



**BUSINESS
SCHOOL**

RISING STAR MONITOR

Ten years of exponential growth

Results 2023

Deloitte.

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TABLE OF CONTENTS

PAGE 4	EXECUTIVE SUMMARY
PAGE 6	INTRODUCTION
PAGE 7	WHAT MAKES A RISING STAR UNIQUE?
PAGE 14	WHAT DRIVES THE GROWTH OF A RISING STAR?
PAGE 17	EDUCATION AND WORLDWIDE MARKET POTENTIAL
PAGE 17	FACTORS RELATED TO BUSINESS MODEL REPLICABILITY
PAGE 21	FACTORS RELATED TO FINANCIAL SCALABILITY
PAGE 24	CONCLUSION
PAGE 26	APPENDIX I: METHODOLOGY AND SAMPLE CHARACTERISTICS

ABOUT THE CENTRE FOR EXCELLENCE IN SCALE-UPS

The Rising Star Monitor is developed by the Vlerick Centre for Excellence in Scale-Ups. This Centre was launched by Vlerick Business School in collaboration with Deloitte Belgium to develop state-of-the-art knowledge about the key enablers of growth and the issues young, high-potential ventures struggle with. It also runs knowledge and community-building programs for entrepreneurs who are amid tackling important scaling challenges with their ventures (<https://www.vlerick.com/nl/opleidingen/opleidingen-in-ondernemerschap/scale-up-masterclass/>).

DELOITTE BELGIUM – PRIME FOUNDATION PARTNER FOR THE SCALE-UP CENTRE

Deloitte offers value-added services in audit, accounting, tax & legal, consulting and financial advisory. Deloitte Belgium has more than 4500 employees in 12 locations across the country, serving national and international companies. Our vision is to be the standard of excellence, providing consistently superior services that differentiate us in the marketplace. It is realized through being highly respected by our broad community of stakeholders, and being the first choice of the world's most coveted talent and the most sought-after clients. Innovation and entrepreneurship are important for Deloitte. Belgium is a relatively small and economically mature country. Hence, if Deloitte wants to create growth for society, it will have to help new ventures to be successful by providing its expertise and trusted solutions. With this study and the programs it runs, Deloitte wants to support entrepreneurship and help companies to scale up and grow internationally, in line with its vision.

ACKNOWLEDGEMENTS

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Please direct your questions and comments about this report via email to andrea.albuja@vlerick.com

EXECUTIVE SUMMARY

AN EXPERT PERSPECTIVE

With Deloitte's Rising Star competition in Belgium existing for ten years, it was a prime time to examine what makes a Rising Star company unique, what happened to them after they participated in the competition and what factors contribute to their growth.

The Rising Star competition aims to attract promising tech ventures with high ambitions to grow. When comparing Rising Star participants to a matched sample of peers, interesting conclusions appear:

- Rising Stars (RS) clearly **invest for growth**, as illustrated by:
 - **A stronger growth, both in employees and in net added value:**
 - RS grow from 5 to 18 employees five years later (vs. 4.5 to 7 for their peers)
 - RS grow from 183 000 EUR in net added value to 1.3M EUR five years later (vs. 86 000 EUR to 172 000 EUR for peers)
 - **They use more funding** to achieve this growth, both in the year of participation and the following years (on average, 400 000 EUR per year vs. 20 000 EUR of their peers)
 - This growth leads to **a negative and lower EBITDA** from participation up until four years after
 - **As of five years after participation, the tables turn around:** EBITDA of the RS become positive and higher than those of their peers.
- Yet, as is often the case, high growth ambitions also imply **higher risk:**
 - **RS have lower survival rates:** 95% survived compared to 98% of the non-participants.
 - **4% went bankrupt** compared to 3% of the non-participants.

All of the above is even more pronounced when comparing **Top 10** finalists to the ones who did not make the top 10. Top 10 finalists are more likely **to become high-growth firms and even hypergrowth firms:**

- **23% became high-growth firms** with 20% annualized net added value (NAV) growth versus 8% of the non-top 10.
- **19% became hypergrowers** (40% annualized NAV growth) versus 7% of the non-top 10.

We identify three key contributing factors to Rising Stars' realized growth: **(1) business model replicability, (2) a worldwide target market and (3) financial scalability.**

Business model replicability refers to the extent with which a firm can replicate all key dimensions of its business model to new geographic markets or customer segments at low costs or efforts. Financial scalability reflects the extent to which a firm projects realizing increasing gross profit margins and economies of scale. Specifically, we find that:

- A 1-standard deviation increase in business model replicability (on a scale from 3 to 15) led to a 73 000 EUR annual increase in net added value (NAV) growth on average.
- A 1-standard deviation increase in the ratio of projected economies of scale led to a 53 000 EUR increase in NAV growth on average.
- A 1-standard deviation increase in the projected gross profit margin led to a 160 000 EUR increase in NAV growth on average.
- The goal of reaching a global market had an effect of a 132 000 EUR increase in NAV growth on average.

Several factors facilitate **business model replicability:**

- Leadership: **Having a CEO and CTO or COO** helps coordination, accountability and ensures all key processes and structures in the firm are set up with an eye towards replicability.

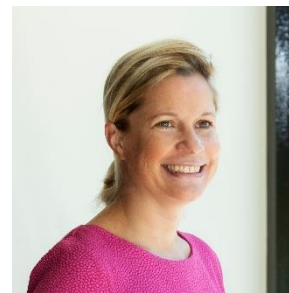
- Collaboration: Establishing and maintaining effective **partnerships between different stakeholders across multiple markets** can facilitate the replicability of the business model, as it makes it easier for a company to enter new markets by being able to leverage its partner's established distribution channels, market and regulatory knowledge and network.
- Digitization: **Having digital products or services and relying on digital resources** enables a more seamless expansion of production compared to businesses with more physical-oriented models.
- Innovation: **Patents, copyrights or trademarks can be a differentiating factor that enables a company to enter a foreign market** and replicate its business model.

Several factors also facilitate **financial scalability**:

- Leadership: Having a **CTO or COO** ensures an optimal use of technologies and processes towards enhancing efficiency.

- **Digitization**: enables companies to accommodate their business models and new users in response to demand changes, facilitates the automation of production and processes to gain cost-efficiencies, and stimulates changes to the firm's value proposition – all at low marginal cost.
- **Human capital**: Higher education levels are associated with higher projected economies of scale.

We hope you find these insights valuable.



Veroniek Collewaert
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Entrepreneurship
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Vlerick Business School

INTRODUCTION

The digital economy, encompassing IT, telecommunications, and media, is an increasingly critical component of Belgium's economy. Belgium has the fourth largest ICT sector in terms of value added (18 000M EUR) among the EU countries, following Germany, France and Sweden¹, and this sector is expected to drive the country's economy in the future². Tech start-ups and scale-ups are the ones articulating the growth of the country's technology industry³. They are actively participating in the integration of digital technology among companies, and they are dynamically engaged in global competition.

In an effort to highlight and acknowledge tech start-ups and scale-ups that are making significant contributions and paving the way to continued economic growth, Deloitte hosts the Technology Fast 50 competition. In particular, the Rising Star category aims to recognize those promising companies that, thanks to their innovation efforts, have the potential to become tech disruptors in their industries.

The Rising Star participants, on average, are 2.7 years old, have 5.7 employees and report 1.3M EUR in assets in the year of their participation. They cover a variety of industries: 58% of the companies are in ICT, 19% in Professional, scientific and technical activities, 6% in Manufacturing, 6% in Wholesale and retail trade, 5% in Administrative and support services activities and 7% in others.

This report provides a unique look at what makes a Rising Star company unique, its evolution after its participation in the competition and what factors contribute to its growth. More specifically, the first part of the report compares the Rising Star participants to a matched sample of peers to understand their differences in terms of growth, survival, employment, and funding. For the second part, we delve deeper into their growth determinants.

The report shows that, compared to the non-participant peers, Rising Stars invest significantly for growth consistent with their high-ambitious goals, which results in, on the one hand, lower survival rates in line with their riskier ambitions, but on the other hand, also in stronger growth in employees and net added value. Because of their growth orientation, they use more funding than their peers and participate in more funding rounds. Further, although they see negative and lower EBITDAs in the first years after participation, this situation turns around in the fifth year. The differences mentioned above become even more evident when contrasting the Top 10 finalists with their non-Top 10 peers because the growth ambitions of the first group are even more pronounced. Indeed, the Top 10 finalists have a higher likelihood of evolving into high-growth or even hypergrowth companies. Lastly, the factors that drive the Rising Stars' growth are having a worldwide target market, business model replicability and financial scalability.

¹ Total value added at factor cost of the Information and Communication Technology (ICT) sector in the European Union in 2020, by country | [statista-com.eu](https://www.statista.com).

² Which main business sectors will drive Belgium's growth in the coming years? | [statista-com.eu](https://www.statista.com).

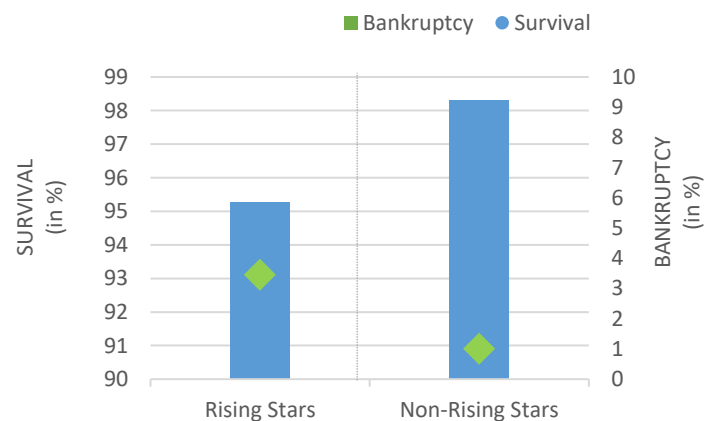
³ Technology in Belgium - statistics & facts | [statista-com.eu](https://www.statista.com).

WHAT MAKES A RISING STAR UNIQUE?

Since 2013, Deloitte Belgium has organized the Technology Fast 50 competition to identify and acknowledge Belgian tech start-ups and scale-ups that play a pivotal role in enhancing productivity and efficiency, ultimately contributing to sustained economic growth by redefining industry standards, revolutionizing business practices, melding technological innovation with entrepreneurship, and disrupting the tech sector. The Rising Star category specifically aims at recognizing promising companies that have been active in the technology sector for less than four years but have the potential to become tech disruptors⁴. With the 10-year anniversary of the Rising Star competition, the time has come to look back: what has happened to these Rising Stars (RS)? Academically, they also represent an intriguing group of companies as on the one hand they hold the promise of growth, but at the same time high growth ambitions may also go hand in hand with higher risk. In this report, we will first compare RS with comparable non-RS participants, and additionally focus on the RS finalists, which were expected to hold the highest promised at the time they entered the competition. In a second part of the report, we will identify which company-specific factors contribute to their growth, allowing to understand how to prepare a young venture for scaling up.

We first compare Rising Star participants with a sample composed of peers⁵. In line with the profile of growth-oriented ventures⁶, the companies that participate in the competition hold highly ambitious goals, including the development of new technologies, products, services and production processes, the penetration of foreign markets and globalization of overall business activities, the creation of employment, financing the business with risk capital and achieving sustainable economic growth. However, such ambitious goals may be associated with higher risk profiles. For instance, pursuing innovation may be positively correlated with the overall risk profile of the start-up, which in turn may increase the likelihood of failure⁷. In line with the profile of high growth-oriented ventures, by 2021 the Rising Star participants show a higher probability of bankruptcy and lower survival rates than their non-participant peers: 95% of the Rising Star participants survived versus 98% of the non-participants. In parallel, RS are acquired more often than non-RS (22% vs. 15%), which may be a signal of good performance.

RISING STARS HAVE LOWER SURVIVAL RATES



95% of the Rising Star participants survived versus 98% of the non-participants. In parallel, RS are acquired more often than non-RS (22% vs. 15%), which may be a signal of good performance.

Pursuing growth and other high-ambitious goals requires significant expenditures and investments that affect the immediate financial results of the companies. Indeed, as the graph below illustrates, Rising Stars had negative EBITDAs upon and after their Rising Star participation and this up until four years after participation. Throughout this period, they had lower EBITDAs compared to peers (whom in fact had positive EBITDAs); however, the difference vanished in the fifth year after participation, and the EBITDA became substantially higher for the RS in the sixth year⁸.

⁴ Technology Fast 50 (2023) | Deloitte.com.

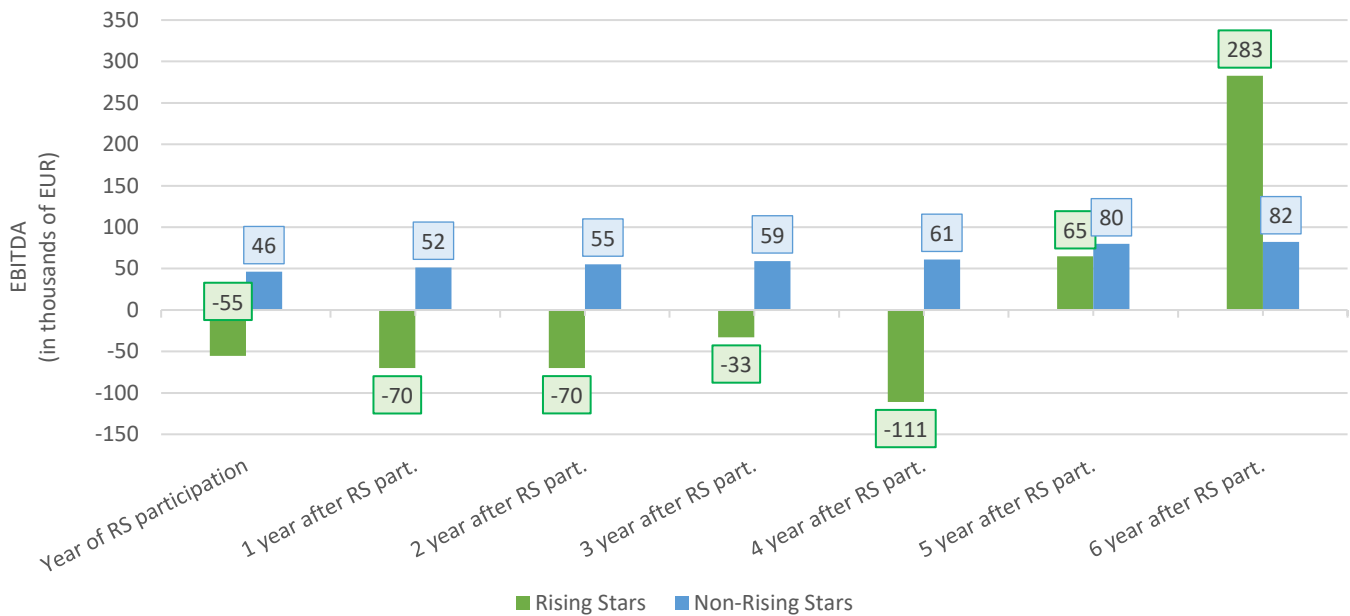
⁵ For more detailed information on our sample, we refer to our Methodology section on page 26.

⁶ Gutterman, A. (2018). Growth-Oriented Entrepreneurship. In: Growth-Oriented Entrepreneurship. Business Expert Press.

⁷ Hyytinen, A., Pajarinen, M., Rouvinen, P. (2015). Does innovativeness reduce startup survival rates? Journal of Business Venturing, 30(4), 564–581.

⁸ Since the sample becomes smaller as time goes on after the year of participation, the conclusions for the later years should be taken with caution.

RS' INVESTMENT IN GROWTH NEGATIVELY IMPACTS SHORT-TERM EBITDA BUT GRADUALLY PAYS OFF



The creation of employment by recruiting and onboarding talent that fulfils the companies' goals is one of the main characteristics of growth-oriented ventures⁹. When businesses invest for growth, they often need to hire employees to support their growth and operations. After all, scaling up a company requires not only the ambition to grow, but also having enough resources to pursue such goals^{10 11}. Hence, growth in employees is typically considered one of the main proxies to assess whether a venture is scaling up. In parallel, of course, investments in growth ideally also result in more revenues: i.e., while the bottom-line may take longer to materialize, one would at least expect to already see growth in the topline. As companies in Belgium are not required to publish their revenues, we considered the next best proxy: net added value, defined as a firm's operating income (i.e., revenues) minus costs of raw materials, services and other goods.

As the two graphs below show, RS participants showed an equal number of employees but a higher net added value compared to their peers upon participation. As time progresses though, RS widen the gap: from a three-employee difference one year after participation to an eleven-employee difference in the fifth year after participation, and from a 235 000EUR difference in net added value one year after participation to a 1M EUR difference in the fifth year after participation. Logically, RS hence also experience a far more positive employee growth (1.7 times larger than their peers') and net added value growth (2.4 times larger than their peers') in the first three years after RS participation; however, it starts to gradually even out in the next years.

⁹ Gutterman, A. (2018). Growth-Oriented Entrepreneurship. In: Growth-Oriented Entrepreneurship. Business Expert Press

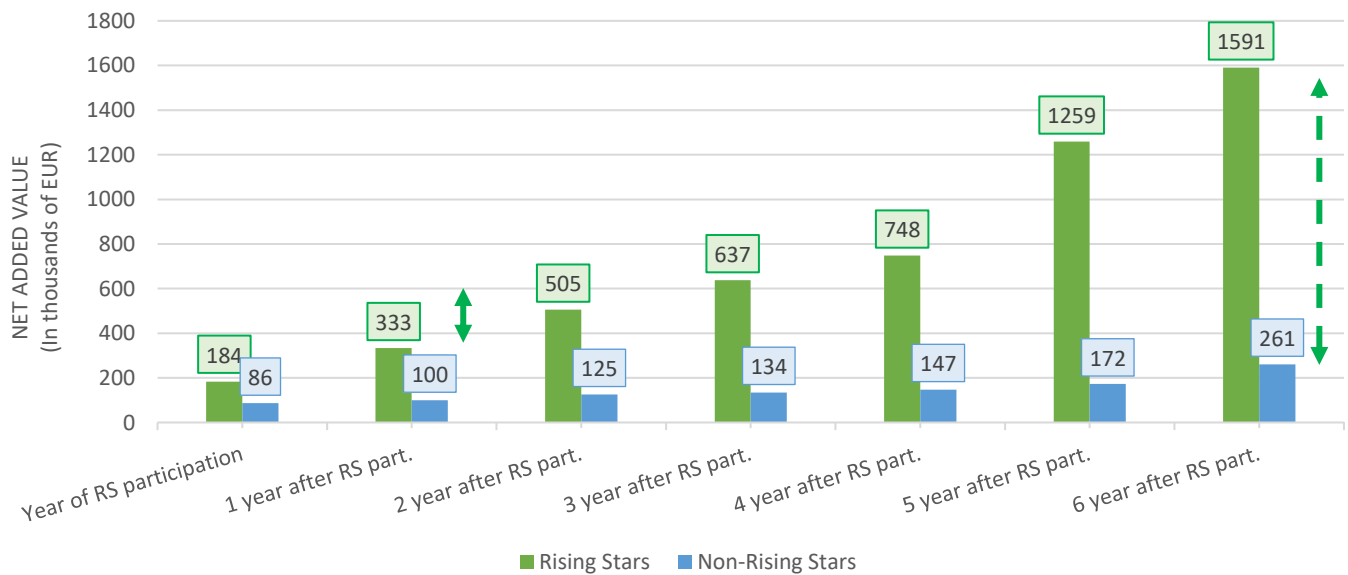
¹⁰ European Scale-Up report (2019) | Startups.be and Scaleups.eu

¹¹ Rising Star Monitor (2022) | deloitte.com

THE GAP IN EMPLOYMENT BETWEEN RS AND THEIR PEERS INCREASED OVER TIME

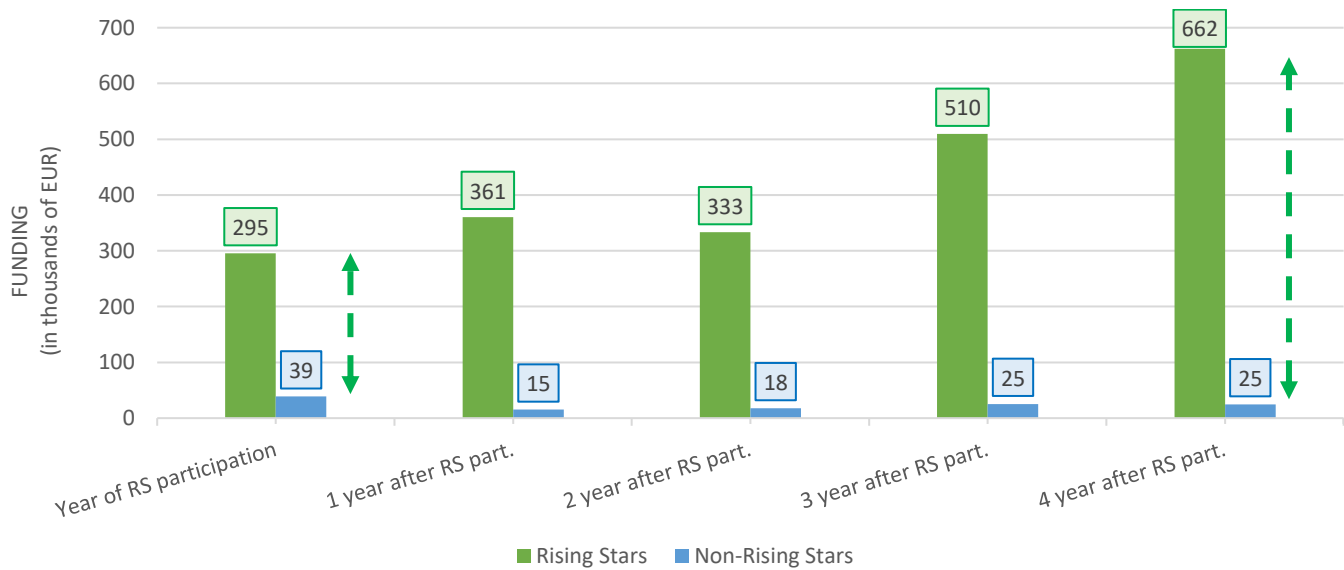


THE GAP IN NET ADDED VALUE BETWEEN RS AND THEIR PEERS INCREASED OVER TIME



To secure growth, growth-oriented ventures will require funds to invest. To this end, they can rely on a combination of internal and external funding sources. Overall, RS participated in more funding rounds and used substantially more funding than their non-participant peers. In particular, RS participated in one funding round and increased their funding with, on average, 400 000 EUR per year between the year of participation and six years afterwards vs. their non-participant peers who participated in 0.25 funding rounds and raised, on average, 20 000 EUR per year in the same period. RS also keep on having higher funding in the years to follow, increasing the gap between the RS participants and their peers over time.

RS CAME IN WITH HIGHER FUNDING AND KEPT ON HAVING HIGHER FUNDING IN THE YEARS TO FOLLOW



In conclusion, the results show that Rising Stars enter the competition with better performance in terms of net added value. They also enter with more funding, while having a worse EBITDA. This picture upon entry already suggests Rising Stars aim to invest for growth and raise the required resources to do so. This also pays off, as is illustrated by their results in the following years, with an immediately widening gap to their peers in terms of growth in both employees and net added value as well as a longer-term uptake in EBITDA. However, this trajectory comes with higher risk and lower survival rates.

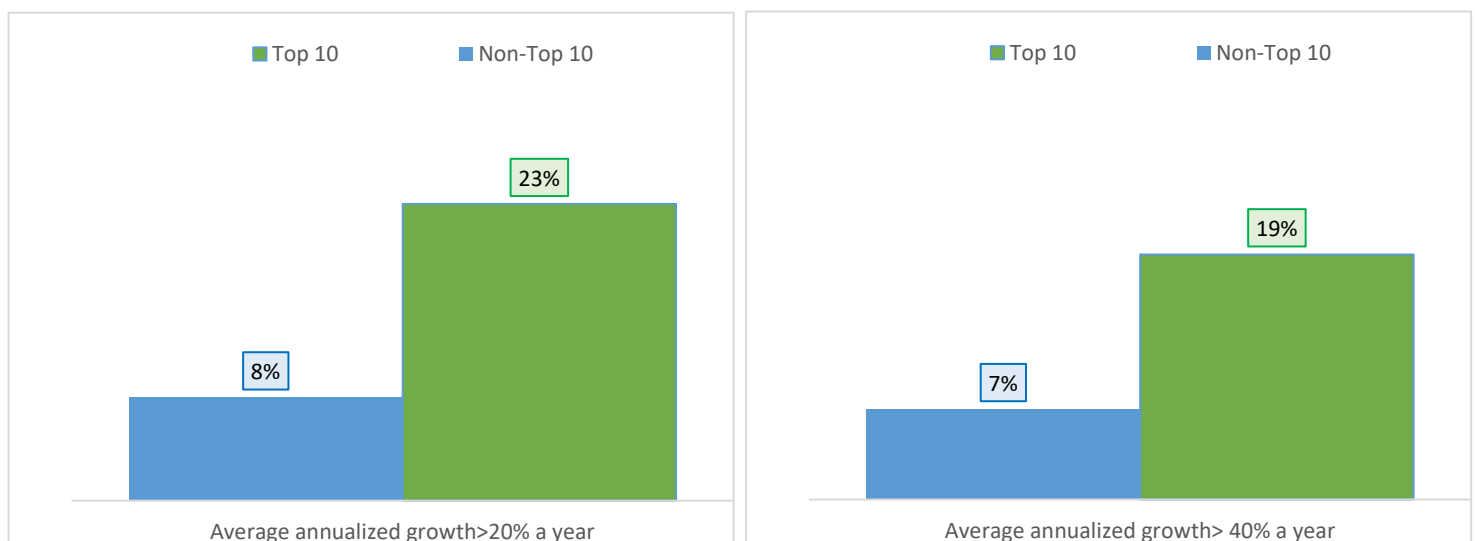
The following subsection assesses whether there are differences between the Rising Stars that can potentially lead to different growth trajectories.

TOP 10 VS NON-TOP 10

The Rising Star competition encompasses the selection of 10 finalists based on a combination of criteria including, but not restricted to, scalability, market potential, team, and innovativeness. As such, one would expect the “investing for growth” pattern detected in RS to be even more pronounced in the Top 10.

Indeed, the top 10 RS are more likely to become high-growth firms, i.e., firms with an average annualized growth greater than 20% a year over a 3-year period, and with 10 or more employees at the beginning of the observation period¹² and even hypergrowers, i.e., ventures with an average annualized growth greater than 40% a year, over a 3-year period. Specifically, 23% of the top 10 RS became high-growth firms versus 8% of the non-top 10 RS. Further, 19% of the top 10 RS became hypergrowers compared to 7% of their non-top 10 peers.

23% OF THE TOP 10 FINALISTS ARE LIKELY TO BECOME HIGH-GROWTH FIRMS AND 19% HYPERGROWERS

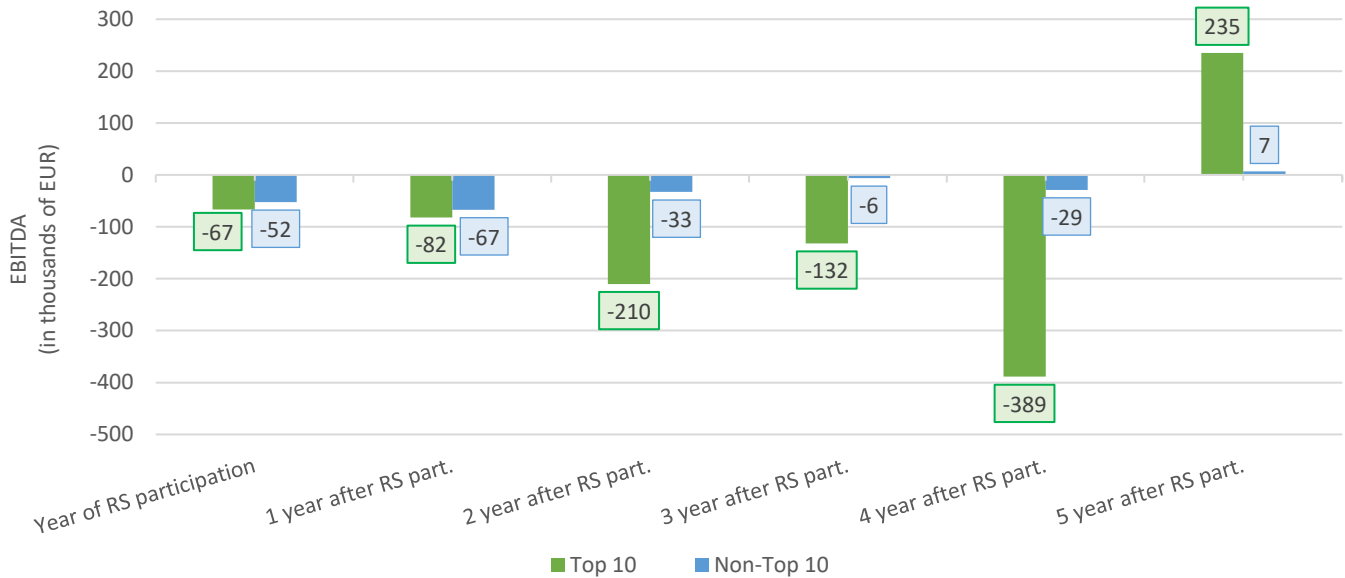


Because of such strong investment for growth, the top 10 finalists indeed reveal more negative EBITDA patterns in the initial years after participation, followed by a stronger performance uptake in the longer term, combined with even stronger employment creation and net added value as well as a higher level of funding.

More specifically, the top 10 experienced negative EBITDAs both during and for up to four years after their Rising Star participation. Throughout this period, these companies had lower EBITDAs in comparison to their non-top 10 counterparts. Nevertheless, in the fifth year, the Top 10’s EBITDA surpassed that of the non-Top 10. Likewise, and although both groups experienced EBITDA contraction in the first three years after RS participation, the one of the top 10 was far more negative than for the non-top 10 (-1934% vs -49%); however, it started to gradually improve and even out in the next periods.

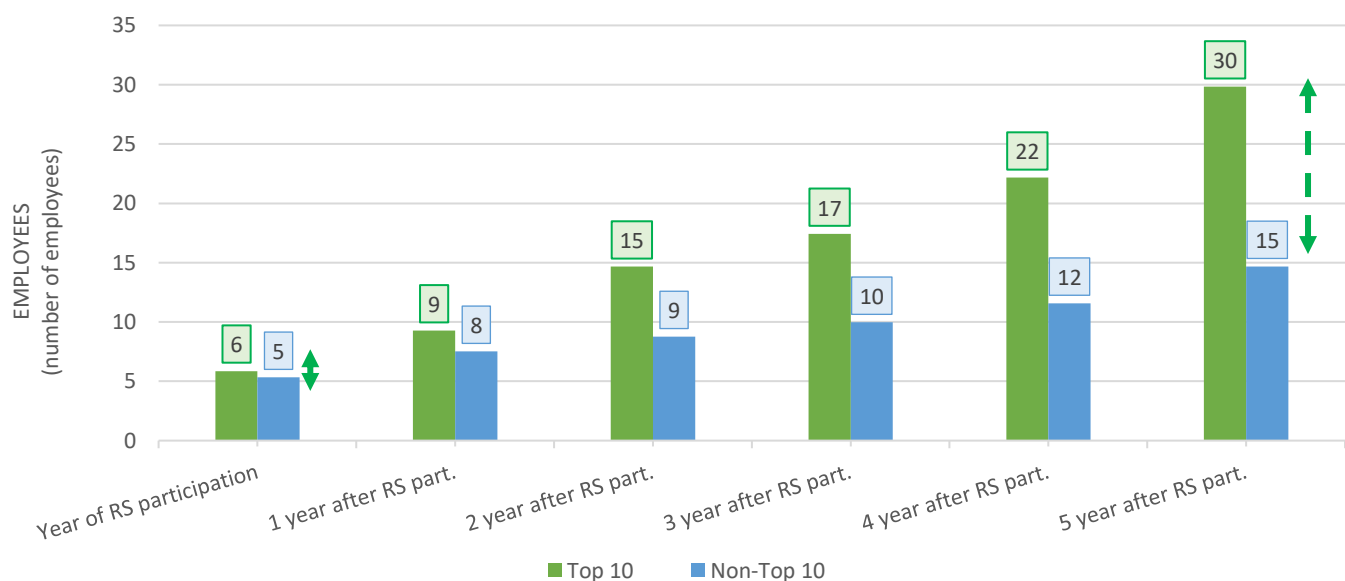
¹² This definition is based on OECD (2010). High-Growth Enterprises What Governments Can do to Make a Difference. Paris: OECD Publishing

THE TOP 10 FINALISTS' INVESTMENT IN GROWTH NEGATIVELY IMPACTED THE IMMEDIATE FINANCIAL RESULTS OF THE COMPANIES BUT GRADUALLY PAID OFF

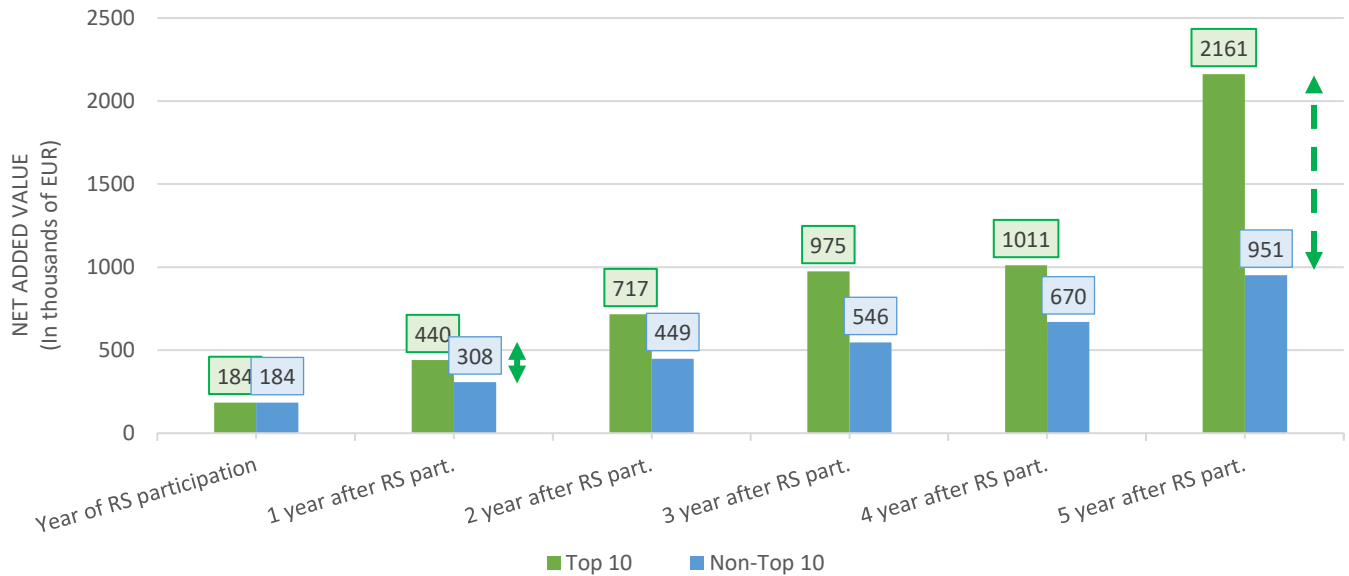


In line with a more pronounced investment for growth, and although both top 10 RS and non-top 10 RS have a similar number of employees and net added value upon their participation, the gap between the two groups increases as time progresses, as shown in the graphs below. Indeed, the difference in number of employees between the top 10 and their peers rose. In the first year of participation, the top 10 RS employed six people versus five for non-top 10 RS. Five years after their participation, top-10 RS employed 30 employees, compared with 15 employees in non-top 10 RS. Likewise, while the net added value was the same in both groups in the year of participation (184.000 EUR), the top-10 RS generated 2M EUR net added value five years later, compared with 1M EUR generated by the non-top 10 firms.

THE EMPLOYMENT GAP BETWEEN THE TOP 10 FINALISTS AND THEIR PEERS INCREASED OVER TIME

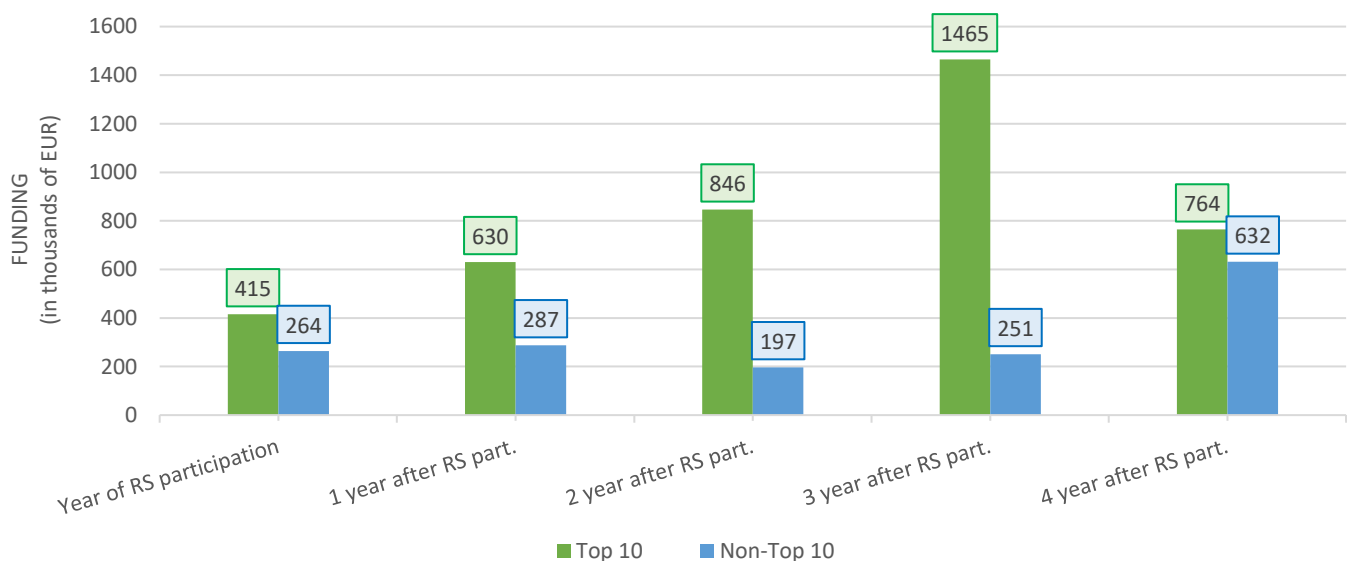


THE NET ADDED VALUE GAP BETWEEN THE TOP 10 FINALISTS AND THEIR PEERS INCREASED OVER TIME



In accordance with a prominent investment in growth, the top 10 RS used substantially more funding and participated in more funding rounds than their non-top 10 peers during and for up to three years after their Rising Star involvement. Specifically, the top-10 RS increased their funding with, on average, 3M EUR and participated in two funding rounds between the year of participation and six years afterwards, compared to 1M EUR and one funding round for non-top 10 peers.

TOP 10 FINALISTS CAME IN WITH HIGHER FUNDING AND KEPT ON HAVING HIGHER FUNDING IN THE YEARS TO FOLLOW



In the next section, we delve deeper into the determinants of their growth.

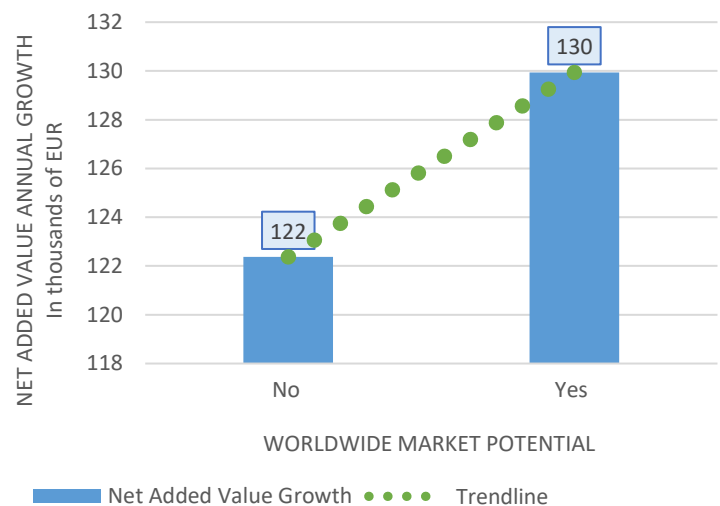
WHAT DRIVES THE GROWTH OF A RISING STAR?

The previous section clearly shows RS participants grow after their participation. Hence, the next question then becomes: why? To answer this, we studied which factors enable higher growth in net added value one year after RS participation. Controlling for traditional growth predictors such as firm age, firm size, team size, team connections and roles, innovation, industry, and year effects, the three most important predictors of growth, measured at the time of participation, are (1) worldwide target market, (2) the replicability of the firm’s business model and (3) the financial scalability.

THE WORLD AS YOUR OYSTER PAYS OFF

Growth is influenced by the ambition of entrepreneurs¹³ represented by their target market. Specifically, entrepreneurial teams that have global ambitions from the beginning are likely to prioritize the development of a global business model. This approach makes them more inclined to anticipate and plan, in advance, to shift from domestic to international customers. At the opposite end of the spectrum, numerous companies cultivate competencies tailored specifically to their domestic market right from the start-up phase, which can result in domestic inertia through path dependencies. The latter makes subsequent internationalization difficult since reorienting resources is challenging without leading to substantial losses of invested resources¹⁴. Lastly, an intermediate goal between the two previous scenarios, e.g., one that targets a supranational market, enables prioritizing the development of a business model and the corresponding competencies tailored for such a market. In this case, internationalization is planned in advance but would have a more limited scope compared to the global reach scenario. In line with this assertion, we find that ventures aiming to address a global market¹⁵ (65% of our sample) have, on average, 132 000 EUR higher NAV growth in the first year after participation.

VENTURES WITH THE GOAL OF REACHING A GLOBAL MARKET EXPERIENCED HIGHER GROWTH



132 000 EUR higher NAV growth in the first year after participation.

BUSINESS MODEL REPLICABILITY AS A KEY GROWTH DRIVER

Scaling can be achieved through the large-scale execution of an established business model by replicating it in new markets - either new types of customer segments or new geographic markets - since such replication can facilitate the diffusion and implementation of templates or solutions at a larger scale¹⁶. The key to successful replication is having to make only minimal adaptations to the business model to suit different locations and/or customer segments¹⁷.

¹³ Zhou, H., de Wit, G. (2009). Determinants and Dimensions of Firm Growth. SCALES EIM Research Reports.

¹⁴ Reuber, A., Tippmann, E., Monaghan, S. (2021). Global scaling as a logic of multinationalization. *Journal of International Business Studies*, 52, 1031–46

¹⁵ The goal of reaching a global market was operationalized with a dummy variable that takes the value of 1 when companies target a global reach and zero otherwise.

¹⁶ Reuber, A., Tippmann, E., Monaghan, S. (2021). Global scaling as a logic of multinationalization. *Journal of International Business Studies*, 52, 1031–46 each category

¹⁷ Jansen, J., Heavey, C., Mom, T., Simsek, Z., Zahra, S. (2023). Scaling-up: Building, Leading and Sustaining Rapid Growth Over Time. *Journal of Management Studies*, 60(3), 581–604.

We measured business model replicability as the extent to which the firm can easily replicate (i.e., copy-paste) three business model dimensions (i.e., the products or services the firms offers, its method for producing or sourcing products or services and its method for promoting or selling its product or services) as it would enter new markets. Combining these three dimensions results in an overall score which ranges from a minimum of three (not at all easy to replicate any of the three dimensions) to a maximum score of fifteen (very easy to replicate all three dimensions). Amongst RS, the minimum score is 8, while the average (and median) score is 12 which suggests all RS have some replicability ensured in their business model. Our analyses show that the first-year growth after participation among RS participants is significantly driven by a higher score in their business model replicability. More specifically, a 1-standard deviation increase in the score already leads to a 73,000 EUR increase in net added value growth on average. Especially firms with levels of replicability of twelve or higher show a high growth.

VENTURES WITH HIGHER BUSINESS MODEL REPLICABILITY SCORE EXPERIENCED HIGHER GROWTH



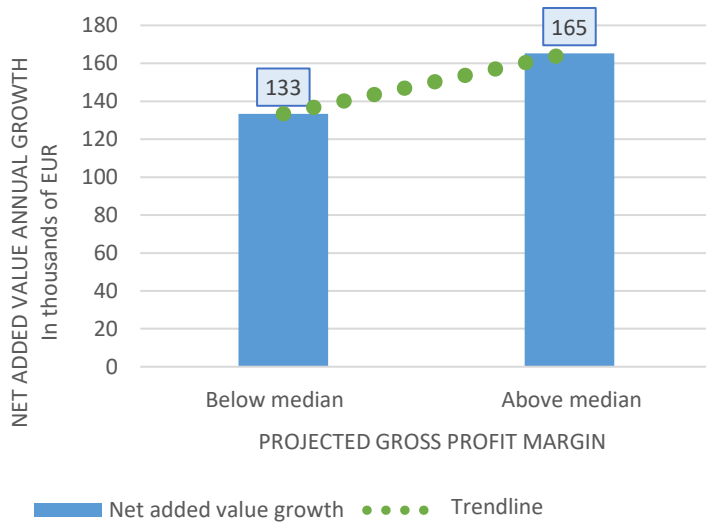
*8 is the minimum replicability score of the sample

THE ROLE OF FINANCIAL SCALABILITY

Another source of growth is financial scalability. Scalability refers to the capability of a business model to expand and grow its operations while maintaining or even increasing efficiency and profitability¹⁸. When a business can scale effectively, it experiences higher profit margins since its incremental revenue contributes more to profit, after subtracting the costs.

¹⁸ Zhou, H., de Wit, G. (2009). Determinants and Dimensions of Firm Growth. SCALES EIM Research Reports.

VENTURES WITH HIGHER PROJECTED GROSS PROFIT MARGIN EXPERIENCED HIGHER GROWTH

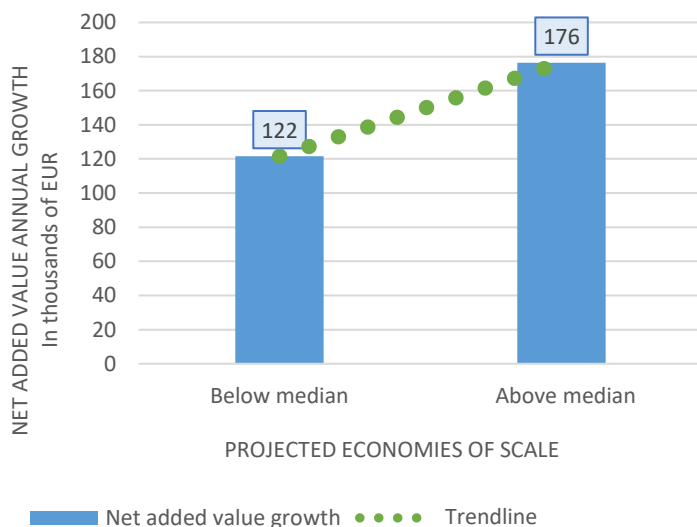


We calculated the projected gross profit margin to assess the effect of financial scalability on growth. It is obtained by dividing the difference between projected revenue and projected cost by the projected revenue. This ratio estimates whether the company projects to effectively generate profit from its sales.

Amongst the Rising Star participants, the minimum ratio is -180%, the maximum is 97%, and the average is 18%. Our results show that the first-year growth after participation among RS participants is significantly driven by their projected gross profit margin. RS participants who projected higher gross profit margins saw higher growth rates after their participation. More specifically, a 1-standard deviation increase in the ratio led to a 160 000 EUR increase in net added value growth on average.

Financial scalability may take place as a consequence of economies of scale, i.e., firms can reach more outputs (e.g., revenues) without incurring a proportionate increase in costs (i.e., almost zero marginal cost)¹⁹. Firms can achieve economies of scale if they are able to develop bundles of resources that can scale up and obtain cost advantages through cost-efficient production or distribution processes²⁰.

VENTURES WITH HIGHER PROJECTED ECONOMIES OF SCALE EXPERIENCED HIGHER GROWTH



As such, we proxied for economies of scale by dividing a firm's projected relative revenue growth by its projected relative growth in fixed costs. This ratio hence allows us to assess whether a venture projects its revenues to grow faster than its fixed costs. RS participants that projected higher economies of scale are also the ones that saw higher growth rates after their participation. Indeed, a 1-standard deviation increase in the ratio led to a 53 000 euro increase in net added value growth on average.

Now that we have discovered that the worldwide market potential, business model replicability and financial scalability enable growth, we further aim to understand which factors correlate with them. In the next sections, we delve deeper into these factors.

¹⁹ What Factors Contribute to an Economic Scale?) | bizfluent.com

²⁰ Jansen, J., Heavey, C., Mom, T., Simsek, Z., Zahra, S. (2023). Scaling-up: Building, Leading and Sustaining Rapid Growth Over Time. Journal of Management Studies, 60(3), 581-604

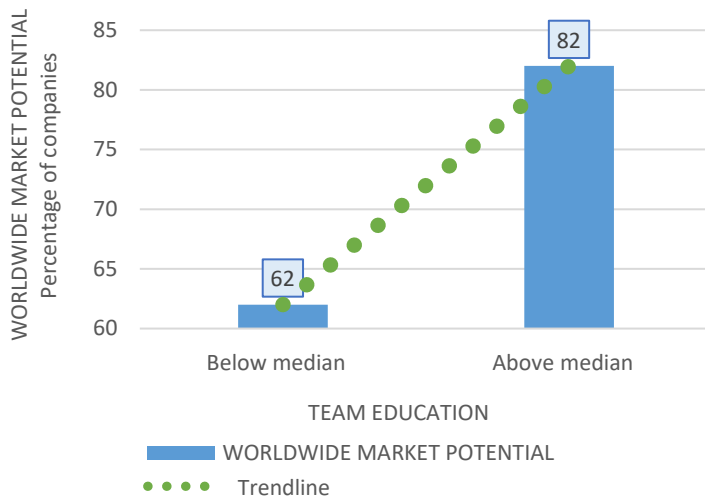
EDUCATION AND WORLDWIDE MARKET POTENTIAL

The prioritization of the development of a global business model that encompasses replication is determined by the global ambition of entrepreneurial teams. One crucial characteristic that may be related to their intentions for scale and growth is human capital (e.g., education). More highly educated teams, on average, want to have a global reach. This may be

due to their opportunity costs²¹. More specifically, high human capital is highly valued by the labor market due to its association with heightened productivity and effectiveness. As a result, individuals with substantial human capital tend to earn higher incomes, reflecting their abilities and training investments. Such individuals also have more attractive alternatives available to them, resulting in elevated opportunity costs. Consequently, they would be more inclined to pursue entrepreneurial ventures with substantial expected rewards aligned with global reach²².

Amongst RS, on a scale from 1 to 4, the average education level of their entrepreneurial teams is 3 (and median)²³, i.e., having Masters degrees. 82% of the teams whose average education level is above the median target a global reach while this is the case for only 62% of the teams whose average education level

MORE EDUCATED TEAMS ON AVERAGE TARGET A GLOBAL REACH



is below the median.

FACTORS RELATED TO BUSINESS MODEL REPLICABILITY

Scaling by replicating business practices and processes that outperform alternatives aids a firm in achieving a predictable timeline with a higher likelihood of operational success²⁴. More specifically, a repeatable model's strength resides in its capacity to convert the sources of differentiation within its business model (e.g., superior practices compared to alternatives) into well-established routines, behaviors, and activity systems that are accessible to everyone in the organization. This guarantees that when a company enters a new market, it possesses the understanding and capacity necessary to maintain the differentiation that initially fuelled its success²⁵.

Replicating is occasionally mistakenly seen as the exploitation of a business formula²⁶. On the contrary, it is a two-phase complex process that involves an exploratory phase where the business model is uncovered and refined and an exploitative phase where the business model is stabilized and utilized for large-scale replication²⁷. For this to happen, several organizational factors must come together and may be related with the replicability of the business model, such as innovation, collaboration with alliance partners, digitization and the role division in the organization.

²¹ Opportunity costs refer to the potential income that could be earned from conventional employment instead of pursuing entrepreneurial endeavor.

²² Cassar, G. (2006). Entrepreneur opportunity costs and intended venture growth. *Journal of Business Venturing*, 21(5), 610–632

²³ The average education level of the team was calculated based on the following categories: high school=1; bachelor =2; masters=3; PhD=4

²⁴ Jansen, J., Heavey, C., Mom, T., Simsek, Z., Zahra, S. (2023). Scaling-up: Building, Leading and Sustaining Rapid Growth Over Time. *Journal of Management Studies*, 60(3), 581–604.

²⁵ The Great Repeatable Business Model (2011) | hbr.com.

²⁶ Winter, S. G., Szulanski, G. (2001). Replication as strategy. *Organization Science*, 12(6): 730–743

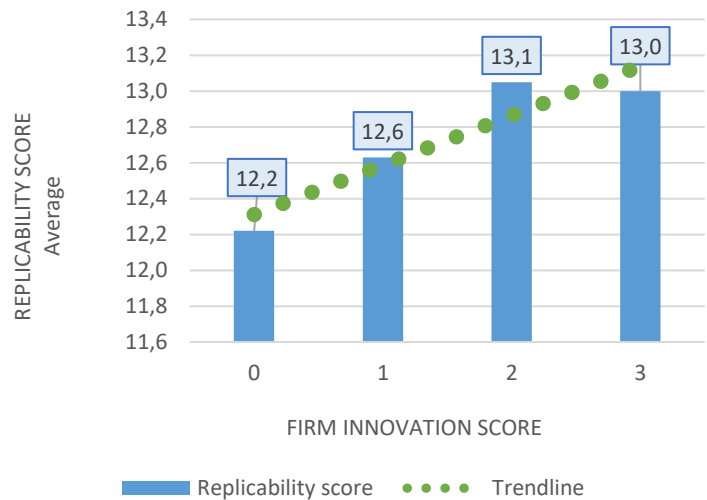
²⁷ Winter, S. G., Szulanski, G. (2001). Replication as strategy. *Organization Science*, 12(6): 730–743

Innovation

Formal intellectual property rights (IPRs) such as patents, copyrights, and trademarks play a crucial role for start-ups in capturing the value of their concepts and ensuring a return on their investments in innovation. Furthermore, these firms can rely on IPR protection when entering foreign markets to scale their operations and more effectively compete with established companies²⁸. Indeed, IPRs can be one of the sources of differentiation that guarantees the success and ease of business model replicability across different markets.

In line with this, we find that RS participants with higher replicability scores can be associated with both having patents, copyrights, and trademarks in their innovation strategies²⁹ and offering products or services characterized by high levels of innovation³⁰. RS had, on average, 0.4 types of IPRs. Those companies with more than two types of IPRs, and thus, the highest scores in innovation (2 or 3) scored 13 in replicability, while those companies without such types (lowest score in innovation) had the lowest score in replicability (12.2).

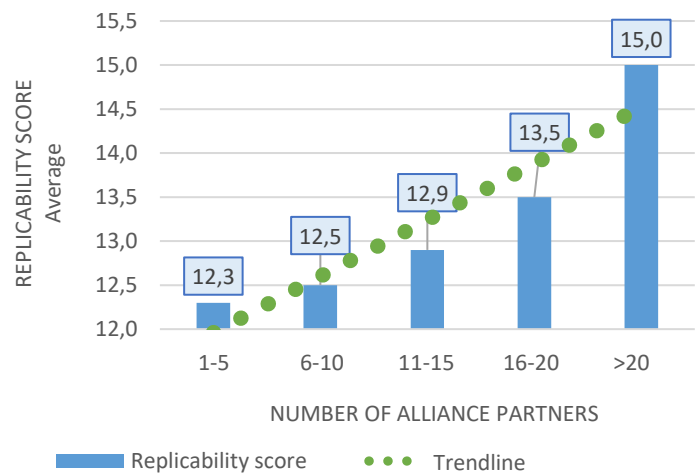
FIRM INNOVATION RELATES TO BUSINESS MODEL REPLICABILITY



Collaboration is key

Establishing and maintaining effective partnerships between different stakeholders across multiple markets is also related to the replicability of the business model. There are numerous examples of companies that experience delays when replicating their business models because of the difficulties of establishing and managing international distribution partnerships with public, private, or non-governmental organizations³¹. For instance, although Temptime offered a promising technology to monitor vaccine temperature and address a need of the health industry, the company had a 30-year journey between 1979, when the World Health Organization put out a call for such a technology to be invented, and 2007, when there was mass adoption by vaccine manufacturers³². Scaling took decades due to the difficulties the company experienced in establishing partnerships with other industry stakeholders³³.

COLLABORATION WITH ALLIANCE PARTNERS RELATES TO BUSINESS MODEL REPLICABILITY



²⁸ High-growth firms and intellectual property rights (2019) | European Union Intellectual Property Office

²⁹ Firm innovation score was defined as the sum of the existence of the following components in the firm’s innovation strategy: patents, copyrights and trademarks. The final score had a range from 0 to 3.

³⁰ The innovative nature of the product was defined on a scale from 1 (not at all innovative) to 5 (very innovative).

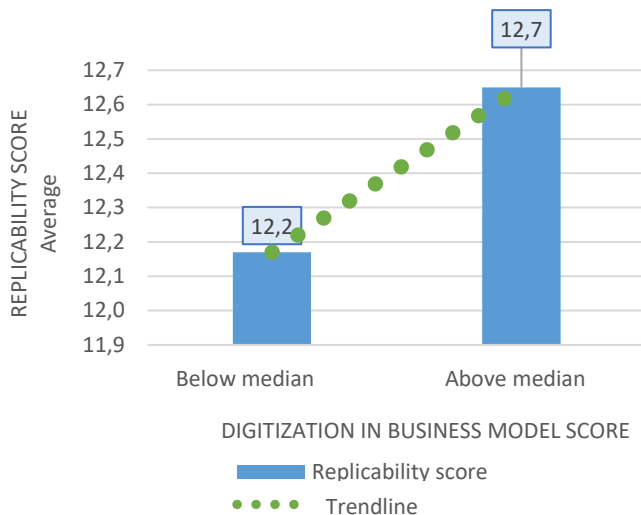
³¹ Reuber, A., Tippmann, E., Monaghan, S. (2021). Global scaling as a logic of multinationalization. *Journal of International Business Studies*, 52, 1031–46

³² Schiffrin, D., & Davis, A. 2016. Vaccine vial monitors: “The little big thing” taking social innovation to scale. Case SI-145. Stanford, CA: Stanford Graduate School of Business.

³³ Reuber, A., Tippmann, E., Monaghan, S. (2021). Global scaling as a logic of multinationalization. *Journal of International Business Studies*, 52, 1031–46

RS participants had, on average, 2.6 alliance partners. We find that companies with a higher number of alliance partners also had a higher replicability score. Specifically, RS with more than twenty alliance partners scored 15 on average in their replicability score compared to those companies with one to five alliance partners that scored 12.3.

DIGITIZATION IN BUSINESS MODEL RELATES TO BUSINESS MODEL REPLICABILITY



Digitization

Having a digital business model has often been named as a facilitator of replication. Selling digital products or services (e.g., platforms, software, media) and heavily relying on digital resources such as software, algorithms or data allows for more seamless expansion of production compared to businesses with more physical-oriented models. The latter typically face more limits in terms of production and distribution whereas digital firms can produce and distribute digital products and services at minimal additional cost, enabling them to quickly sell large quantities of their offerings globally without requiring a substantial physical presence³⁴. The latter can also benefit when firms depend on digital resources such as software, algorithms, and data, since such resources are more scalable on average, and their scalability is more likely to persist through much higher volumes of output³⁵.

Most RS could be considered digital firms in that they either sell digital products or services, or heavily rely on digital resources, which is evident in their average score of 8 out of 10 in the digitization in the business model score³⁶. Within this context, RS participants who make extensive use of digital resources and predominantly offer digital products or services (reflecting a high level of digitization in its business model) have a higher replicability score. Specifically, the companies whose level of digitization was above the median value (8) scored 12.7 in replicability and those whose level was below the median scored 12.2 in replicability.

Along the same lines, the few firms relying on data analytics³⁷ (e.g., big data, data science, artificial intelligence and natural language processing) also have higher replicability scores.

Leadership

Assigning clear leadership roles is a generally recommended practice as part of building a firm foundation for future growth. Doing so facilitates coordination and accountability, both of which are key in scaling. Our results suggest that having a clear role division between CEO, COO and CTO may also facilitate business model replication. All three play a key role in setting out the firm's strategy, with the CEO being the key decision-maker. Operations, however, also serve as a crucial tool for every start-up, providing the framework to consistently deliver products and services promptly and

³⁴ Giustiziero, G.; Kretschmer, T.; Somaya, D.; Wu, B. (2021). Hyperspecialization and Hyperscaling: A Resource-based Theory of the Digital Firm. In: Research paper

³⁵ Giustiziero, G.; Kretschmer, T.; Somaya, D.; Wu, B. (2021). Hyperspecialization and Hyperscaling: A Resource-based Theory of the Digital Firm. In: Research paper

³⁶ The digitization in the business model score was defined as the sum of the extent to which firms use a significant share of digital resources (scale from 1 to 5) and sell a significant share of digital products or services (scale from 1 to 5). The final score had a range from 2 to 10.

³⁷ The data analytics in the business model score was defined as the sum of the existence of the following components: big data, data science, data analytics, AI, NLP. The final score had a range from 0 to 5.

uphold high-quality standards³⁸. In this domain, the COO may facilitate defining a firm's structure and operational processes in a way that they can be replicated across multiple markets at relatively low additional costs or effort. On the other hand, a CTO is responsible for setting the firm's technological strategy in a context where technology is the best way to open multiple markets where the business model can be replicated³⁹ ⁴⁰. Another interpretation may also be that firms with more replicable business models recognize the value of having these leadership roles in place and put them in place to ensure an effective implementation of the business model. Consistent with both assertions, we find that the RS companies with a CEO (which was about 78% of the RS) reported 12.4 on average in their replicability scores versus their peers without such roles that reported 12.1. Further, the RS companies with a COO or CTO (which was about 40% of the RS) reported slightly higher replicability scores than those without such roles (12.5 versus 12.3, on average). As the numbers illustrate, this correlation is the smallest one of all factors mentioned though.

³⁸ What is the Tech COO Role? (2019) | visiontovalueframework.com

³⁹ Why a CTO is key to rapid scale-up growth (2018) | growthbusiness.co.uk

⁴⁰ 6 Ways That Emerging Technology Is Disrupting Business Strategy (2020) | Harvard Business School Working Knowledge

FACTORS RELATED TO FINANCIAL SCALABILITY

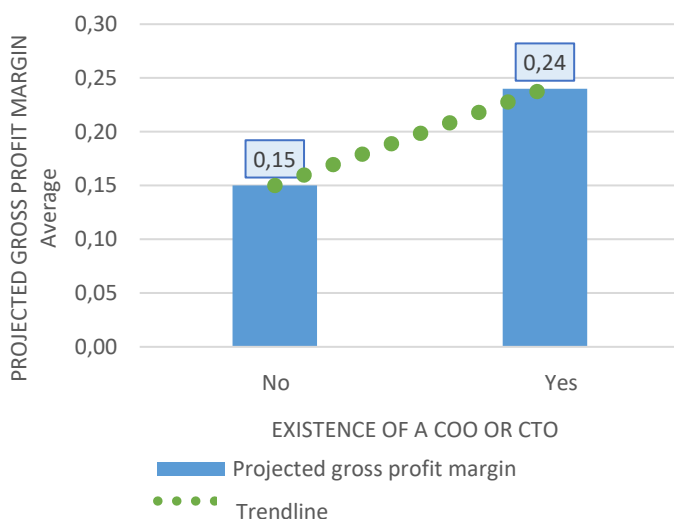
Economies of scale arise due to enhanced operational efficiencies that become more pronounced as the scale of production increases. Such efficiencies can originate from diverse sources, including heightened management quality, the adoption or optimization of technologies that enhance efficiency and bulk purchasing⁴¹. For this to happen, several organizational factors have to come together and may be related to financial scalability, such as the professionalization of the organization, its digitalization and the background of its team.

Leadership

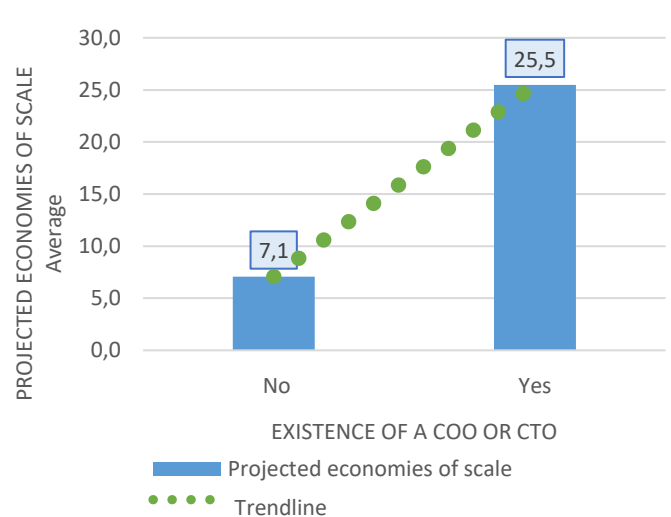
To be able to prepare for and handle scalability, a degree of professionalization is required. Such professionalization entails the implementation of new organizational structures, which includes the formalization of processes and roles, the increase of functional specialization and the decentralization of decision-making⁴². Within this context, the CTO and COO have crucial roles. The first must guarantee the development and implementation of the tech strategy⁴³, and the second must guarantee the efficient implementation of the operational strategy and oversee the daily administrative and operational functions of the business⁴⁴. In the execution of these tasks, both roles help to ensure that their domains operate under economies of scale through the optimization of technologies and processes that enhance efficiency. As mentioned before, another interpretation may also be that firms more quickly hire for these roles to execute upon projected financial scalability.

In this context, we find that Rising Stars with a CTO or COO projected higher gross profit margins and economies of scale. More specifically, Rising Stars that had either role when participating in the competition projected a gross profit margin of 24% versus their peers without such roles who reported an expected 15% gross profit margin. Likewise, the companies with a CTO or COO expected their projected revenue growth to be, on average, 25.5 times the growth of their projected costs; in contrast, those companies without such roles expected only 7 times. This suggests the first group projected to reap more significant economies of scale.

THE EXISTENCE OF A COO OR CTO RELATES TO PROJECTED GROSS PROFIT MARGIN



THE EXISTENCE OF A COO OR CTO RELATES TO PROJECTED ECONOMIES OF SCALE



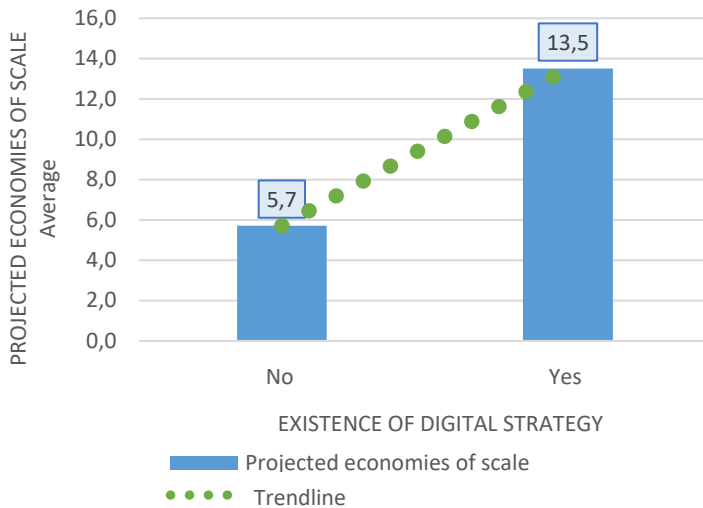
⁴¹ Economies of Scale | Corporate Finance Institute

⁴² Kaehr Serra, C., & Thiel, J. (2019). Professionalizing entrepreneurial firms: Managing the challenges and outcomes of founder-CEO succession. *Strategic Entrepreneurship Journal*, 13(3), 379–409.

⁴³ CTO-ing: What does a CTO do? | linkedin.com

⁴⁴ Blumberg, M., Birkeland, P., (2021). *Startup CXO: A Field Guide to Scaling Up Your Company's Critical Functions and Teams*. Wiley

THE EXISTENCE OF A DIGITAL STRATEGY RELATES TO PROJECTED ECONOMIES OF SCALE



Digitization

There are several ways digitization, articulated through a digital strategy, may facilitate economies of scale. Firstly, the high scalability and adaptability of digital products and processes allow companies to accommodate their business models and add new users with minimal additional cost. For instance, digitization enables a direct connection between companies and their users through the internet and social media, which helps companies build brand awareness and consumer relationships at minimal cost. Secondly, since scaling requires the optimization and formalization of processes, digitization can enable firms to improve the efficiency of their processes or even replace some of the manual and human-capital-intensive tasks in the business model with alternatives. Lastly, digitization can foster changes to the firm’s value proposition when side effects can

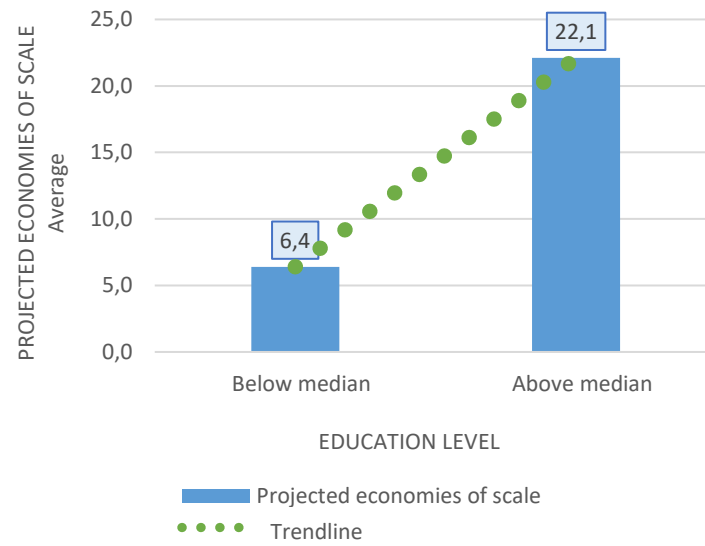
appear together with the initial offering, modifying or even increasing the initial value proposition. For instance, firms that rely on digital platforms can benefit from positive network effects, so the value of their initial offering increases according to the platforms’ number of users⁴⁵.

We find that the Rising Star participants that had a digital strategy⁴⁶ (45% of the companies) reported the growth of their projected revenues was, on average, 13.5 times the growth of their projected costs, while those companies without such strategy reported 5.7 times, which implies the first group projected to reach more significant economies of scale.

Human capital: Human capital influences decision-making related to opportunity recognition and assessment⁴⁷. Indeed, more educated teams, on average, may be better able to recognize and evaluate opportunities for economies of scale. In the case of the RS participants, more educated teams have higher projected economies of scale. Indeed, those teams whose average education level was above the median (3) expected the growth of their projected revenues to be, on average, 22 times the growth of their projected costs; in contrast, those teams whose average education level was below the median reported 6.4 times, which means the first group projected to reach stronger economies of scale.

⁴⁵ Piaskowska, D., Tippmann, E., Monaghan, S. (2021). Scale-up modes: profiling activity configurations in scaling strategies. *Long Range Planning*, 54(6), 102–10
⁴⁶ The existence of a digital strategy was operationalized with a dummy variable that takes the value of 1 when companies had a digital strategy and zero otherwise.
⁴⁷ Shepherd, D., Williams, T., Patzelt, H. (2015). Thinking About Entrepreneurial Decision Making: Review and Research Agenda. *Journal of Management*, 41(1), 11–46.

HIGH LEVEL OF HUMAN CAPITAL RELATES TO PROJECTED ECONOMIES OF SCALE

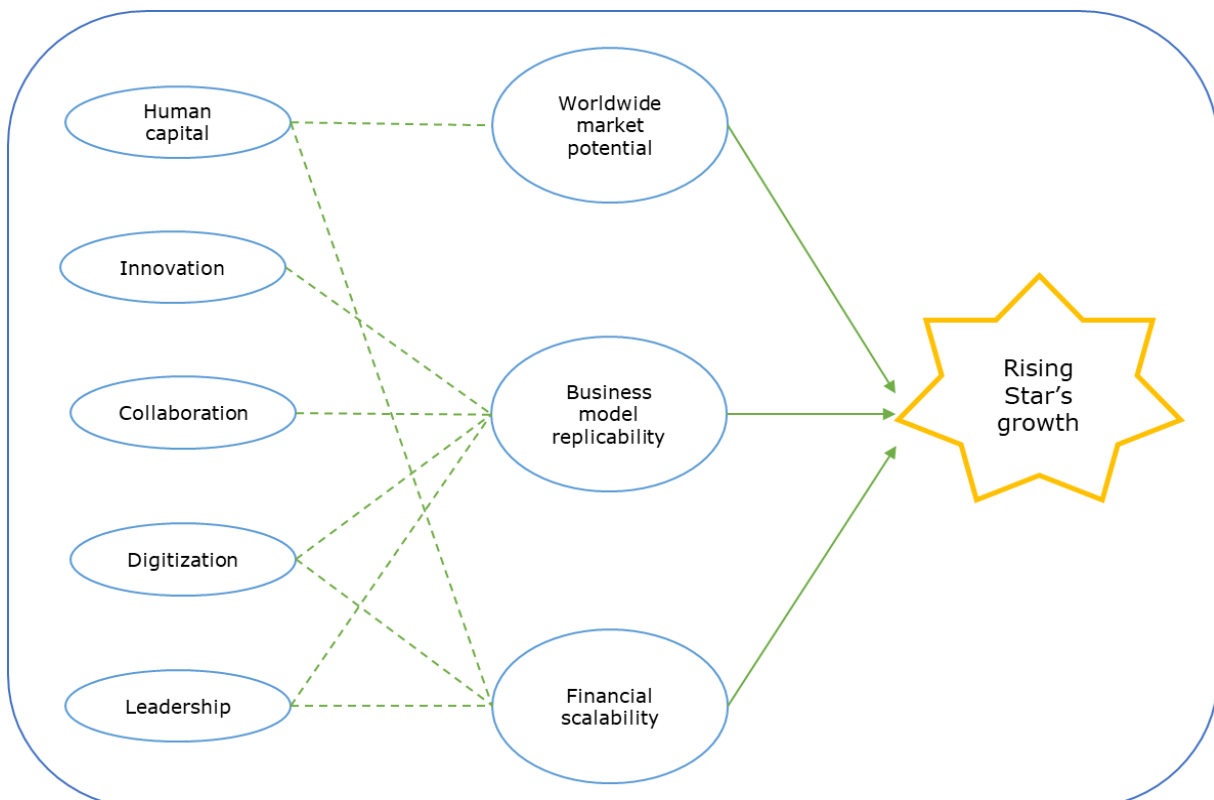


CONCLUSION

Our report has identified the factors that may drive the growth of the Rising Stars, an intriguing cohort of companies with high promises to grow but whose high-ambitious goals increase their risk profile. These companies invest significantly for growth, which increases their realized growth in employees and net added value, use more funding, and, as of five years after their participation, their EBITDA becomes positive and higher than their peers that do not participate in the Rising Star competition. However, because of the risk that comes together with high growth ambitions, they have lower survival rates than their non-participant peers.

Within this context, the growth of the Rising Stars is related to having worldwide market potential, business model replicability, and financial scalability. Delving deeper into the factors associated with such drivers, we found the ambitions of the entrepreneurial team represented by their target market are associated with their human capital. Concerning the replicability of their business model, it is associated with having intellectual property rights as a differentiation factor, creating partnerships between different stakeholders, having digital products or relying on digital resources and having a CEO and CTO or COO, who can help to coordinate and ensure all firm's key processes keep the same quality when the business model is replicated across markets. Likewise, financial scalability is related to having a CTO or COO who ensures optimal use of technologies and processes towards enhancing efficiency, digitization that enables a company to gain cost-efficiencies and human capital that helps to spot opportunities based on previous knowledge.

The following scheme summarizes the potential drivers of a Rising Star's growth.



FINAL THOUGHTS

The Rising Star Monitor gives us a yearly update about how founders and founding teams navigate on the path towards growth. The good news is that although we are in a deep health & economic crisis, this does not significantly impact the growth ambition of ventures. Nor does it impact the way founders remunerate themselves. Also, founders keep the majority of the equity of their companies.

The analysis around external funding, however, shows there is an opportunity for ventures to make more and better use of external funding. The research revealed that often ventures do not know well enough the different sources of funding, nor the consequences. The result is a lot external debt and subsidies. This means there is an opportunity for ventures to benefit more from external funding and there is a role for Vlerick and Deloitte to upgrade their knowledge and understanding of financing sources.



Sam Sluismans

Managing Partner Deloitte Accountancy

APPENDIX I: METHODOLOGY AND SAMPLE CHARACTERISTICS

METHODOLOGY

The input of analysis was based on the information of 332 Rising Star participants and 400 pitch decks received from Deloitte. Excluding ventures that were older than four years old in their year of participation and those without revenue in the immediate year before their participation, the sample for the analysis consisted of 298 companies.

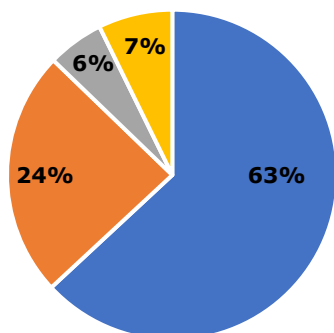
To compare the RS participants with non-participants, the first were matched with companies in Belfirst through propensity-score matching based on a combination of criteria, including the year of incorporation, 4-digit industry code, assets in the year of incorporation and location (province).

ABOUT THE RISING STARS

When participating in the Rising Star competition, ventures, on average:

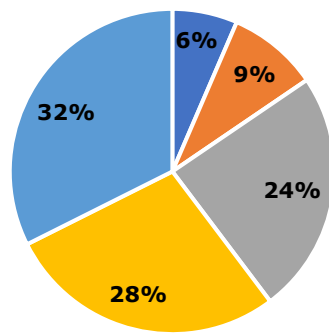
- Were 2.7 years old.
- Covered a wide variety of industries.
- Had 5.7 full-time employees.

NUMBER OF EMPLOYEES
 % respondents



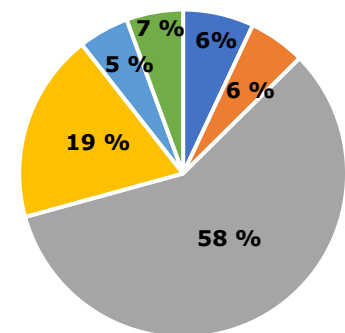
- = < 5 FTEs
- > 5 - 10 FTEs
- > 10 - 15 FTEs
- > 15 FTEs

ASSETS
 % respondents



- = < 100,000 EUR
- > 100,000 - 200,000 EUR
- > 200,000 - 500,000 EUR
- > 500,000 - 1,000,000 EUR
- > 1,000,000 EUR

INDUSTRIES
 % respondents



- Manufacturing
- Wholesale and retail trade
- ICT
- Professional, scientific, and technical activities
- Administrative and support service activities
- Other











DO YOU KNOW THE SCALE-UP MASTERCLASS?

In 2014, the Vlerick Scale-up Centre was set up to create a community of scale-up entrepreneurs and to help them with the key challenges they face in their path to rapid growth. In 2018, Vlerick created the Scale-Up Masterclass, **a powerful programme to help companies make the most out of their scale-up potential.**

As such, the programme offers a great opportunity to meet, learn from and with like-minded entrepreneurs. Take a look below at who has already participated and follow in their footsteps – join our community!

For more information, please email bo.depourque@vlerick.com or check the website:



  <p>Jochen Callens Co-founder Jobtoolz</p>	<p><i>"The Scale-up Masterclass gave me concrete and practically applicable insights to accelerate Jobtoolz's growth. Highly recommended!"</i></p>
  <p>Jan Dobbenie CEO at Dobco Medical</p>	<p><i>"I thought it was a good course, to-the-point, given by people with a lot of practical experience."</i></p>
  <p>Frederik De Witte Founder Fleetmaster</p>	<p><i>"The Scaleup Masterclass provided me with several hands-on insights that are of immediate use in our fast scaling company. Especially the concept of lesson material, provided by people that faced similar challenges in the trenches, makes it much more approachable than an old fashioned class setup."</i></p>
  <p>Jeroen Geldhof Board Member Equicity</p>	<p><i>"Learning online is really nice, you can do it at your own pace, at your own time. The human interaction when a bunch of founders get together, makes a difference too. So, I really like the combination of both."</i></p>
 <p>Jonas Deprez Founder Daltix</p>	<p><i>"As a scale-up, you are being stretched all the time. That's perfect about the Masterclass, because it gives you the knowledge to deal with each of those topics."</i></p>
 <p>Thomas Poelmans Founder Namé Recycling</p>	<p><i>"I received guidance, insights and experience from fellow entrepreneurs to tackle our challenges."</i></p>



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