"Can Success of Young Innovative Companies be Predicted?"

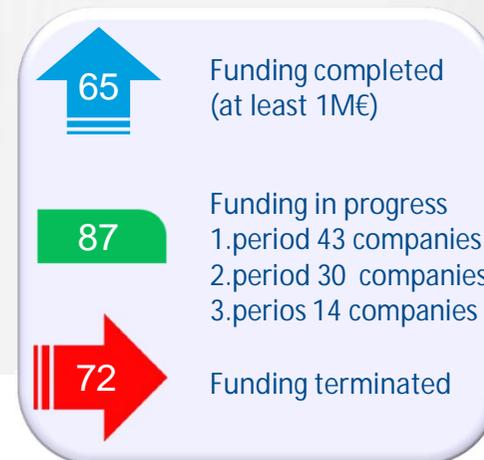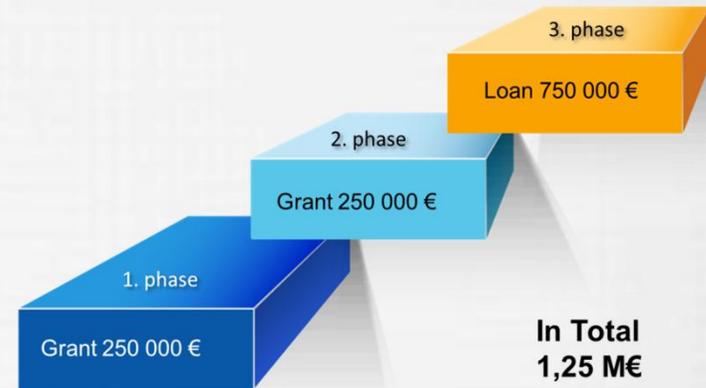## An analysis of the Tekes YIC - scheme

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Tekes YIC Program

YIC = Young innovative companies

- Max. 6 years old

- Yearly revenue less than 10M

- Previous two years, investment to R&D > 15 % of net revenue

3. phase
Loan 750 000 €

2. phase
Grant 250 000 €

1. phase
Grant 250 000 €

In Total
1,25 M€

65 — Funding completed (at least 1M€)

87 — Funding in progress
1.period 43 companies
2.period 30 companies
3.perios 14 companies

72 — Funding terminated

A venture capital panel evaluates the companies

- Before acceptance to the first phase of funding, the companies have been subjected to the evaluation of an external panel

- The external panel consists of 3-5 experts who represent either public or private organization specialized in growth company investment

- **The panel has evaluated the companies in 15 subcategories based on**

    1) Short formal company descriptions before hearing the company pitch

    2) The 10 minute pitch

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The panel ranks the company in the scale 1-5 in these categories

Innovation

- Customer needs and benefits
- Applicability, diversity
- Ability to protect the innovation

Markets

- Market potential
- Competitive situation
- Other opportunities to access the market

The Team

- Expertise and experience of the team
- Networking ability
- Board of directors and consultants
- Technical, process and production capabilities

Suitability for growth

- Growth and internationalization strategy
- Financing plan and implementation
- Opportunities to achieve profitable business
- Realism and quality of the business plan

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1) **What is the revenue growth distribution of YIC – companies like?**

2) **Can VC panel predict who will be a super performer before the success occurs?**

3) **If yes, what are the indicators of success?**

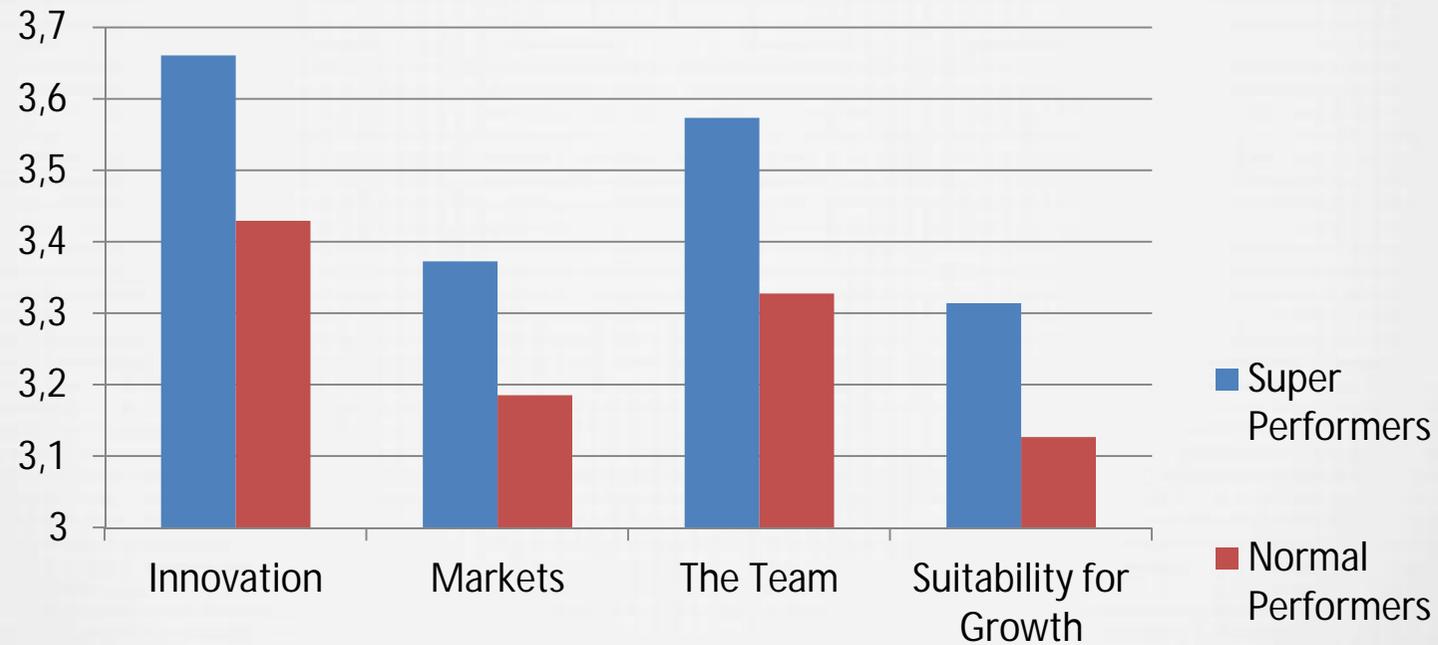# Super performers and normal performers follow different growth distributions!

- The normal performers fall into a Gaussian function centered at zero growth
- The super performers fall into a "long tail" distribution function as single occurences with high total growth values
- The Gaselles are responsible for 90 % of the total portfolio growth

Normal distribution

Super performers "tail" begins here

Total growth during the measurement period (%)
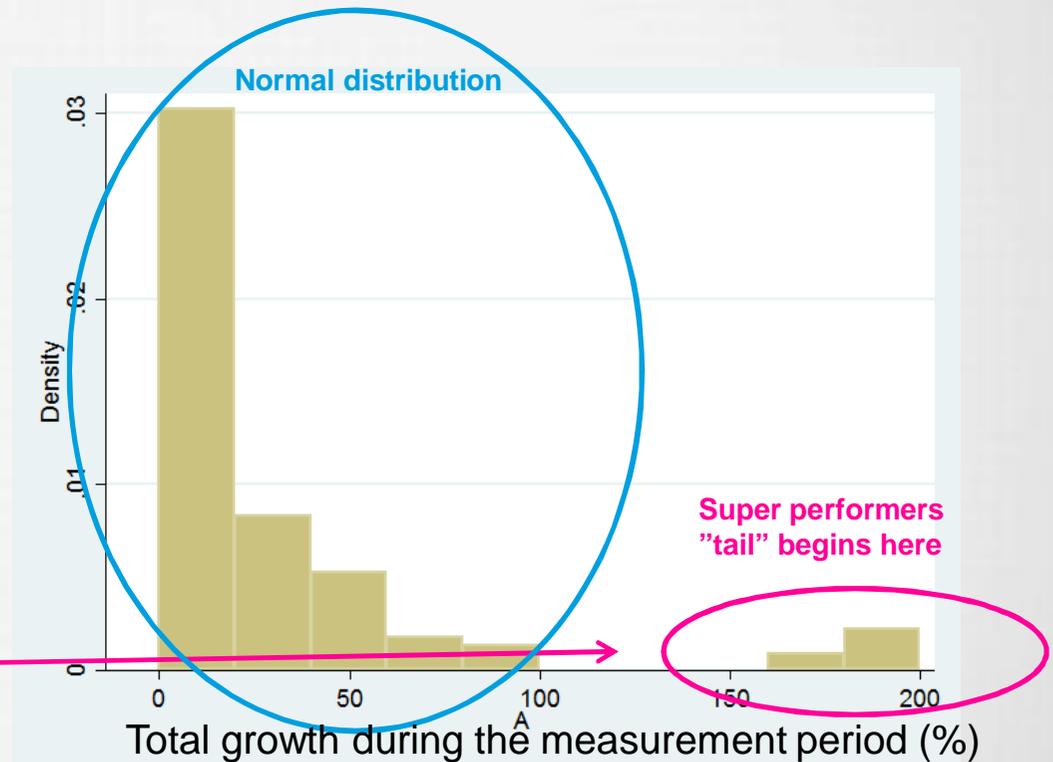
	Groups			
	Normal Performers		Super Performers	
Amount	81		33	
	Average	Median	Average	Median
Revenue Growth (%)	57,44	-35,45	2202,25	520

External Panel can clearly distinguish the super performers in all four main categories

Average preliminary ranking by the panel (scale 1-5)

Legend:
- Super Performers (blue)
- Normal Performers (red)

Categories: Innovation, Markets, The Team, Suitability for Growth

Y-axis scale: 3, 3,1, 3,2, 3,3, 3,4, 3,5, 3,6, 3,7

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The score distribution functions confirm the result

Compare the scores 3 and 4!

Density

Average of the Panel Preliminary Assessment Scores

Super Performers   Regular Companies

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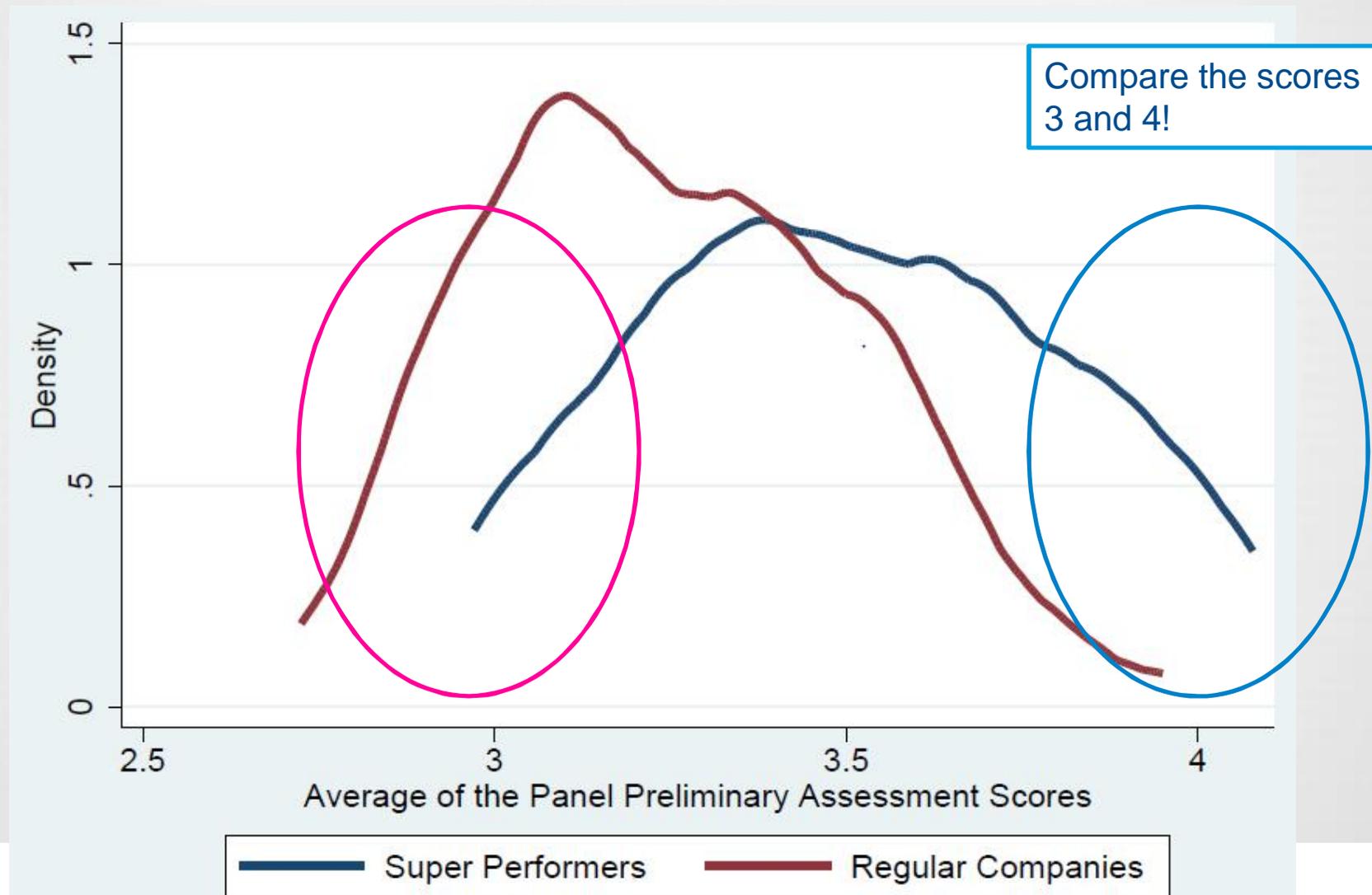
How much does a one-point increase of the panel score* increase the probability for being a Super Performer?

Result: As the Preliminary Panel Assessment score increases by one point, e.g. 3->4 the company is 60% more likely to be a Super Performer!

	Average Marginal Effect, %-pts.	Std. Dev	z	P>|z|	95% Conf. Interval	
Panel Preliminary Assessment	59,8	12,4	4,83	0	35,6	84,2
Panel Assessment after the pitch	34,9	9,4	3,7	0	16,4	53,3

*Average marginal effect: holds in small changes near the average but the distributions show that the effect is even bigger away from the mean

Parameters from best to worst

These can be assessed the best?

	Super performers average rank	Normal performers average	Difference of rank averages	Super performers median rank	Normal performers median	Difference of rank medians
1. Expertise and experience of the team	3.621667	3.179722	0.441945	3.5	3.2	0.3
2. Ability to protect the innovation	3.093889	2.653889	0.44	3.267	2.775	0.492
3. Techical, production, and process capabilities	3.898333	3.506944	0.391389	4	3.5	0.5
4. Networking ability	3.616667	3.246667	0.37	3.6	3.2	0.4
5. Quality and realism of the business plan	3.380556	3.035	0.345556	3.4	3	0.4
6. Competitive situation	3.031111	2.7375	0.293611	3	2.683	0.317
7. Customer needs and benefits	3.876111	3.586389	0.289722	4	3.6	0.4
8. Growth and internalisation strategy	3.515	3.236111	0.278889	3.6	3.2	0.4
9. Financial plan and implementation	3.226667	2.988333	0.238334	3.3	3	0.3
10. Applicability, diversity	3.394444	3.161389	0.233055	3.4	3.1	0.3
11. Opportunities to achieve profitable business	3.336667	3.121111	0.215556	3.4	3.2	0.2
12. Other opportunities to access the market	3.232222	3.080833	0.151389	3.275	3.2	0.075
13. Market potential	3.835	3.720278	0.114722	3.8	3.8	0
14. Board of directors and consultants	3.74	3.656111	0.083889	3.8	3.8	0

And these the worst? The results are a combination of what is can be assessed and what is a predictive charateristics of a company success

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Executive Summary

- **We found that an external evaluation panel is able to distinguish super performers* from normal performers prior acceptance to the YIC – funding scheme**

  - Factors that correlate with success and can be ranked at the application stage are:

    - The team

    - Market potential

    - Suitability for growth

    - Innovation potential

  - In the scale of 1-5, when the averge score given by the external panel increases from 3 to 4, probablity of a participant company being a super performer is increased by as much as 60 %!

- Super performers are defined as companies whose average annual revenue growth is at least 30 % in an average period of three years
- Disclaimer: the NIY-scheme is relatively new and thus our sample is relatively small (114 companies) and we have company economic performance data only for 2-5 years

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Impact assessment by Autio et Al. shows that we are not only good at picking winners but the scheme itself has a large effect

- Using propensity score matching technique and comparing companies who received YIC funding to those who did not, Autio et Al. found that the scheme itself has doubled the sales of the companies involved, beyond the selection effect
- " The initiative had delivered a strong impact also on value-for-money basis, in addition to producing the first robust evidence on the growth impact delivered by a high-growth entrepreneurship initiative"
- Retaining winners: can policy boost high-growth entrepreneurship? http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2609502

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