 2 3 4 5
2. in the production and operational processes of the main product/service, 1 2 3 4 5
3. in the distribution of the main product/service, 1 2 3 4 5
4. in the promotion of the main product/service, 1 2 3 4 5
5. in other activities 1 2 3 4 5:
6. The predominant cooperation with partners is:
Scale: 1 – local 2 – national 3 – Central European 4 – European 5 - global

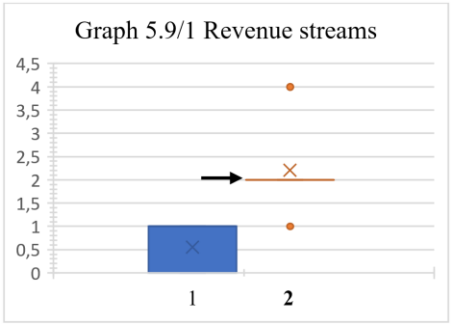
5.8 Cost structure:

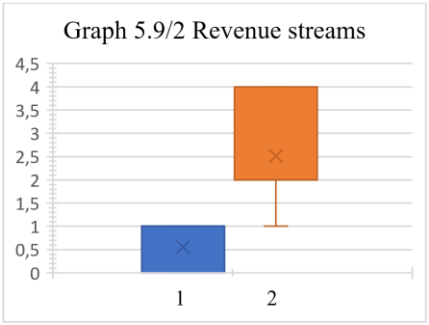




1. Costs relative to the prices achieved are:
Scale: 1 – very high, 2 – high, 3 – average, 4 – low, 5 – very low
2. Costs compared to relevant competitors are:
Scale: 1 – much higher, 2 – slightly higher, 3 – about the same, 4 – slightly lower, 5 – much lower
3. Fixed versus variable costs are:
Scale: 1- very high fixed costs, 2 – fixed costs predominate, 3 – fixed and variable costs balanced, 4 – variable costs predominate, 5 - very high variable costs

5.9 Revenue streams:



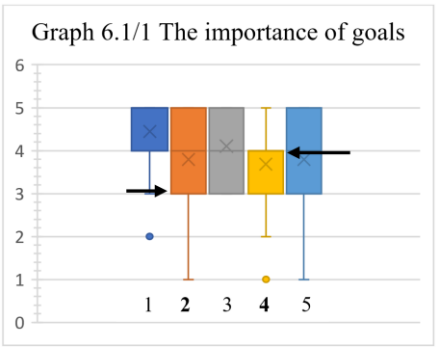


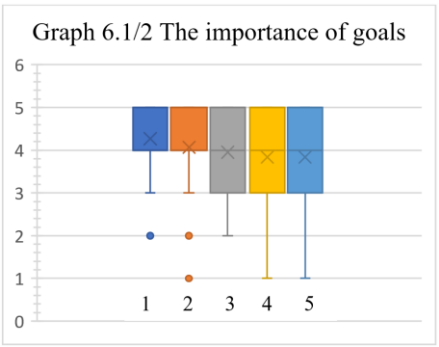
1. The company has one main source of income - 0 or several sources of income -1
2. Customers pay for value/benefit:
a) satisfaction of a completely new need, new benefit, 1
b) better, greater satisfaction of the original need, more benefit, 2
c) the same, but cheaper satisfaction of the original need, cost savings, 3
d) the same, but more accessible, more responsive, or faster satisfaction of the original need, 4

e) other:

6. Internal environment

6.1 Importance of goals:

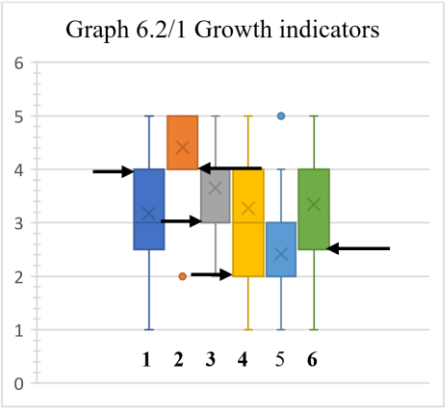


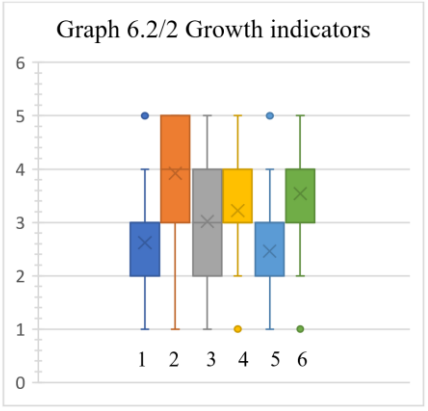


The importance of goals. *Scale*: min 1 - max 5

1. sales growth 1 2 3 4 5
2. profitability 1 2 3 4 5
3. company value 1 2 3 4 5
4. maintaining control over the company (control of the company) 1 2 3 4 5
5. survival 1 2 3 4 5

6.2 Growth indicators:





External measurable manifestations/growth indicators; current state. *Scale*: min 1 - max 5

1. high growth/number of employees 1 2 3 4 5
2. high growth/sales 1 2 3 4 5
3. rapid geographical expansion into new markets 1 2 3 4 5
4. courageous company actions 1 2 3 4 5
5. risky company actions 1 2 3 4 5
6. waiting ↔ active company actions 1 2 3 4 5

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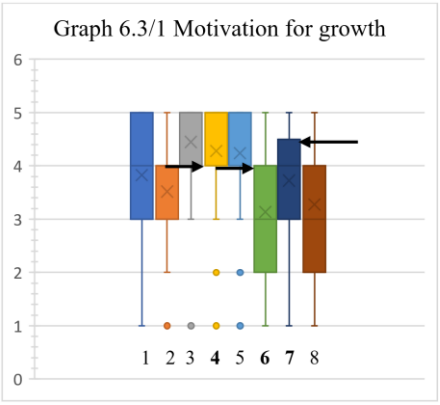
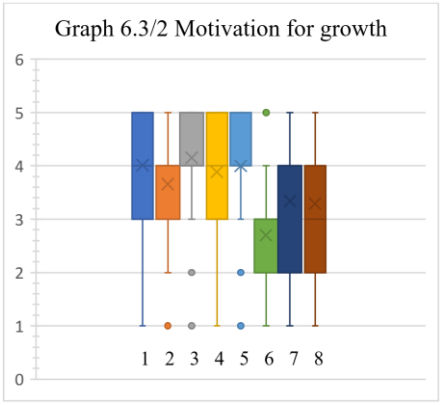
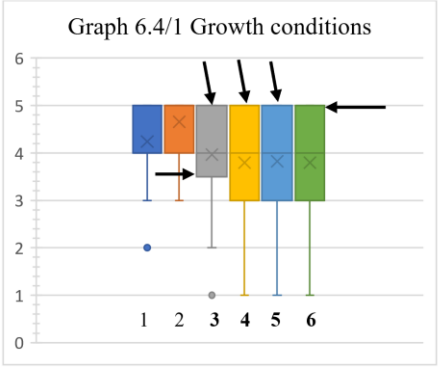
6.3 Motivations for growth:

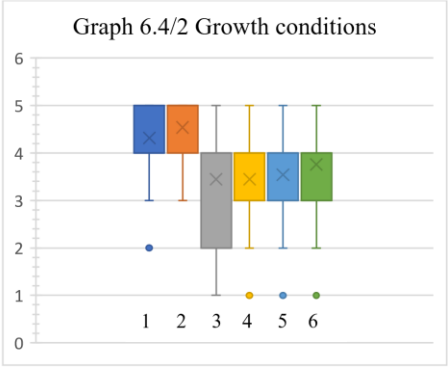




Motivation for growth. *Scale*: min 1 - max 5
1 self-realization of the founder 1 2 3 4 5
2 ambitions of strong individuals 1 2 3 4 5
3 ambitious team 1 2 3 4 5
4 ambitious corporate culture 1 2 3 4 5
5 technological success and prestige 1 2 3 4 5
6 size of the company (becoming a large company) 1 2 3 4 5
7 international recognition 1 2 3 4 5
8 service to the public 1 2 3 4 5

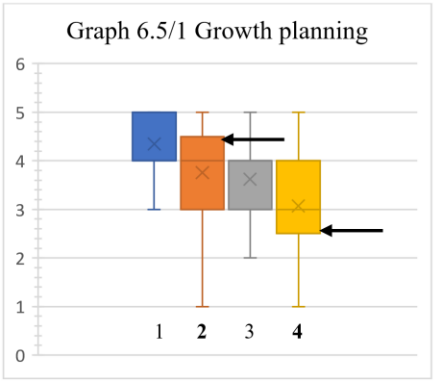
6.4 Growth conditions:

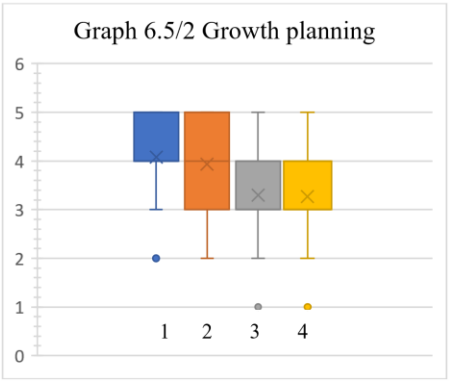




Personal and material conditions for growth (resources and competencies). *Scale*: min 1 - max 5
1. capable managers 1 2 3 4 5
2. intellectual, professional, and work capacity of the team 1 2 3 4 5
3. development and experimental equipment 1 2 3 4 5
4. production and implementation facilities 1 2 3 4 5
5. distribution channels and distribution network 1 2 3 4 5
6. finances 1 2 3 4 5

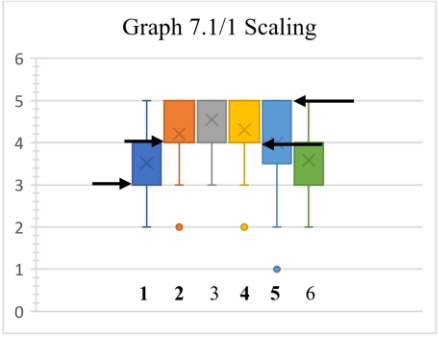
6.5 Growth planning:

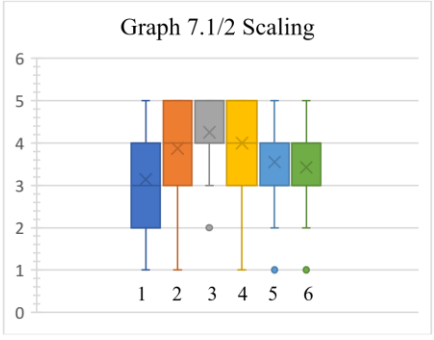




Growth planning. *Scale*: min 1 - max 5
1. goal-directed growth plan 1 2 3 4 5
2. passive ↔ active action 1 2 3 4 5
3. causal logic (causal, predictive) 1 2 3 4 5
4. action logic (effectual, non-predictive) 1 2 3 4 5

7. Scaling:





Scaling, preparation, and support for the sustainability of the expansion; current status. *Scale*: min effort 1 - max effort 5
1. Managerial talents (search and education) 1 2 3 4 5
2. Team development (recruitment, training, and retention of capable employees) 1 2 3 4 5
3. Further research and development (continuous improvement of the product) 1 2 3 4 5
4. Product development, improvement, and modification (broader possibilities of use that were not foreseen in the first version of the product) 1 2 3 4 5
5. Development of production and implementation capacities (product functioning on large scale; building appropriate technical foundations) 1 2 3 4 5
6. Standardization of processes, delegation of tasks and authorities 1 2 3 4 5

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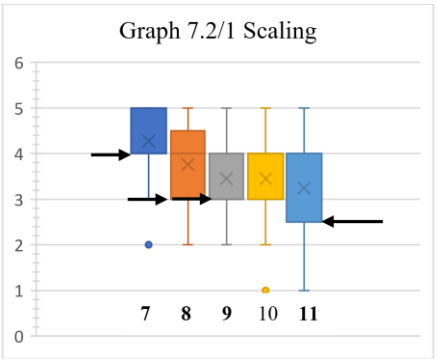

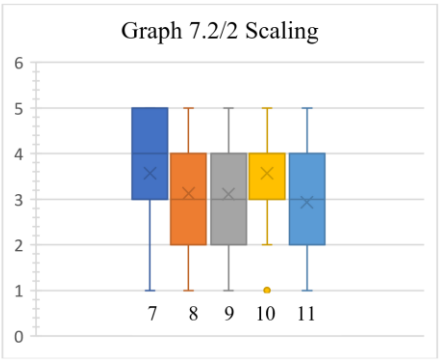

7. Market access (especially international) 1 2 3 4 5
8. Marketing (effective marketing campaigns that will convince not only early adopters but also the early majority of customers) 1 2 3 4 5
9. Corporate culture (changes in values, attitudes, habits, and work atmosphere due to the expansion of the company, which the original team members may not accept) 1 2 3 4 5
10. External cooperation (search for and cooperation with partners outside the company) 1 2 3 4 5
11. A need for investors (identifying key skills, unique knowledge, whose investment support will start and maintain growth) 1 2 3 4 5

4. Research results

1. Product (service) characteristics. The originality of the product/service reaches almost the European level in sample 1 and slightly exceeds the originality of the product/service in sample 2 (3.9 – 3.6). The lower quartile of originality is one point higher in sample 1, i.e. the lower level of quality is higher and the quartile range is shorter. The originality of the product/service in sample 1 is less dispersed than in sample 2. Only radical innovation, not incremental innovation, is relevant to firm growth, regardless of whether it is developed internally or through collaboration with domestic or foreign partners (Hsieh et al., 2018).

The length of product/service development is the same in both samples, namely 2.4 years (longer to long). The current state of product/service development and implementation is almost the same (5.6 - 5.7), both samples are in the initial to growing income phase. Sample 1 has a larger average estimated business potential (4.6 - 4), the lower quartile is one level higher, and the data dispersion is smaller. The larger business potential of sample 1 is located on the border of European and world markets.

Sample 1 has a higher average utilization of the business potential of the idea (4.5 - 3.8). Both the upper and lower quartiles are one grade higher, and the quartile range is the same. Sample 1 is better at converting the business potential of the idea into customer value.

The production realization of the product or provision of the service is the same in both samples (2.3) and is considered to be longer. Problems with production capacity, accompanying service, suppliers, and financing are almost the same (2.5 - 2.6) and are considered to be small to common.

2. Entrepreneur/founder/leading person. The average age is almost the same in both samples (38.5 years), but the quartile range of sample 1 (34 - 42) is smaller than that of sample 2 (29 - 50.5). The age range is clearly smaller in sample 1 (8 years) than in sample

2 (21.5 years). The average length of work experience (14 - 17.5) is 3.5 years shorter in sample 1 and the quartile range (10 - 18) is smaller than in sample 2 (9.8 - 25.8). In sample 1, work experience is slightly shorter with a clearly smaller time span. The average managerial experience differs minimally between the samples (9.9 years - 10.6 years), but the quartile range is much smaller (7 - 13) and (5 - 17.25). The average values differ little, but the quartile ranges differ significantly more.

The level of education, type of education, and reasons for entering into business are the same in both average values and quartile ranges. The average values are 2nd level university, education is more consistent than inconsistent with the prerequisites for running a business, and the reasons for entering into business are more psychological than situational.

3. Team/employees. In sample 1, the average team size (86.5 - 22.2) and the quartile range are significantly larger, lower quartile (25 - 9), and upper quartile (125 - 25). More powerful scaleups have more employees. The average age of the teams is the same (33 years), sample 1 has a smaller quartile range, so the teams are more homogeneous in terms of age. The experience of the teams is almost the same (8.8 years - 8.5 years) and the quartile range is approximately the same. Sample 1 has an average level of education of employees of the 2nd level of the university, education is very close to doing business, internal cooperation and agility of the team are quite high, but not maximum. Sample 2 has average values of these criteria smaller by two to three-tenths of a five-point scale, and therefore the differences between the samples are not too large.

4. Business environment. Both samples are in the growth to maturity phase of the industry life cycle (2.5 - 2.6) and have the same quartile range, almost the same annual market growth rate of approximately 15% (3.2 - 3.1) and the same quartile range. Sample 1 has a larger average radius of action of competition (4.3 - 3.9) and a higher value of the lower quartile (3.5 - 3). The intensity of competition is the same in both samples (3.0), i.e. higher. The predictability of future developments is also the same in both samples (2.9), i.e. higher. The upper quartile of expected changes in the business environment is smaller in sample 1 and the quartile range is shorter (3.5 - 2) and (4 - 2). However, the average expected change is the same (2.8), i.e. higher. The expected changes in sample 1 are more clear-cut, probably due to better knowledge and predictability of the business environment. More powerful scaleups receive more cooperation offers (3.4 - 2.9) and have a higher lower quartile value (3 - 2) and a significantly smaller quartile range. Investor interest in sample 1 is higher (3.4 - 2.9) than in sample 2, but both samples have the same quartile range. Public and state support for entrepreneurship is the same for both samples (2.1), that is, moderate and has the same quartile range.

5. Business model. Customer value proposition. The average difference of the main product from similar companies is almost the same in both samples (3.2 - 3.1), but the lower quartile is higher in sample 1 (2.5 - 2), the quartile range is smaller, and therefore the lower level of the value offered to the customer is higher (higher quality) than in sample 2. The average price of the main product is roughly the same in both samples compared to similar companies in the industry (3.1 - 2.9), but the upper quartile of sample 1 is higher by one point, i.e. the price range extends to higher prices. More powerful scaleups achieve higher prices. The positive difference in quality between the samples is minimal (4.4 - 4.3), both samples achieve high, but not maximum quality.

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Customer segments. Customers of samples 1 and 2 are mainly companies (0.2), respectively (0.4). Business customers significantly prevail in both samples over end customers.
Distribution channels. Both samples 1 and 2 supply the product/service mainly directly, through their own distribution, the differences in the averages are negligible (0.83 - 0.76), indirect distribution has a significantly smaller share.
Customer relationships. Customer relationships are quite close (4.1 – 3.7), but sample 1 has them slightly closer, both samples have the same quartile range (3 – 5).
Key resources. The average rating of intangible resources in both samples (4.1–3.9) is above average, with the upper quartile of sample 1 reaching 4.5 and its quartile range being higher, sample 1 has slightly higher quality intangible resources. The average rating of tangible resources (3.3–2.9) lags behind intangible resources by up to one rating level, sample 1 has a lower quartile higher by 0.5 points. Sample 1 has slightly higher quality tangible resources. The average corporate reputation (**4.0–3.3**) of sample 1 is clearly higher and the quartile range is shifted higher by 0.5 points compared to sample 2. The key resources of sample 1 are more valuable and have a smaller interquartile range.
Investments. Sample 1 has clearly more own savings/equity (average **38.9% – 29.2%**) and resources from angel and venture investors. On the contrary, sample 2 has significantly more own resources/retained earnings and depreciation.
Key processes. The average values of the process of expertise and technology development in sample 1 are only slightly higher compared to sample 2 (2.5 – 2.4), this also applies to the production of the main product (2.3 – 2.0) and sales, marketing, and after-sales services (2.6 – 2.3). The indicated values are approximately in the middle between completely internal and completely external process execution. Sample 1 uses external process execution slightly more.
Key partners. Sample 1 involves slightly more partners in its business than sample 2, namely in production, distribution, promotion, and other activities. This cooperation is at a higher international level than in sample 2 (**3.6 – 3.1**). Sample 1 involves slightly fewer partners in the development of the main product or service (2.0 – 2.3).
Cost structure. Costs relative to the prices achieved are average (2.5 – 2.7) and approximately the same in both samples. Costs compared to relevant competitors are (3.0 – 2.9) approximately the same, but sample 1 has no quartile range and sample 2 has a lower quartile of 2, thus tending to slightly higher costs than competitors. Fixed and variable costs are almost the same in both samples (3.0 – 2.9) including the same quartile range.
Revenue streams. Both samples have several revenue streams, which are expressed by the same average value of 0.55 on a scale of 0 – 1. In sample 1, customers pay for value/benefit (2.2), they pay for the better, greater satisfaction of the original need, for more benefit without a quartile range. In sample 2, customers also pay for value/benefit (2.5), for better, greater satisfaction of the original need, for more benefit, but also for cheaper satisfaction of the original need, cost savings with a quartile range of 2 to 4. Sample 1 focuses more on better, greater satisfaction of the original need. Sample 2 combines better satisfaction of the original need with the same, but cheaper satisfaction of the original need, they pay less for benefit and more for cost savings.
6. Internal environment. *Importance of goals*. In sample 1, sales growth is slightly more important (4.5 – 4.3), but both samples have the same quartile range. In sample 1,

profitability is slightly less important (3.8 – 4.1) compared to sample 2 and a larger quartile range with a lower-placed lower quartile, i.e. a less strict emphasis on profitability. In sample 1, there is slightly more emphasis on enterprise value (4.1 – 3.95) and both samples have the same quartile range. Sample 1 places less emphasis on maintaining control over the enterprise (control of the enterprise) (3.7 – 3.8) and has a shorter quartile range (3 – 4) compared to sample 1 (3 – 5). Both samples have the same interest in survival (3.8) and the same interquartile range.

Growth indicators. Sample 1 places greater emphasis than sample 2 on high employee growth (**3.2 – 2.6**), high sales growth (**4.4 – 3.9**), rapid geographic expansion into new markets (**3.6 – 3.0**), and approximately equal emphasis on courageous (3.3 – 3.2), risky (2.4), and proactive actions (3.3 – 3.5) compared to sample 2.

Motivations for growth. Founder self-actualization (3.8 – 4.0) and strong individual ambitions (3.5 – 3.6) are slightly smaller in sample 1. Ambitious team (4.4 – 4.1) and ambitious corporate culture (4.3 – 3.9) are slightly larger in sample 1, with the lower quartile of corporate culture in sample 1 being one grade higher. Technological success and prestige (4.2 – 4.0), and company size (3.1 – 2.7) are slightly more important in sample 1. Both the lower and upper quartiles of company size are shifted one grade higher in sample 1. International recognition (3.7 – 3.3) has a smaller quartile range in sample 1, but the lower quartile is shifted one grade higher and the upper quartile half a grade higher. Motivation for public service (3.3) is the same in both samples.

Personal and material conditions for growth. Both samples have almost equally capable managers (4.2 – 4.3) and the same intellectual, professional, and working capacity of the team (4.6 – 4.5). Sample 1 has clearly better development and experimental equipment (**4.0 – 3.4**), which is also confirmed by the quartile range (5 – 3.5) in sample 1 and (2 – 4) in sample 2. Production and implementation facilities, distribution channels and distribution network, and finances are on average rated slightly better in sample 1 (0.1 to 0.3 points) but have a larger quartile range upwards and the upper quartile of all parameters in sample 1 is the maximum (5).

Growth planning. Sample 1 places slightly more emphasis on a purposeful growth plan (4.3 – 4.1), both samples have a significant tendency towards a purposeful growth plan. Sample 1 places slightly less emphasis on active action (3.8 – 3.9), sample 2 has a larger quartile range and an upper quartile at level 5, sample 1 is slightly less proactive in action. Sample 1 shows slightly more causal logic of action (3.6 – 3.3) and slightly less non-predictive logic of action (3.1 – 3.3).

7. Scaling (preparing and supporting the sustainability of expansion). Sample 1 slightly outperforms sample 2 in finding and nurturing managerial talent (3.5 – 3.1), while sample 2 has a significantly larger quartile range downwards, in team development (4.2 – 3.9), sample 2 again has a significantly larger quartile range downwards, in product research and development (4.5 – 4.2), in product development and modification (4.3 – 4.0), standardization (3.5 – 3.2), corporate culture (3.4 – 3.1) and in investor need (attractiveness to investors) (3.2 – 2.9).

Sample 1 significantly outperforms sample 2 in the development of implementation capacities (**4.0 – 3.5**), in market access, especially international (**4.3 – 3.6**), and in marketing (**3.8 – 3.1**). Sample 1 seeks external cooperation slightly less (3.4 – 3.6).

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More powerful scaleups in sample 1 tend to have slightly higher average values of almost all research criteria, higher levels of both the upper and lower quartiles, and shorter quartile ranges compared to less powerful scaleups in sample 2.

5. Discussion

A. The content of the discussion is the **positive differences** between the same parameters of sample 1 and sample 2, which have a min. value of 0.5 points on a five-point scale (min. 10%). The differences explain the greater business performance of scaleups in sample 1.
More powerful scaleups (sample 1) are able to satisfy needs in foreign markets with their products too. They understand foreign markets better and convert a business idea into value for both domestic and foreign customers better than other scaleups (sample 2). The conversion of an idea into a real product is the subject of scaling research, e.g. in social enterprises, but without any connection to performance and recommendations that are already traditional, e.g. the minimum viable product methodology (Walske et al., 2021).
More successful scaleups are founded and managed by entrepreneurs who are closer in age and experience than the founders of less successful scaleups. More successful scaleups are founded and managed by entrepreneurs whose age and experience are less dispersed, while less successful scaleups are led by entrepreneurs who are both too young and too old. The presented research is also confirmed by the results of other research (Lebret & Lebret, 2014) that the most successful entrepreneurs are in their early middle age. Respecting this fact would make entrepreneurs' hopes and investors' evaluative judgments come true.
Scaleups that have larger teams, i.e. more employees, achieve greater business performance. Despite the growth of labor productivity due to technological progress, the size of the enterprise measured by the number of employees remains a serious condition for greater business performance. The growth of scaleups is also explained by knowledge-similar founding teams, social ties of founders to other founders with different areas of knowledge, and knowledge-diverse early employees (Sako et al., 2022).
More powerful scaleups receive more offers to acquire external know-how and otherwise unavailable or exclusive resources. They have a wider choice of resources, and receive more offers to obtain capital in larger volumes from more qualified investors. Collaboration with other actors is one of the possible paths to scaling a sustainable business model (Ciulli et al., 2022).
All key sources of scaleups from sample 1 are more valuable and have a smaller quartile range than the sources in sample 2. The largest lead of all sources was achieved by the company's reputation, or rather, by the response in the market and among customers. Martin and Arshed (2020) write that scaleups even redefine the entrepreneurial ecosystem through improved reputational capital.
More powerful scaleups have more own resources in the form of savings and venture capital, and less own resources in the form of retained earnings and depreciation. More powerful scaleups attract more funding and venture capital, or this external capital creates greater pressure on higher scaleup performance. Resources provided by investors (e.g. money, knowledge, networks) are positively associated with employment growth during the start-up to scale-up transition (Eifert, 2020).

More successful scaleups collaborate on a larger scale and at a higher level with foreign partners, who bring higher-quality resources, new and more efficient practices to scaleup management, and higher demands on business performance. High-tech scaleups acquired by foreign-owned companies exhibit significantly higher cumulative revenue and employment growth compared to those acquired by domestic companies (Burger et al., 2023).

Scaleups with higher business performance place greater emphasis on employee growth, sales growth, and expansion into foreign markets, i.e. they achieve higher performance by employing more employees and exploiting opportunities in larger markets, and at the same time, high sales growth is an explicitly set goal. Capacity building, process innovation, and scale economics are prioritized in the scaling process (Mula et al., 2024).

Scaleups with greater performance have better development and experimental equipment, and among the personnel and material conditions for growth, this is the factor with the biggest difference.

The material resources for scaling the most powerful scaleups are a higher level of development of production and operational capacities, better access, especially to the international market (distribution channels, sales points), and more effective marketing campaigns. Much research on scaling scaleups notes various managerial and methodological attributes of growth and pays little attention to the material conditions of growth. A compromise in the study of this topic was made by Flyvbjerg (2021), who identified modularity and speed as keys to successful scaleups.

B. Negative differences can also be part of the discussion. They occur in the range of 0.1 to 0.3 evaluation points on a five-point scale (2% – 6%). Rapid scaling can negatively impact employee well-being, increasing burnout and reducing job satisfaction (Genedy et al., 2024).

In the development of the main product or service, more efficient scaleups rely less on partners than other scaleups. Apparently, they do not need or want to be dependent on partners in product development.

More powerful scaleups have slightly higher costs in relation to the prices achieved. The explanation probably lies in the expansion, which is documented by growth indicators, and which initially requires higher costs, later with further growth/enlargement of the company, a decrease in costs can be expected.

More powerful scaleups place less emphasis on profitability, which is likely to be sacrificed in favor of business development and growth, but should come later. The emphasis on maintaining control over the company is slightly less in more successful scaleups than in other scaleups. A frequent goal of successful scaleup owners is to sell the scaleup once it reaches a certain size and growth because they do not have the interest or ability to build a large company, which requires a greater emphasis on control/mastery and more will to maintain it.

The self-realization of the founder and the ambitions of strong individuals are slightly weaker in more powerful scaleups than in other scaleups. More powerful scaleups are led by people who are probably more aware of the complexity, difficulty, and risks of growth, and therefore their growth ambitions are more cautious (restrained), or they do not see their entrepreneurial self-realization and fulfilment of ambitions only in the growth of the scaleup.

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More powerful scaleups adapt slightly less implicitly to external events, rely less on non-predictive action logic, but plan more explicitly. This new insight does not diminish the importance of adapting to a volatile environment, but adaptation alone is not enough for greater success or greater business performance. Adaptation brings short-term results, but long-term success apparently depends on sophisticated planning.
More powerful scaleups cooperate slightly less externally when scaling. They probably rely more on their own strengths when expanding the company, perhaps they are concerned about revealing know-how, or they prefer independent growth to a certain level in order to create better conditions for selling the company, which is not dependent on greater external cooperation.
The measured positive and negative differences between the most powerful (sample 1) and the other (sample 2) scaleups are relatively small. However, the positive differences are larger and significantly more numerous than the negative differences. The natural, most expected, and demonstrated characteristic of scaleups is the interest in rapid growth of at least 20% per year. Scaleups are ready and willing to grow quickly and, using a sports analogy, they run to the finish line, where the differences between the leading positions and other competitors are usually very small. They are tenths to hundredths of a second or a few centimeters. Even belonging to the most powerful and other scaleups is decided by only small or very small differences, on which, however, victory depends, which is significantly greater business performance.
The research results published so far on start-ups and scaleups state that some factors influence the business performance of this type of enterprises, but without explicit evidence. The presented study identifies and explains these factors in quite detail, dividing them into positive and negative ones, and therefore contributes with these new findings to the deepening and expansion of scientific knowledge. The main contribution lies in the recognition that small differences in relevant factors can cause larger to large differences in business performance. The practical consequence of this knowledge is that scaleup founders cannot underestimate the small differences in various characteristics between more and less powerful scaleups, because the "devil" is in the details.

6. Conclusion

There are differences between the most powerful and other scaleups that explain greater and lesser business performance. The performance difference is a consequence of the more efficient conversion of a business idea into a useful product and the internationalization of the business. More powerful scaleups are led by founders who are more closely related in terms of generation and length of business experience than the founders of other scaleups. The performance difference is also a consequence of a larger company with a larger number of employees. More powerful scaleups receive more offers for various types of cooperation with external partners, e.g. know-how, exclusive resources, and financial investments, including from abroad. The resources of more powerful scaleups are more valuable overall than those of other scaleups, and they are distinguished mainly by better quality development and experimental equipment and the reputation of the company. Greater performance is also a consequence of meeting explicitly set goals, which are growth in the number of employees, growth in sales, and

entry into foreign markets. Greater scaling is a result of greater implementation capacities, doing business in international markets, and more effective promotion and advertising.

The negative differences between the best-performing and other scaleups are significantly smaller compared to the positive differences. The best-performing scaleups collaborate less with partners in the product development and scaling phases. They have slightly higher costs relative to sales prices and place less emphasis on profitability, show slightly less interest in maintaining long-term control over the company, and, strangely, the founders' ambitions are lower, although the difference is minimal. The best-performing scaleups adapt less to external changes and rely more on explicit plans.

The research question has been answered, as the factors influencing the business performance of scale-ups have been identified and explained. The research goal was also met, as the factors were quantified and divided into positive and negative categories in sufficient detail. The result of the research is a significant addition to our understanding of the conditions under which scaleups perform well, as well as a more comprehensive grasp of the elements that drive their growth.

Further research should focus on a more in-depth qualitative analysis of positive factors to reveal their background and explain their varying values in more and less powerful scale-ups, in particular, research into the impact of soft factors with small differences between more and less performing scaleups using qualitative methods, e.g. team cognitive characteristics, trust in the team, or founder resilience. It will probably be necessary to include the impact of artificial intelligence in the future research spectrum (Haefner et al., 2023). Research on this topic could continue on an international scale to confirm the validity of the impact of the identified factors in other cultural, institutional and market conditions.

Furthermore, our research results offer practical applications and implications. The results provide a list of positive and negative factors with a quantified impact, whether strong or weak. Improving or attenuating these factors may enhance the performance of scaling-up businesses. Empirical research has shown that business performance growth is the result of certain factors and circumstances, and so can be accepted and trusted by entrepreneurs.

The research is limited by the small number of scaleups in the country, which means the sample size cannot be expanded too much. Conducting field research through direct interviews with founders is challenging due to obtaining consent for guided interviews and scheduling around the researcher's and respondent's work schedules. Other research limitations include the short interview time and the limited depth of research into the topic, both of which require the respondent's trust, interest and willingness.

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