Katia Giusepponi
Ernesto Tavoletti
Virginia Tosi

TOP STARTUPS WORLDWIDE

An investigation on entrepreneurial and organisational profiles

FrancoAngeli
OPEN ACCESS

 ISBN 9788891795571

Copyright © 2019 by FrancoAngeli s.r.l., Milano, Italy. ISBN 9788891795571

Katia Giusepponi
Ernesto Tavoletti
Virginia Tosi

TOP STARTUPS WORLDWIDE

An investigation on entrepreneurial and organisational profiles

FrancoAngeli
OPEN ACCESS

 ISBN 9788891795571

Open access funded by the University of Macerata – Department of Education, Cultural Heritage and Tourism.

Copyright © 2019 by FrancoAngeli s.r.l., Milano, Italy. ISBN 9788891795571

Contents

 ISBN 9788891795571

Introduction

Research into entrepreneurial factors of success and failure continuously improves through observing and studying new players in the business world.

This work focuses on top startups in the world and seeks to understand their current habitat, what they excel in, and also the challenges awaiting them.

Based on technology and knowledge, the high-value startups analysed here capture and facilitate global tendencies, leveraging interconnectivity and sharing.

They create strengths from the worldwide ecosystems in which they are immersed and which give them easier access to resources but the organisational profiles often represent contexts of weakness and fundamental challenge.

The main contribution of this work is to show the positive effects of *plurality*. In particular this concerns the number of founders, attitudes to participation, and a sense of belonging and cooperation; and from an external perspective, factors such as the attitude towards collaboration and the ability to make use of fertile ecosystems, or to understand and interpret global trends.

Moreover, an effort to link strategic, organizational and social profiles has been made, creating a model for understanding entrepreneurship which will also be useful for comparing future evidence.

 ISBN 9788891795571

1. Theoretical framework

Katia Giusepponi and Ernesto Tavoletti

A startup or new venture is generally understood as a nascent enterprise with a relatively innovative focus but often lacking a proper business model. Understanding the critical success factors of growth is relevant in order to provide recommendations and guidelines to new entrepreneurs.

The literature on the critical success factors for their growth is extensive (Plummer et al. 2016) and access to financial capital is one of the main factors (Gilbert et al. 2006). As capital investors look for "signals" that demonstrate the quality of a new venture's unobservable resources and capabilities, the following signals play the role of second order critical success factors: 1) "third-party signalling", such as a certifying institution, a respected intermediary or any other prestigious third party that the investors assume to be better informed than them about the startup potential (Pollock & Gulati 2007); 2) affiliation to a prominent venture development organization (VDO) (Chen et al. 2008) that will provide networking and help it to succeed; 3) firm's human and social capital (Beckman et al. 2007); 4) managerial experience of the founding team (Stuart & Abetti 1990).

Plummer et al. (2016) provide evidence that the managerial experience of the founder will increase the probability a new venture receives external capital only when the new venture also has a VDO affiliation. Founding team's educational heterogeneity and prior founding experience have a positive and significant effect on the likelihood of a firm's creating breakthrough innovation but the relationship depends on the firm's stage of life (Tzabbar & Margolis 2017).

Rasmussen et al. (2012) investigate number and mindset of founders, growth, and networks in five categories of Danish international new ventures and show that the more international the typology of venture, the higher the percentage of firms with more than one founder: 36% of the born local firms; 45% of the born international sourcers; 66% of the born international sellers; 59% of the born European firms; 68% of the born global firms.

A recent and comprehensive systematic literature review on the critical success factors of startups (Santisteban & Mauricio 2017) identify 16 relevant articles about the "experience in the industry of the founding team", 13 about "previous experience startup of the founding team", 13 about the number of founders, 12 about the "experience in management of the entrepreneur", 11 about the "academic formation of the founding team", 6 about "Government support", 4 about "Technological/business capabilities of the founding team", 2 about "Leadership of the entrepreneur", 2 about "Initial motivation of the entrepreneur" and just 1 about "gender of the entrepreneur" and other issues. The 13 articles about the number of founders reveal what follows.

Starting from the observation that the survival rate after five years of new technology ventures (NTVs) in the United States is just 21.9%, Song et al. (2007) conducted a meta-analysis to analyze the findings of 31 studies and identified the 24 most widely researched success factors for NTVs; after correcting for artifacts and sample size effects, they found that among the 24 possible success factors identified in the literature, 8 are homogeneous significant success factors for NTVs (they have a positive significant effect on venture performance): 1) supply chain integration; 2) market scope; 3) firm age; 4) size of founding team; 5) financial resources; 6) founders' marketing experience; 7) founders' industry experience; and 8) existence of patent protection. The remaining 11 success factors were not significant or heterogeneous and include: founders' research and development (R&D) experience; founders' experience with startups; environmental dynamism; environmental heterogeneity; and competition intensity. The study does not identify any optimal size of the founding team but assesses that size has a positive effect on venture performance.

Ganotakis (2012), for the case of UK new technology based firms (NTBFs), claims that individual entrepreneurs or entrepreneurial teams with high levels of formal business education, commercial, managerial, or same sector experience create better performing NTBFs, and the performance of a NTBF can improve through the combination of heterogeneous but complementary skills, including, for example, technical education and commercial experience or managerial technical and managerial commercial experience. Therefore founding team size improves performance when it provides complementary variety (Ganotakis 2012).

Baptista et al. 2007 examine whether founders' backgrounds influence new firm survival in the early years after start-up and find that specific human capital more frequently found in spin-off founders plays a key role in enhancing survival chances, while more general forms of human capital may help inexperienced entrepreneurs overcome the barrier posed by the critical early years after start-up. In that context, they consider the impact of the existence of at least one partner in ownership: the result is that the presence of a partner increases the chances of survival.

Colombo et al. (2004) consider a sample of 391 young Italian firms operating in high-tech industries in both manufacturing and services. A result is that the specific component of human capital associated with industry-specific professional knowledge and managerial and entrepreneurial experiences is found to have a greater positive impact on initial firm size than the generic component, proxied by education and general working experience.

Gottschalk & Niefert (2013) focus on gender differences in business success of German start-up firms and their point of departure is that in many studies women-owned firms underperform when comparing performance indicators at an aggregate level. They analyze whether gender differences in observable characteristics like education, experience, team size, entrepreneurial motivation and industry choice explain differences in performance and how large the impact is. The result is that female-founded firms perform worse for all indicators. At the same time, there are significant gender differences in many of the characteristics observed: compared to male entrepreneurs, female entrepreneurs have a lower level of formal education, less professional experience, are part of smaller start-up teams, are

more often driven by necessity, and are overrepresented in the retail and service industries and in lower-tech industries in general. Therefore, their results support that smaller start-up firms tend to underperform (Gottschalk & Niefert 2013) and, having women-owned firms smaller start-up teams, they underperform as a consequence. This is in line with previous research that reveal that size does matter for growth (Becchetti & Trovato 2002).

Analyzing 44 venture capital backed companies over a period of up to 12 years, Strehle, Katzy, & Davila (2010) confirm that partnering is positively associated to growth.Cannone & Ughetto (2014), in the context of startups internationalization, find that the diversity of team competences and organizational flexibility of a firm, have a significant impact on a born global's degree of born-globalness, although it is not a fundamental precondition for early internationalization.

On the opposite side, the findings of Dautzenberg & Reger (2009), based on a sample of 1,834 new German firms in high-technology sectors, disclose that team heterogeneity in terms of gender, size and educational level has little impact on firm success. However, the field of entrepreneurship involves both *opportunities* and *individuals* (Shane and Venkatraman 2000).

Numerous studies have tried to identify the factors in startup success and failure. These elements are unquestionably numerous, varied and interconnected; and include:

- founder characteristics and abilities (Brockhaus 1980; Sexton and Upton 1985; Chandler and Jansen 1992; Begley 1995; Gatewood et al. 1995; Reuber and Fisher 1999; Baum and Locke 2004; Lazear 2004; Rauch and Frese 2007; Zhao et al. 2009);
- social and human capital (Cooper et al. 1994; Peña 2002; Davidsson and Honig 2003; Bosma et al. 2004; Witt 2004; Brixy and Hessels 2010; Unger et al. 2011);
- venture capital (Wasserman 2008; Davila et al. 2003; Bertoni et al. 2011; Nanda and Rhodes-Kropf 2013);
- business model “as a mediating construct between technology and economic value” (Chesbrough and Rosenbloom 2002; McGrath 2010);
- market opportunities (Venkataraman 1997; Shepherd and Lévesque 2002); and

– macroeconomic and socio-cultural environment (Tiessen 1997; Hopp and Stephan 2012; Mthanti and Ojah 2017).

These factors need to be combined synergistically in order to launch a business which does not fail at the first experiment but which can develop and consolidate (Song et al. 2008).

Certainly, the characteristics of an entrepreneur, his / her strategic vision, leadership and ability to understand the situation all play a fundamental role in enabling and managing a virtuous mix of these elements, that is an "entrepreneurial success formula".

In other words, it is true that in a startup, as in any organisation, the life cycle is deeply affected by both internal and external factors, but the entrepreneurial characteristics, skills and, in particular learning ability, are central (Carter et al. 1996; Gartner et al. 1999; Minniti and Bygrave 2001; Cope 2003; Haber and Reichel 2007; Rauch and Frese 2007; Marmer et al. 2011; Ries 2011; Åstebro et al. 2014).

The keys on which our study is focused and which form the major part of our contribution are:

– the entrepreneurial attitude to divergent interpretations, useful for finding concrete solutions to important widespread needs, and
– the ability to understand and enter people's daily lives at a global level, to come up with diverse, seemingly-simple solutions, while continuously learning and adapting.

Disruptive innovation – a phenomenon which breaks existing norms and frameworks by introducing new habits and a new equilibrium – uses technology as a vital tool (Schumpeter 1934; Christensen 1997; Christensen et al. 2006, 2015, 2016; Wan *et al.* 2015; Hamari et al. 2016), but it is the ability to observe, understand and compare that leads to useful solutions for people and to efficient business models.

Competitiveness, effective strategic direction, market incisiveness and presence in an opportunity-rich ecosystem are traits which characterise a successful startup. Instead, weaknesses can be seen in the

organisational perspective which however represent an area of fundamental challenge (Duchesneau and Gartner 1990; Brush et al. 2001; Ensley et al. 2006).

Consequently, a startup emerges as a team creation, which perhaps attains its critical maturity factor when it is aware of the importance of plurality and its ethical value.

2. Methodology

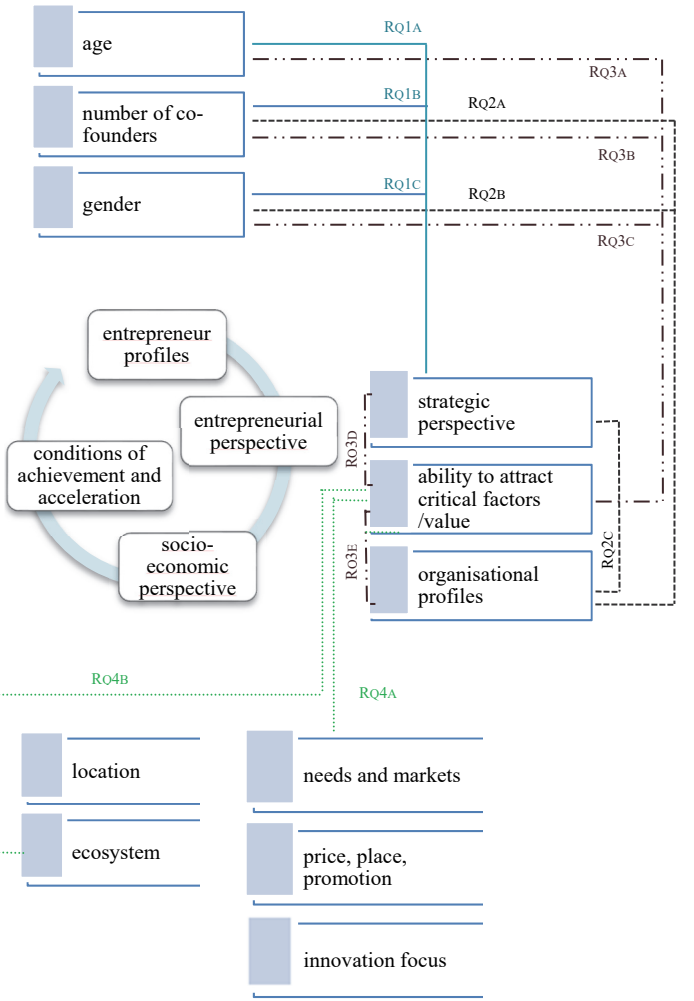
Katia Giusepponi and Virginia Tosi

This work aims to understand and interpret entrepreneurship and success factors of high-value startups worldwide on the basis of the theoretical framework illustrated below. This work aims to understand and interpret entrepreneurship and success factors of high-value startups worldwide on the basis of the theoretical framework illustrated above. In order to allow this understanding, the work analyses various aspects of high-value startups, particularly focusing on:

- attitudes to entrepreneurship, specifically relating to the capacities for:
  - strategic orientation;
  - context interpretation;
  - attracting critical resources (talent, knowledge, technologies, financing);
  - employee engagement;
  - and leadership;
- markets in which these startups operate, their targets and the needs they meet and sometimes even create.

As seen above, there are extensive and in-depth studies on enterprise creation and launch. Research into entrepreneurial factors of success and failure continuously improves through observing and studying new players in the business world.

Table 1 – Investigated connections



Source: own analysis and elaboration.

The work focuses on top startups in the world: that is, enterprises which are often the catalysts for new trends and accelerators of progress. In particular, this work seeks to understand their current habitat, what they excel in, and also the challenges awaiting them. The main contribution emerging from these research findings concerns the positive effects arising from plurality, understood as internal debate, openness to participation and networking.

Moreover, an effort to link strategic, organizational and social profiles has been made, creating a model for understanding entrepreneurship which will also be useful for comparing future evidence.

The startups considered are listed in the Dow Jones Venture Source and The Wall Street Journal "venture-backed private companies valued at $1 billion or more". This list is available at *The Billion Dollar Startup Club* (Austin, Canipe and Slobin) and was accessed for this research in May 2017. As mentioned in this source, the list only concerns privately held companies that have raised funding in the past four years and with at least one venture-capital firm among the investors.

In particular this research considers the 109 startups valued at 1.1 billion dollars or more (see appendix 1). Information on these businesses was acquired online based on the checklist included in appendix 2. Macro items studied are shown in table 1.

The analysis involves not only several objective elements – such as number, age and gender of founders, number of rounds of funding, latest evaluation, valuation to funding ratio – but also evaluation subjectively but not arbitrarily attributed to relevant profiles – such as effectiveness of vision and mission, level of the shared vision, sense of belonging and level of internal cooperation. A 1 to 5 rating scale was used, with 0 = highly negative, 1 = widely negative, 2 = slightly negative, 3 = slightly positive, 4 = widely positive and 5 = highly positive. Furthermore, on a subjective basis, opposite elements of specific factors were compared, with the total score of 5 split between them. These factors are: transformational versus transactional leadership; participative versus authoritative decision-making; level of external collaboration versus competitiveness.

Data was collected and profiles evaluated based on online information and resources: primarily, the websites of companies, and subsequently the Dow Jones Venture Source and The Wall Street Journal,

LinkedIn, Glassdoor, Crunchbase Pro, Bloomberg, AngelList, Quora (to name just a few).

After the theoretical framework and these methodology notes, the third section of the work concerns the presentation and discussion on the results of the investigation (organised in sub-sections: entrepreneur profiles and strategic perspective; organisational profiles; attraction of critical factors and value; markets and ecosystems); and the fourth section contains the conclusions.

3. Results and discussion

Katia Giusepponi

3.1. Entrepreneur profiles and strategic perspective

Founders of high-value startups in the world are often solo (just one founder is the norm) and male (the mean of women co-founders is just 0.10, the norm is 0). The average age at startup foundation is 32.78, the median 31.5; the standard deviation, equal to 8.06, allows us to define the relevant range from 24.72 to 40.84 years (table 2).

High-value startups in the world show, on average, effective strategic statements. Within the studied cases, a significant focus on the vision (average effectiveness 3.36, mode 5) and, in particular, on the mission (average effectiveness 3.93, mode 5; see table 3) can be observed.

Table 2 – Entrepreneur profiles

	Company founded in	Age (2017): average	Age (at foundation): average	Number of co-founders	Number of men	Number of women
Valid elements		103	103	107	107	107
Not available		6	6	2	2	2
Total cases		109	109	109	109	109
MEAN	2008	41.3	32.78	2.19	2.08	0.10
MEDIAN	2009	40	31,5	2	2	0
MODE	2009	33	41	1	1	0
STANDARD DEVIATION σ	4.28	7.94	8.06	1.37	1.35	0.33
MIN	1995	28	19	1	0	0
MAX	2015	68	61	9	9	2
SUM				234	223	11
				100.00%	95.30%	4.70%

Table 3 – Strategic perspective

	context interpretation and vision			strategic orientation and mission	
	evidence y=1; n=0	level of shared vision (1-5)*	effectiveness (1-5)*	evidence y=1; n=0	effectiveness (1-5)*
Valid elements	*109*	*104*	*104*	*109*	*104*
Not available	*0*	*5*	*5*	*0*	*5*
Total cases	*109*	*109*	*109*	*109*	*109*
MEAN		3.14	3.39		3.93
MEDIAN	1	3	4	1	4
MODE	1	3	5	1	5
STANDARD DEVIATION σ		1.31	1.60		0.99
MIN	0	1	0	0	1
MAX	1	5	5	1	5

(*): 0 = highly negative, 1 = widely negative, 2 = slightly negative, 3 = slightly positive, 4= widely positive and 5 = highly positive.

Sources for the tables 2-13 and the graphs 1-4: own analysis, evaluation and elaboration based on online information and resources (primarily, the websites of companies, and subsequently the Dow Jones Venture Source and The Wall Street Journal, LinkedIn, Glassdoor, Crunchbase Pro, Bloomberg, AngelList, Quora).

Furthermore, specific questions were defined regarding connections between entrepreneur profiles and strategic perspective (in particular, effectiveness of vision and mission, and level of shared vision):

Rq1a. Does a relevant correlation exist between the average age of co-founders and strategic perspective (effectiveness of vision and mission and level of shared *vision)?*

Rq1b. Does a relevant correlation exist between the number of co-founders and strategic perspective?

Rq1c. Does a relevant correlation exist between the number of women co-founders and strategic perspective?

First of all, gender appears as relevant not only in order to promote the effectiveness of strategic statements, but also in sharing vision. In fact, on the basis of the Pearson coefficient, a positive correlation was noticed between the number of women co-founders and:

– the effectiveness of vision and mission (both with ρ equal to 0.20);
– the level of shared vision (ρ equal to 0.22).

Table 4 – Pearson correlation coefficient (ρ)

	average age at startup foundation	number of co-founders	number of women co-founders	level of shared vision	effectiveness of vision	effectiveness of mission	value	valuation to funding	organizational culture (sense of belonging and level of cooperation)	responsibilities (vs skills)	transformational (vs transactional) leadership	participative (vs authoritative) decision-making	level of collaboration vs competitiveness
average age at startup foundation	**1**	-0.06	0.03	0.01	-0.02	0.09	-0.05	-0.04	0	-0.06	0	0.05	-0.06
number of co-founders	-0.06	**1**	0.18*	0.18*	0.06	-0.01	0.21**	0.13	0.25***	-0.09	-0.13	0.12	0.13
number of women co-founders	0.03	0.18*	**1**	0.22**	0.20**	0.20**	-0.06	0.01	0.15	0.1	0.02	-0.06	-0.01
level of shared vision	0.01	0.18*	0.22**	**1**	0.70***	0.54***	0.11	0.02	0.37***	0.14	-0.16*	0.18*	-0.16*
effectiveness of vision	-0.02	0.06	0.20**	0.70***	**1**	0.46***	-0.01	-0.11	0.19*	0	-0.24***	-0.01	-0.26***
effectiveness of mission	0.09	-0.01	0.20**	0.54***	0.46***	**1**	-0.1	-0.08	0.16*	0	-0.05	0.01	-0.08
value	-0.05	0.21**	-0.06	0.11	-0.01	-0.1	**1**	0.30***	0.07	-0.13	-0.04	0.1	0.17*
valuation to funding	-0.04	0.13	0.01	0.02	-0.11	-0.08	0.30***	**1**	0.17*	-0.02	0.20**	0.28**	0.07
organisational culture (sense of belonging and level of cooperation)	0	0.25***	0.15	0.37***	0.19*	0.16*	0.07	0.17*	**1**	-0.02	0.36***	0.59***	0.28***
responsibilities (vs skills)	-0.06	-0.09	0.1	0.14	0	0	-0.13	-0.02	-0.02	**1**	0.03	0.03	-0.1
transformational (vs transactional) leadership	0	-0.13	0.02	-0.16*	-0.24***	-0.05	-0.04	0.20**	0.36***	0.03	**1**	0.61***	0.44***
participative (vs authoritative) decision-making	0.05	0.12	-0.06	0.18*	-0.01	0.01	0.1	0.28**	0.59***	0.03	0.61***	**1**	0.34***
level of external collaboration vs competitiveness	-0.06	0.13	-0.01	-0.16*	-0.26***	-0.08	0.17*	0.07	0.28***	-0.1	0.44***	0.34***	**1**

Significance: * P<0.10; ** P<0.05; *** P<0.01

Sources for the tables 2-13 and the graphs 1-4: own analysis, evaluation and elaboration based on online information and resources (primarily, the websites of companies, and subsequently the Dow Jones Venture Source and The Wall Street Journal, LinkedIn, Glassdoor, Crunchbase Pro, Bloomberg, AngelList, Quora).

Nevertheless, only 11 female co-founders emerge (out of 234). Just one is a solo entrepreneur; there is in effect a positive, moderate link between the number of women and the total number of co-founders (ρ= 0.18).

The findings also show a positive relationship between the number of co-founders and the level of shared vision (ρ= 0.18). It must be

observed that relationship is particularly significant in Europe (ρ= 0.40) and Asia (ρ= 0.33), while almost negligible in the USA (ρ= 0.08) where, however, the level of shared vision is higher than the general average (3.27 versus 3.14).

Having more than one founder appears as a favourable factor also at the level of organizational culture (see section 3.2) and value (see section 3.3).

To summarise, factors such as gender and plurality, which influence internal debate and interaction, reveal a positive relationship with the level of shared vision. Gender is also linked to the effectiveness of vision and mission.

Instead, no significant correlation emerges with respect to the age of founders (table 4).

3.2. Organisational profiles

High-value startups worldwide do not represent, on average, excellent organisational profiles. In particular, findings show key indicators with a negative or not fully positive value (table 5), regarding:

- a sense of belonging and level of internal cooperation, evaluated within this study as slightly positive (on average 2.88 out of 5);
- responsibility elements of the leadership model which emerge as weak in comparison with skills elements (2.04 vs 2.96);
- transformational leadership which is clearly negligible in comparison with transactional leadership (1.87 vs 3.13);
- participative decision-making, which is marginal compared to authoritative decision-making (1.82 vs 3.18);
- attitude to external collaboration which is almost ignored compared to competitiveness (1.18 vs 3.82).

Table 5 – Organisational profiles

	Organizational culture		
	Sense of belonging (1-5)*	Level of cooperation (1-5)*	Mean
Valid elements	102	102	102
Not available	7	7	7
Total cases	109	109	109
MEAN	2.89	2.87	**2.88**
MEDIAN	3	3	3
MODE	3	3	2,5
STANDARD DEVIATION σ	1.10	0.94	0,92
MIN	1	1	1
MAX	5	5	5

	Responsibilities vs skills, total 5		Transformational vs transactional leadership, total 5	
	Responsibilities	Skills	Transformational leadership	Transactional leadership
Valid elements	103	103	103	103
Not available	6	6	6	6
Total cases	109	109	109	109
MEAN	2.04	2.96	1.87	3.13
MEDIAN	2	3	2	3
MODE	2	3	2	3
STANDARD DEVIATION σ	0.68	0.68	1.09	1.09
MIN	1	1	0	0.5
MAX	4	4	4.5	5

	Employee engagement: participative vs authoritative decision-making, total 5		Relationship model: level of collaboration vs competitiveness, total 5	
	Participative	Authoritative	Collaboration	Competitiveness
Valid elements	103	103	106	106
Not available	6	6	3	3
Total cases	109	109	109	109
MEAN	1.82	3.18	1.18	3.82
MEDIAN	1.5	3.5	1	4
MODE	1	4	1	4
STANDARD DEVIATION σ	0.96	0.96	0.66	0.66
MIN	0	1	0	1,5
MAX	4	5	3.5	5

(*): 0 = highly negative, 1 = widely negative, 2 = slightly negative, 3 = slightly positive, = widely positive and 5 = highly positive.

Sources for the tables 2-13 and the graphs 1-4: own analysis, evaluation and elaboration based on online information and resources (primarily, the websites of companies, and subsequently the Dow Jones Venture Source and The Wall Street Journal, LinkedIn, Glassdoor, Crunchbase Pro, Bloomberg, AngelList, Quora).

Research questions were defined regarding connections between organizational and entrepreneurial profiles on the one hand; and strategic perspective on the other:

Rq2a. Is there a relevant correlation between number of co-founders and organisational profiles (culture, responsibilities, transformational leadership, participative decision-making, external collaboration)?

Rq2b. Is there a relevant correlation between number of women co-founders and organisational profiles?

Rq2c. Is there a relevant correlation between strategic perspective and organisational profiles?

A positive connection emerges between the number of co-founders and organisational culture which is synthesised as the mean between sense of belonging and internal cooperation (ρ= 0.25, see table 4). It must be observed that this connection is significant in Asia (ρ= 0.35) and the USA (ρ= 0.22), while negligible in Europe (ρ= 0.06) where, however, the level of organisational culture is higher than the general average (3.21 versus 2.88).

Furthermore, the Pearson coefficient shows a positive correlation between the effectiveness of vision (ρ= 0.19) and mission (ρ= 0.16) and the organizational culture. Similarly, there is a positive correlation of the level of shared vision with the organisational culture (ρ= 0.37) and with participative decision-making (ρ= 0.18), but not with transformational leadership (negative ρ equal to -0.16) nor with attitude to external collaboration (ρ= -0.16).

A negative correlation emerges also between the effectiveness of vision and both transformational (versus transactional) leadership (ρ= -0.24) and level of collaboration versus competitiveness (ρ= -0.26).

To sum up, it can be seen that effective vision stating and sharing are coherent with a sense of belonging, internal cooperation and participative style, but at the same time opposite to a transformational organization and to forms of external collaboration or coo-petition. This would be not surprising in the initial phases of a business when the focus is mainly on competitiveness and market acquisition, but nonetheless it could entail a risk of using sharing and participation in a limited way and perhaps in name only. No other significant correlation emerges in this field, on the basis of the Pearson coefficient.

3.3. Attraction of critical factors and value

The enterprises studied stand out for the capacities to find and virtuously combine critical resources in terms of people, knowledge and, in particular, technology. More specifically, it can be noticed that the business model of analysed startups focus on *knowledge dissemination* and technological potential as tools to connect people worldwide and to contribute to a better life. The mean values of knowledge and technology (respectively 4.25 and 4.45) are remarkably high. Moreover the relatively low standard deviation values (respectively 0.90 and 0.74) show the c*ompactness of this synthesis indicator* (table 6).

Table 6 – Ability to attract critical factors /Value

	People (1-5)*	**Knowledge (1-5)***	**Technologies (1-5)***	**Financial resources: total equity funding** (billion dollars, when applicable)	**Financial resources: latest valuation** (billion dollars, when applicable)	**Valuation to funding**	**Rounds of funding (current)**
Valid elements	105	108	107	108	109	108	107
Not available	4	1	2	1	0	1	2
Total cases	109	109	109	109	109	109	109
MEAN	3.66	4.25	4.45	0.91	5.09	6.99	5.27
MEDIAN	4	5	5	0.37	2	5.34	5
MODE	5	5	5	1.4	1,1	12	5
STANDARD DEVIATION σ	1.14	0.90	0.74	1.87	9.68	6.56	2.36
MIN	1	2	2	0.10	1.1	0.73	1
MAX	5	5	5	14.1	68		12

(*): 0 = highly negative, 1 = widely negative, 2 = slightly negative, 3 = slightly positive, 4 = widely positive and 5 = highly positive.

The technological DNA is the core characteristic of the enterprises studied and is often presented and interpreted as a promise of a new life. Within website content, news, and interviews with founders, references to people are present but decisively less central.

Given the selection criteria of the sample discussed in this work, the businesses studied also stand out for their ability to attract financing.

The mean of the latest valuation is 5.09 billion dollars, but the variability is very high (σ= 9.68). Several enterprises in the sample rank at the lowest level (mode of 1.1 billion and median of 2 billion) but five startups are valued at more than 20 billion dollars. Within this group Uber is valued at 68 billion. The ratio of valuation to fund-

ing, in particular, shows the value leverage, that is, the ability to generate value. The average is 6.99 but the variability is high (σ=6.56; min 0.73; max 57.33).

In the face of such important *capacities to attract financing*, research questions arise concerning the connection of value with other analysis items (entrepreneur profiles, strategic perspective and organizational profiles):

Rq3a. Is there a relevant correlation between founder age and value (as a signifier of the ability to attract financial resources)?

Rq3b. Is there a relevant correlation between number of co-founders and value?

Rq3c. Is there a relevant correlation between number of women co-founders and value?

Rq3d. Is there a relevant correlation between strategic perspective and value?

Rq3e. Is there a relevant correlation between organisational profiles and value?

A positive correlation can be noticed between the latest valuation and:

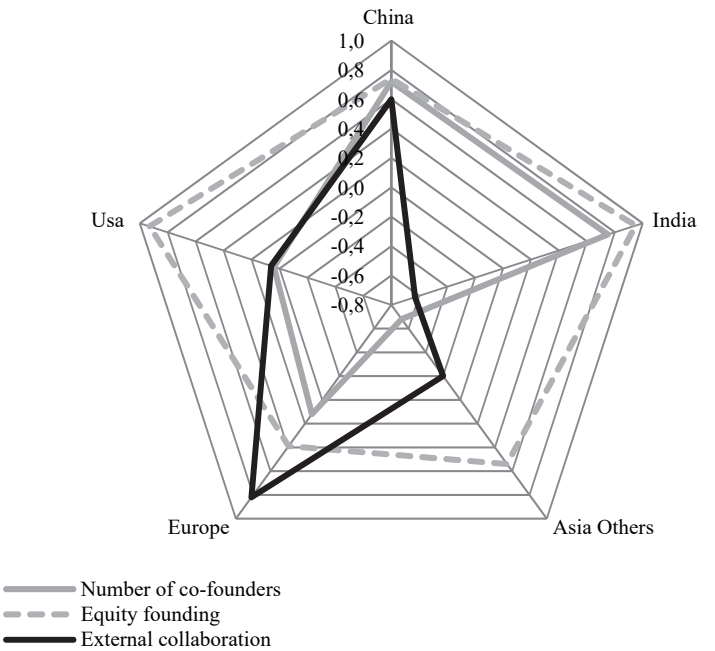
- number of co-founders (ρ= 0.21); furthermore, in this respect there are significant differences concerning geographical location; in fact while there is a strong positive correlation for Chinese (ρ= 0.72) and Indian (ρ= 0.75) startups, there is a negative correlation in other Asian areas (ρ= -0.68) and there is no correlation within startups in the USA (ρ= 0.04);
- level of collaboration (moderate, ρ= 0,17) very positively significant for Europe (0.82) and China (0.60) and but not for India (ρ= -0.63) and other Asian areas (ρ= -0.20), nor for the USA (0.06);
- total equity funding (obviously very strong; ρ= 0.83) but with significant differences within geographical areas (China 0.74; India 0.95; Asia others 0.54; Europe 0.39 and USA 0.93); these differences express a more or less strict link which startups have with financial markets (table 7 and graph 1).

Contrariwise, no significant correlation emerges between value and: founder age, number of women co-founders, effectiveness of strategic statements, organisational profiles apart from external collaboration.

Table 7 – Pearson correlation coefficient between value and other items

	General (all studied high-value startups)	**China**	**India**	**Asia Others°**	**Europe**	**USA**
Pearson coefficient value-number of co-founders	0.21	0.72	0.75	-0.68	0.12	0.04
Pearson coefficient value-external collaboration	0.17	0.60	-0.63	-0.20	0.82	0.06
Pearson value-equity funding	0.83	0.74	0.95	0.54	0.39	0.93

° Israel, Singapore, South Korea



Graph 1 – Pearson correlation coefficient between value and other items

Sources for the tables 2-13 and the graphs 1-4: own analysis, evaluation and elaboration based on online information and resources (primarily, the websites of companies, and subsequently the Dow Jones Venture Source and The Wall Street Journal, LinkedIn, Glassdoor, Crunchbase Pro, Bloomberg, AngelList, Quora).

It is also interesting to split at a territorial level the significant correlations between valuation to funding (attraction lever for investments) and some other factors (table 8 and graph 2). From this, the following points can be observed:

– a strong correlation between valuation to funding and organizational culture in China and Europe;
– a relevant correlation between valuation to funding and transformational leadership in Europe and the USA (but the opposite in India);
– a relevant correlation between valuation to funding and participative decision-making in China, Europe and the USA (but the opposite in India).

To sum up, the attraction lever for investments is sensitive to the organizational elements mentioned above, particularly in Europe, then in China and the USA. Instead, Indian high-value startups show opposite connections: between the attraction lever and both transactional leadership and authoritative decision-making, while other Asian high-value startups (not Chinese or Indian) do not show any significant correlation in this sphere.

The correlation between the valuation to funding ratio and equity is basically negative and shows an attraction lever for investments which is stronger in the initial phases of the business and weaker in the following phases. This is coherent with the basically negative connection between the same ratio and the number of funding rounds. However, this connection is significant for India, Asia Others and Europe but not for China or for the USA (table 8).

On the basis of the Pearson coefficient, organisational profiles are not correlated with value (interpreted here as *latest valuation)*, while they are significantly correlated with the *valuation to funding* as attraction lever for capital.

However, it must be observed that this territorial analysis can provide only some initial elements which are useful for planning further, more extensive studies, since the 109 high-value startups are unevenly spread over geographical areas, concentrated in the USA (62% of elements) but much less present in other countries.

Table 8 – Pearson correlation coefficient between valuation to funding and other items

	General (all studied high-value startups)	**China**	**India**	**Asia Others°**	**Europe**	**USA**
Value	0.30	0.56	-0.27	-0.25	0.36	0.21
Equity	-0.10	-0.10	-0.51	-0.78	-0.56	-0.08
Number of rounds	-0.02	-0.05	-0.14	-0.63	-0.18	0.05
Organisational culture (sense of belonging and level of cooperation)	0.17	0.66	0.06	0.10	0.61	0.08
Transformational (vs transactional) leadership	0.20	-0.16	-0.72	-0.02	0.41	0.27
Participative (vs authoritative) decision-making	0.28	0.82	-0.55	-0.05	0.54	0.25

° Israel, Singapore, South Korea

Graph 2 – Pearson correlation coefficient between valuation to funding and other items

Sources for the tables 2-13 and the graphs 1-4: own analysis, evaluation and elaboration based on online information and resources (primarily, the websites of companies, and subsequently the Dow Jones Venture Source and The Wall Street Journal, LinkedIn, Glassdoor, Crunchbase Pro, Bloomberg, AngelList, Quora).

On the basis of the Pearson coefficient, organisational profiles are not correlated with value (interpreted here as *latest valuation)*, while they are significantly correlated with the *valuation to funding* as attraction lever for capital.

However, it must be observed that this territorial analysis can provide only some initial elements which are useful for planning further, more extensive studies, since the 109 high-value startups are unevenly spread over geographical areas, concentrated in the USA (62% of elements) but much less present in other countries.

In general, the above indicated frame shows:

- as regard to absolute value (as latest valuation), the relation with:
  - internal plurality (number of founders) [H1];
  - external plurality (collaboration) [H2];
- regarding the valuation to funding ratio (as attraction lever for investments), the relation with:
  - organisational culture [H3];
  - transformational leadership [H4];
  - participative decision-making [H5].

Based on the linear regression analysis and F test, the hypothesis H1 and H5 can be accepted with α lower than 0.05 while the hypothesis H2 and H3 with α lower than 0.10. Instead the hypothesis H4 cannot be accepted (table 9).

However, the above indicated links are in general not sufficient to explain changes in value.

Furthermore, it has to be considered that on the economic value definition there are undoubtedly external factors linked on the one hand to market and competition, and on the other to the geographic ecosystem and its technological and financial dynamic. Therefore other questions arise:

Rq4a. Is there a concentration of the startup value in certain markets?

Rq4b. Is there a concentration of the startup value in certain ecosystems?

To answer, we have to consider the socio-economic and the eco-system perspective, based on the following data (subsection 3.4.).

Table 9 – Regression Analysis

Value – Number of founders
Hypothetical function→ Value = 1.69904797 + 1.501717379 number of founders
R2 = 0.04506707; F = 4.955366179; Critical F-value 3.931556186 (α = 0.05); 2.753924929 (α = 0.10)
The H1 hypothesis of influence and causality can be accepted.

Value – Level of the external collaboration (vs competitiveness)
Hypothetical function→ Value = 2.07606907 + 2.584356001 level of the external collaboration
R2 = 0.03032159; F = 3.252052804; Critical F-value 3.93243761 (α = 0.05); 2.75439642 (α = 0.10)
The H2 hypothesis of influence and causality can be accepted with α equal to 0.075.

Valuation to funding – Organisational culture
Hypothetical function→ Valuation to funding = 3.620970059 + 1.224415685 level of organisational culture
R2 = 0.028387545; F = 2.892477255; Critical F-value 3.93711671 (α = 0.05); 2.75689879 (α = 0.10)
The H3 hypothesis of influence and causality can be accepted with α equal to 0.093.

Valuation to funding – Transformational (vs transactional) leadership
Hypothetical function→Valuation to funding = 5.685352686 - 0.316325079 level of transformational leadership
R2 = 0.00140602; F = 0.149247985; Critical F-value 3.930691675 (α = 0.05); 2.753462449 (α = 0.10)
The H4 hypothesis of influence and causality cannot be accepted.

Valuation to funding – Participative (vs authoritative) decision-making
Hypothetical function→Valuation to funding = 3.541269045 + 1.969153148 level of participative decision-making
R2 = 0.079420027; F = 8.627172989; Critical F-value 3.936142779 (α = 0.05); 2.756378019 (α = 0.10)
The H5 hypothesis of influence and causality can be accepted.

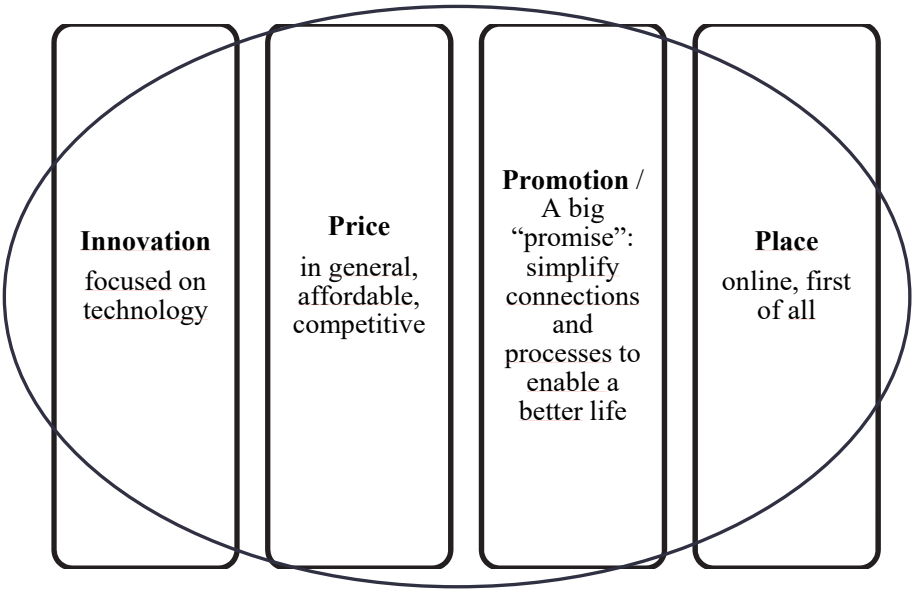
Sources for the tables 2-13 and the graphs 1-4: own analysis, evaluation and elaboration based on online information and resources (primarily, the websites of companies, and subsequently the Dow Jones Venture Source and The Wall Street Journal, LinkedIn, Glassdoor, Crunchbase Pro, Bloomberg, AngelList, Quora).

3.4. Markets, ecosystems and value

The findings reveal important details regarding not only an entrepreneurial perspective (strategic orientation, leadership and relationship models), but also a socio-economic perspective, as they show global tendencies which are at the heart of their existence and which, in turn, are strengthened and amplified through them.

An example would be the presence of startups in the sharing economy, and more specifically the positive loop linking companies like Uber and Airbnb to current sharing tendencies and behaviours.

Table 10 – Price, place, promotion and innovation focus: summary



The ability to understand and give voice to socio-economic developments and strategic-entrepreneurial attitudes permits speed of access to resources and services, determining the success of these businesses and providing new energy to the tendencies indicated above.

Often the steps to a startup's success arise from:

- careful observation of people's daily habits;
- analysis of the processes they follow to satisfy recurring needs;
- simplification and standardisation of these processes; and
- accessibility via mobile devices.

In effect, from a wider point of view, the different types of promotion carried out by the startups studied for this research are generally based on a big "promise": to simplify connections and processes to enable wider knowledge, new networking and sharing opportunities, and thus a better life (table 10).

Price – when clearly stated on the startup website – appears affordable and competitive compared with offline solutions. Place, as far as startups are concerned, is the web. The contrast between rapidity and inclusiveness of the online world, on the one hand, and the slowness and limitations of the offline world, on the other, is the first key to understanding the success of the high-value startups in this research.

Thus, from a general perspective, it is not surprising that these startups show an innovation strategy focused on technology and it must be considered that technological change fuels important opportunities and challenges at the same time (Selvam and Kalyanasundaram 2015; Startup Genome 2017:9; Iansiti and Lakhan 2017).

With particular reference to the Rq4a, it can be seen that there is a concentration of the value and number of top startups in specific markets. In fact, the Gini coefficient, being equal to 0.71, shows a high concentration of value (graph 3).

The focus on technology is evident and the sectors which predominantly absorb value are: mobility/transport; IT/Q2C (Quote to Cash), hosting, security; financial services; O2O (Online to Offline); big data analysis; health control (table 11).

These markets in particular reflect tendencies towards the sharing economy and networking; simplification and rapid accessibility to goods and services, global interconnectedness and wider knowledge; lifestyle and health care.

Table 11 – Socio-economic perspective / Needs and markets

Needs and markets	Startups (number)	Valuation (total)	Valuation (average)
Mobility/transport	8	167.6	20.95
IT/Q2C, hosting, security	18	103.6	5.76
O2O	20	78.4	3.92
Financial services	11	47.6	4.33
Big data analysis	8	31.2	3.9
Health control	10	26.8	2.68
Collaborative workspaces	1	17.2	17.2
Aerospace	2	14.5	7.25
Insurance	2	10.7	5.35
Free music /premium	1	8.5	8.5
HR services	3	6.9	2.3
Knowledge sharing	3	4.8	1.6
Sport tv	1	3.4	3.4
Ticket purchase	2	3.2	1.6
Electronic signature	1	3	3
Energy	1	2.9	2.9
Social media and networking	2	2.9	1.45
Gaming/fantasy	2	2.8	1.4
Software	2	2.6	1.3
Mobile advertising	1	2.5	2.5
Home design	1	2.3	2.3
Real estate	2	2.2	1.1
Autonomous mobility / driverless cars	1	1.6	1.6
Sensing solutions	1	1.6	1.6
Chatting	1	1.4	1.4
Travel	1	1.4	1.4
Cars / connecting buyers and sellers	1	1.2	1.2
Eyeglasses	1	1.2	1.2
Dynamic glass	1	1.1	1.1
General	109	555.1	5.09

It must also be noted that top startups worldwide also illustrate how innovation becomes reality such as in the case of autonomous mobility.

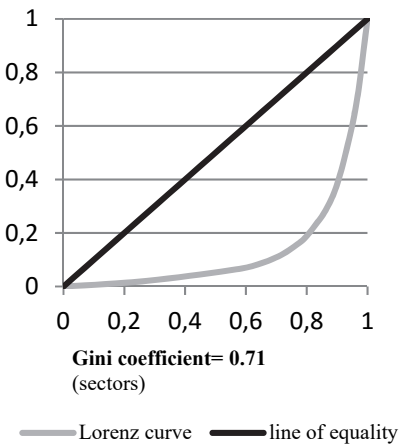
This discussion concerns not only big business, but also the positive conditions of achievement and acceleration and the fundamental role of hubs and ecosystems which facilitate:

– diffusion of knowledge and greater awareness regarding opportunities and resources, and
– the emergence of startups (Startup Genome 2017:9).

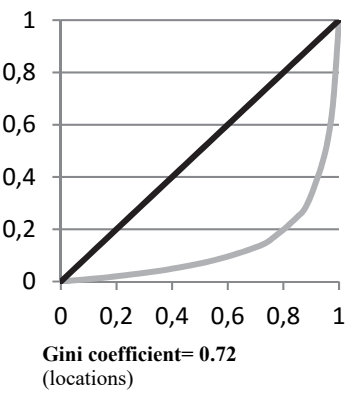
With particular reference to Rq4b, it can be seen that there is a concentration of the value and number of top startups in specific locations (tables 12 and 13). The Gini coefficient, equal to 0.72, clearly shows the high concentration of value (graph 4).

This means that an ecosystem – that is, a virtuous system of favourable conditions in terms of talent, technology, knowledge and financial resources – is crucial in order to allow a successful business startup (Koltai with Muspratt 2016).

It is not a coincidence that many founders of these startups have studied and obtained their degrees at American universities such as Stanford and MIT, at the same time immersed in and part of important ecosystems.



Graph 3 – Concentration of the value of startups: by sector (Gini coefficient)



Graph 4 – Concentration of the value of startups: by ecosystem (Gini coefficient)

Sources for the tables 2-13 and the graphs 1-4: own analysis, evaluation and elaboration based on online information and resources (primarily, the websites of companies, and subsequently the Dow Jones Venture Source and The Wall Street Journal, LinkedIn, Glassdoor, Crunchbase Pro, Bloomberg, AngelList, Quora)

Table 12 – Continents and countries

Area	Startups		Valuation (billion dollars, when applicable)		
	Number	%	Total	%	Average
Asia China	17	15.60%	173.5	31.26%	10.21
Asia India	6	5.50%	30.4	5.48%	5.07
Asia / Others	6	5.50%	14.2	2.56%	2.37
ASIA	**29**	**26.61%**	**218.1**	**39.29%**	**7.52**
EUROPE	**12**	**11.01%**	**26.7**	**4.81%**	**2.23**
USA California	43	39.45%	242.4	43.67%	5.64
USA / Others	25	22.94%	67.9	12.23%	2.72
USA	**68**	**62.39%**	**310.3**	**55.90%**	**4.56**
General	109	100.00%	555.1	100.00%	5.09

Table 13 – Specific locations

Specific location	Startups		Valuation (billion dollars, when applicable)		
	Number	%	Total	%	Average
Beijing, China	**10**	**9.17%**	**85.9**	**15.47%**	**8.59**
Guangzhou, China	1	0.92%	2	0.36%	2
Hangzhou, China	1	0.92%	1.5	0.27%	1.5
Shanghai, China	**3**	**2.75%**	**24.1**	**4.34%**	**8.03**
Shenzhen, China	1	0.92%	10	1.80%	10
Tianjin, China	1	0.92%	50	9.01%	50
Bangalore, India	1	0.92%	11.6	2.09%	11.6
Gurgaon, India	1	0.92%	1.1	0.20%	1.1
Mumbai, India	1	0.92%	5	0.90%	5
New Delhi, India	3	2.75%	12.7	2.29%	4.23
Tel Aviv, Israel	1	0.92%	1.1	0.20%	1.1
Singapore	3	2.75%	9.8	1.77%	3.27
Seoul, South Korea	2	1.83%	3.3	0.59%	1.65
Paris, France	1	0.92%	1.5	0.27%	1.5
Berlin, Germany	**3**	**2.75%**	**6.5**	**1.17%**	**2.17**
Tubingen, Germany	1	0.92%	1.7	0.31%	1.7
Senningerberg, Luxembourg	1	0.92%	1.1	0.20%	1.1
Amsterdam, Netherlands	1	0.92%	2.3	0.41%	2.3
Stockholm, Sweden	2	1.83%	9.9	1.78%	4.95
London, UK	2	1.83%	2.2	0.40%	1.1
Oxford, UK	1	0.92%	1.5	0.27%	1.5
Carlsbad, California, USA	1	0.92%	1.5	0.27%	1.5
Emeryville, California, USA	1	0.92%	3.5	0.63%	3.5
Hawthorne, California, USA	1	0.92%	12	2.16%	12
Irvine, California, USA	1	0.92%	1.1	0.20%	1.1
Milpitas, California, USA	1	0.92%	1.1	0.20%	1.1
Mountain View, California, USA	1	0.92%	1.8	0.32%	1.8
Palo Alto, Californa, USA	**7**	**6.42%**	**36.8**	**6.63%**	**5.26**
Redwood City, California, USA	2	1.83%	2.5	0.45%	1.25
San Francisco, California, USA	**24**	**22.02%**	**174.6**	**31.45%**	**7.28**
San Mateo, California, USA	1	0.92%	1.3	0.23%	1.3
Santa Monica, California, USA	1	0.92%	1.7	0.31%	1.7

Sunnyvale, California, USA	2	1.83%	4.5	0.81%	2.25
Dania Beach, Florida, USA	1	0.92%	4.5	0.81%	4.5
Fort Lauderdale, Florida, USA	1	0.92%	1.6	0.29%	1.6
Jacksonville, Florida, USA	1	0.92%	3	0.54%	3
Chicago, Illinois, USA	2	1.83%	4	0.72%	2
Northbrook,Illinois, USA	1	0.92%	1.5	0.27%	1.5
Boston, Massachusetts, USA	1	0.92%	3.7	0.67%	3.7
Cambridge, Massachusetts, USA	1	0.92%	3	0.54%	3
Needham, Massachusetts, USA	1	0.92%	1.2	0.22%	1.2
Waltham, Massachusetts, USA	1	0.92%	1.1	0.20%	1.1
New York, NY, USA	**10**	**9.17%**	**33.1**	**5.96%**	**3.31**
Austin, Texas, USA	1	0.92%	2.4	0.43%	2.4
American Fork, Utah, USA	1	0.92%	2.3	0.41%	2.3
Provo, Utah, USA	2	1.83%	4	0.72%	2
Arlington, Virginia, USA	1	0.92%	2.5	0.45%	2.5
General	109	100.00%	555.1	100.00%	5.09

Sources for the tables 2-13 and the graphs 1-4: own analysis, evaluation and elaboration based on online information and resources (primarily, the websites of companies, and subsequently the Dow Jones Venture Source and The Wall Street Journal, LinkedIn, Glassdoor, Crunchbase Pro, Bloomberg, AngelList, Quora)

 ISBN 9788891795571

4. Conclusions

Katia Giusepponi and Virginia Tosi

Based on technology and knowledge, the high-value startups analysed here capture and facilitate global tendencies, leveraging interconnectivity and sharing. They create strengths from the worldwide ecosystems in which they are immersed and which give them easier access to resources (Busenitz et al. 2003; Welter 2011; Spigel 2017).

They are physiologically focused on shaping markets and competitiveness. The effectiveness of their mission and vision characterises them.

The presence of women founders, although extremely rare, is in positive correlation with strategic perspective (Jennings and Brush 2013). Similarly, plurality of founders is in positive correlation with strategic perspective (in particular, level of shared vision), organisational profiles (specifically organisational culture) and value (Harper 2008).

Regarding organisational profiles, the measures of central tendency do not express high performance. However, the research findings show a correlation between dimensions of value (latest evaluation, valuation to funding) and organisational profiles, in particular culture, external collaboration and participative decision-making which emerge, thus, as key factors to be strengthened in order to increase the maturity of the enterprise.

Consequently, the main challenges and risks in maintaining success particularly involve:

- paying constant attention to people's behaviours and life-style, market, competition and opportunities arising from ecosystems;
- developing employee engagement and organisation maturity.

The main contribution of this work is to show the positive effects of profiles which can be linked to the category of plurality. In broad terms, this includes, from an internal perspective, factors such as the number of founders, attitudes to participation, and a sense of belonging and cooperation; and from an external perspective, factors such as the attitude towards collaboration and the ability to make use of fertile ecosystems, or to understand and interpret global trends (Feld 2012). However, the research has given rise to a number of reflections and insights into startups and their environment.

This work is generally focused on the 109 top startups worldwide and includes only brief considerations of differences among geographical areas. An in-depth country-by-country comparison would be an important perspective in order to improve the research contribution.

Furthermore, following these businesses over the long-term would be fruitful in order to better understand the factors for success or for failure.

Appendix 1 – Startups considered

(109 startups valued at 1.1 billion dollars or more, as of May 2017)

1-27	28-54	55-81	82-109
Uber	Credit Karma	Uptake	Deem
Didi Chuxing	Tanium	Prosper Marketplace	Apttus
Xiaomi	Instacart	WePiao	Thumbtack
Airbnb	LeSports	Sprinklr	Robinhood
Palantir	Delivery Hero	ZocDoc	Ticket Monster
Lufax	VANCL	AppNexus	Rubrik
Meituan-Dianping	Fanatics	Quora	FanDuel
WeWork	DocuSign	Honest Co.	Medallia
SpaceX	Grabtaxi	BuzzFeed	Infinidat
Flipkart	Moderna	CureVac	Warby Parker
Pinterest	Wish (ContextLogic)	Lakala.com	Auto1 Group
Dropbox	Bloom Energy	MongoDB	Automattic
DJI	Oscar Health Insurance	JetSmarter	Global Fashion Group
Stripe	Qualtrics	Quanergy	Actifio
Theranos	InMobi	Zoox	Proteus Digital Health
Spotify	OneWeb	Oxford Nanopore	IronSource
Zhong An Online	Mozido	Jawbone	Nextdoor
Lyft	Houzz	InsideSales.com	Farfetch
Snapdeal	Adyen	Razer	Shopclues.com
Ola Cabs (ANI Technologies)	Domo	Koudai Shopping	TransferWise
One97 Communications	HelloFresh	BlaBlaCar	Cylance
Magic Leap	Trendy Group	Mu Sigma	OpenDoor
Ele.me	Coupang	Unity Technologies	View
Sea	Zenefits (YourPeople)	Guahao.com	Anaplan
SoFi (Social Finance)	Blue Apron	Klarna	Deliveroo
Slack	Github	Hike	Gusto (ZenPayroll)
Intarcia Therapeutics	Avant	C3 IoT	Jiuxian
			Aiwujiwu

Source: own analysis and elaboration based on data from *The Billion Dollar Startup Club* (Dow Jones Venture Source and The Wall Street Journal).

Appendix 2 – Checklist

ENTREPRENEUR PROFILES

Company founded in	Age (2017): average	Age (at foundation): average	Number of co-founders	Number of men	Number of women

STRATEGIC PERSPECTIVE

Context interpretation and vision			Strategic orientation and mission	
Evidence y=1; n=0	Level of shared vision (1-5)*	Effectiveness (1-5)*	Evidence y=1; n=0	Effectiveness (1-5)*

ORGANISATIONAL PROFILES

Organizational culture		
Sense of belonging (1-5)*	Level of cooperation (1-5)*	Mean

Responsibilities vs skills, total 5		Transformational vs transactional leadership, total 5	
Responsibilities	Skills	Transformational leadership	Transactional leadership

Employee engagement: participative vs authoritative decision-making, total 5		Relationship model: level of collaboration vs competitiveness, total 5	
Participative	Authoritative	Collaboration	Competitiveness

ABILITY TO ATTRACT CRITICAL FACTORS /VALUE

People (1-5)*	Knowledge (1-5)*	Technologies (1-5)*	Financial resources: total equity funding	Financial resources: latest valuation	Valuation to funding	Rounds of funding (current)

SOCIO-ECONOMIC PERSPECTIVE / NEEDS AND MARKETS

Needs and markets	Startups (number)	Valuation (total)	Valuation (average)

CONTINENTS, COUNTRIES AND SPECIFIC LOCATIONS

Continents	Countries	Specific locations	Startups (number)	Valuation (total)	Valuation (average)

(*) 0 = highly negative, 1 = widely negative, 2 = slightly negative, 3 = slightly positive, = widely positive and 5 = highly positive.

Source: own analysis and elaboration.

References

Åstebro, T., Herz, H., Nanda, R., & Weber, R.A. (2014) Seeking the Roots of Entrepreneurship: Insights from Behavioral Economics, *Journal of Economic Perspectives* 28(3), 49–70.

Baptista, R., Karaoz, M. & Mendonca, J. (2007). Entrepreneurial backgrounds, human capital and start-up success. Jena Economic Research Papers, 45, 1-39.

Baum, J.R. & Locke, E.A. (2004). The relationship of entrepreneurial traits, skill, and motivation to subsequent venture growth. *Journal of applied psychology 89*(4), 587–598.

Becchetti, L. & Trovato, G. (2002). The determinants of growth for small and medium sized firms. The role of the availability of external finance. *Small Business Economics 19*(4), 291-306.

Beckman, C.M., Burton, M.D. & O'Reilly, C. (2007). Early teams: The impact of team demography on VC financing and going public. *Journal of Business Venturing 22*, 147–173.

Begley, T.M. (1995). Using founder status, age of firm, and company growth rate as the basis for distinguishing entrepreneurs from managers of smaller businesses. *Journal of business venturing 10*(3), 249–263.

Bertoni, F., Colombo, M.G. & Grilli, L. (2011). Venture capital financing and the growth of high-tech start-ups: Disentangling treatment from selection effects. *Research Policy 40*(7), 1028–1043.

Bosma, N., Van Praag, M., Thurik, R. & De Wit, G. (2004). The value of human and social capital investments for the business performance of startups. *Small Business Economics 23*(3), 227–236.

Boston, Massachusetts: Harvard Business School Press.

Brixy, U. & Hessels, J. (2010). Human capital and start-up success of nascent entrepreneurs. *EIM Research Reports, H201013*.

Brockhaus, R.H. (1980). Risk taking propensity of entrepreneurs. *Academy of management Journal 23*(3), 509–520.

Brush, C.G., Greene P.G. & Hart, M.M. (2001). From initial idea to unique advantage: The entrepreneurial challenge of constructing a resource base. *The academy of management executive 15*(1), 64–78.
Busenitz, L.W., West III, G.P., Shepherd, D., Nelson, T., Chandler, G.N. & Zacharakis, A. (2003). Entrepreneurship research in emergence: Past trends and future directions. *Journal of management 29*(3), 285–308.
Cannone, G. & Ughetto, E. (2014). Born globals: A cross-country survey on high-tech start-ups. *International Business Review 23*(1), 272–283.
Carter, N.M., Gartner, W.B. & Reynolds, P.D. (1996). Exploring start-up event sequences. *Journal of business venturing 11*(3), 151–166.
Chandler, G.N. & Jansen, E. (1992). The founder's self-assessed competence and venture performance. *Journal of Business venturing 7*(3), 223–236.
Chen, G., Hambrick, D.C. & Pollock, T.G. (2008). Puttin'on the Ritz: pre-IPO enlistment of prestigious affiliates as deadline-induced remediation. *Academy of Management Journal 51,* 954–975.
Chesbrough, H. & Rosenbloom, R.S. (2002). The role of the business model in capturing value from innovation: evidence from Xerox Corporation's technology spin-off companies. *Industrial and corporate change 11*(3), 529–555.
Christensen, C. (1997). *The innovator's dilemma: when new technologies cause great firms to fail*, Boston (MA): Harvard Business School Press.
Christensen, C.M., Baumann, H., Ruggles, R. & Sadtler, T.M. (2006). Disruptive Innovation for Social Change. *Harvard Business Review 84*(12), 94–101.
Christensen, C.M., McDonald, R., Altman, E.J. & Palmer, J. (2016). Disruptive Innovation: Intellectual History and Future Paths. Harvard Business School, *Working Paper* 17–057.
Christensen, C.M., Raynor, M. & McDonald, R. (2015). What Is Disruptive Innovation? *Harvard Business Review 93*(12), 44–53.
Colombo, M.G., Delmastro, M. & Grilli, L. (2004). Entrepreneurs' human capital and the start-up size of new technology-based firms. *International journal of industrial organization 22*(8-9), 1183–1211.
Cooper, A.C., Gimeno-Gascon, F.J. & Woo, C.Y. (1994). Initial human and financial capital as predictors of new venture performance. *Journal of business venturing 9*(5), 371–395.
Cope, J., Towards a dynamic learning perspective of entrepreneurship, Lancaster University Management School, *Working Paper* 2003/079.
Dautzenberg, K. & Reger, G. (2009). Entrepreneurial team characteristics and success of new technology-based firms in Germany. I*nternational Journal of Business and Globalisation 4*(1), 71-94.

Davidsson, P. & Honig, B. (2003). The role of social and human capital among nascent entrepreneurs. J*ournal of Business Venturing 18,* 301–331.

Davila, A., Foster, G. & Gupta, M. (2003). Venture capital financing and the growth of startup firms. *Journal of business venturing 18*(6), 689–708.

Duchesneau, D. A. & Gartner, W. B. (1990). A profile of new venture success and failure in an emerging industry. *Journal of business venturing 5*(5), 297–312.

Feld, B. (2012). *Startup Communities: Building an Entrepreneurial Ecosystem in Your City.* Hoboken (NJ): Wiley.

Ganotakis, P. (2012). Founders' Human Capital and the Performance of UK New Technology Based Firms. *Small Business Economics 39*(2), 495–515.

Gartner, W.B., Starr, J.A. & Bhat, S. (1999). Predicting new venture survival: an analysis of "anatomy of a start-up" cases from Inc. Magazine. *Journal of Business Venturing 14*(2), 215–232.

Gatewood, E.J., Shaver, K.G. & Gartner, W.B. (1995). A longitudinal study of cognitive factors influencing start-up behaviors and success at venture creation. *Journal of business venturing 10*(5), 371–391.

Gilbert, B.A., McDougall, P.P. & Audretsch, D.B. (2006). New venture growth: A review and extension. *Journal of Management 32,* 926–950.

Gottschalk, S. & Niefert, M. (2013). Gender differences in business success of German start-up firms.International. *Journal of Entrepreneurship and Small Busines, 18*(1), 15–46.

Haber, S. & Reichel, A. (2007). The cumulative nature of the entrepreneurial process: the contribution of human capital, planning and environmental resources to small venture performance. *Journal Business Venturing 22,* 119–145.

Hamari, J., Sjöklint, M. & Ukkonen, A. (2016). The sharing economy: Why people participate in collaborative consumption. *Journal of the Association for Information Science and Technology 67*(9), 2047–2059.

Harper, D. A. (2008). Towards a theory of entrepreneurial teams. *Journal of Business Venturing 23*(6), 613–626.

Hopp, C. & Stephan, U. (2012). The influence of socio-cultural environments on the performance of nascent entrepreneurs: Community culture, motivation, self-efficacy and start-up success. *Entrepreneurship & Regional Development 24*(9-10), 917–945.

Iansiti, M. & Lakhan, K.R. (2017). Managing Our Hub Economy: Strategy, Ethics, and Network Competition in the Age of Digital Superpowers. *Harvard Business Review 95*(5), 84–92.

Jennings, J.E. & Brush, C.G. (2013). Research on women entrepreneurs: challenges to (and from) the broader entrepreneurship literature? *Academy of Management Annals 7*(1), 663–715.
Koltai, S.R. with Muspratt, M. (2016). *Peace through Entrepreneurship. Investing in a Startup Culture for Security and Development.* Washington: Brookings Institution Press.
Lazear, E.P. (2004). Balanced skills and entrepreneurship. *The American Economic Review 94*(2), 208–211.
Marmer, M., Herrmann, B.L., Dogrultan, E. & Berman, R. (2011). Startup Genome Report – A New Framework for understanding why startup succeed, *Startup Genome*.
McGrath, R.G. (2010). Business models: A discovery driven approach. *Long range planning 43*(2), 247–261.
Minniti, M. & Bygrave, W.B. (2001). A dynamic model of entrepreneurial learning. *Entrepreneurship Theory and Practice 25*, 5–16.
Mthanti, T. & Ojah, K. (2017), Entrepreneurial orientation (EO): Measurement and policy implications of entrepreneurship at the macroeconomic level. *Research Policy 46*(4), 724–739.
Nanda, R. & Rhodes-Kropf, M. (2013). Investment cycles and startup innovation. *Journal of Financial Economics 110*(2), 403–418.
Peña, I. (2002). Intellectual capital and business start-up success. *Journal of Intellectual Capital 3*(2), 180–198.
Plummer, L.A., Allison, T.H. & Connelly, B.L. (2016). Better Together? Signaling Interactions In New Venture Pursuit Of Initial External Capital. *Academy Of Management Journal 59,* 1585–1604.
Pollock, T.G. & Gulati, R. (2007). Standing out from the crowd: the visibility-enhancing effects of IPO-related signals on alliance formation by entrepreneurial firms. *Strategic Organization 5,* 339–372.
Rasmussen, E. S., Madsen, T. K. & Servais, P. (2012). On the Foundation and Early Development of Domestic and International New Ventures. *Journal Of Management And Governance 16*(4), 543–556.
Rauch, A. & Frese, M. (2007). Let's put the person back into entrepreneurship research: a meta-analysis of the relationship between business owners' personality characteristics and business creation and success. *European Journal of Work and Organizational Psychology 16* (4), 353–385.
Reuber, A.R. & Fisher, E. (1999). Understanding the consequences of founders' experience. J*ournal of Small Business Management 37*, 30–45.
Ries, E. (2011). *The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses*. New York: Crown Business.

Santisteban, J. & Mauricio, D. (2017). Systematic Literature Review Of Critical Success Factors Of Information Technology Startups. *Academy Of Entrepreneurship Journal 23*(2), 1–23.

Schumpeter, J.A. (1934). *Theory of economic development: An inquiry into profits, capital, credit, interest, and the business cycle.* Translated from the German by Redvers Opie, New Brunswick (U.S.A) and London (U.K.): Transaction Publisher.

Selvam M. & Kalyanasundaram, P. (2015). Global IT/IT Enabled Services and ICT Industry: Growth & Determinants, *Proceedings of the International Symposium on Emerging Trends in Social Science Research,* April 2015, at http://globalbizresearch.org/Chennai_ Symposium/ conference/pdf/C549.pdf (accessed on June 11th, 2017).

Sexton, D.L. & Upton, N.B. (1985). The entrepreneur: a capable executive and more. Journal Business Venturing *1*, 129–140.

Shane, S. & Venkatraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of Management Journal 25*, 217–226.

Shepherd, D.A. & Levesque, M. (2002). A search strategy for assessing a business opportunity. *IEEE Transactions on Engineering Management 49*(2), 140–154.

Song, M., Podoynitsyna, K., Van Der Bij, H. & Halman, J.I.M. (2008). Success Factors in New Ventures: A Meta-analysis. *Journal of Product Innovation Management 25*, 7–27.

Song, M., Podoynitsyna, K., van der Bij, H. & Halman, J.M. (2008). Success Factors in New Ventures: A Meta-analysis. *Journal Of Product Innovation Management 25*(1), 7–27.

Spigel, B. (2017). The relational organization of entrepreneurial ecosystems. *Entrepreneurship Theory and Practice 41*(1), 49–72.

Startup Genome (2017), *Global Startup Ecosystem Report 2017,* Startup Genome LLC, at www.startupgenome.com (accessed on June 10th, 2017).

Strehle, F., Katzy, B. & Davila, T. (2010). Learning capabilities and the growth of technology-based new ventures. *International Journal Technology Management 52*(1/2), 26–45.

Stuart, R.W. & Abetti, P.A. (1990). Impact of entrepreneurial and management experience on early performance. *Journal of Business Venturing, 5,* 151–162.

Tiessen, J.H. (1997). Individualism, collectivism, and entrepreneurship: A framework for international comparative research. *Journal of Business Venturing 12*(5), 367–384.

Tzabbar, D. & Margolis, J. (2017). Beyond the Startup Stage: The Founding Team's Human Capital, New Venture's Stage of Life, Founder--CEO

Duality, and Breakthrough Innovation. *Organization Science 28*(5), 857–872.
Unger, J.M., Rauch, A., Frese, M. & Rosenbusch, N. (2011). Human capital and entrepreneurial success: A meta-analytical review. *Journal of business venturing 26*(3), 341–358.
Venkatraman, S. (1997). The distinctiveness domain of entrepreneurship research: an editor's perspective. In: Katz, J., Brockhaus, R. (Eds.), *Advances in Entrepreneurship, Firm Emergence, and Growth*. JAI Press, Greenwich, CT, 119–138.
Wan, F., Williamson P. J. & Yin E. (2015), *Antecedents and implications of disruptive innovation: Evidence from China, Technovation 39-40,* 94–104.
Wasserman, N. (2008). The founder's dilemma. *Harvard Business Review 86*(2), 102–109.
Welter, F. (2011). Contextualizing entrepreneurship – conceptual challenges and ways forward. *Entrepreneurship Theory and Practice 35*(1), 165–184.
Witt, P. (2004). Entrepreneurs' networks and the success of start-ups. *Entrepreneurship & Regional Development 16*(5), 391–412.
Zhao, H., Seibert, S.E. & Lumpkin, G.T. (2010). The relationship of personality to entrepreneurial intentions and performance: A meta-analytic review. *Journal of management 36*(2), 381–404.

Other sources

AngelList, at https://angel.co (accessed on May 2017).
Bloomberg, at https://www.bloomberg.com (accessed on May 2017).
Companies' web sites (accessed on May 2017).
Crunchbase Pro, at https://www.crunchbase.com (accessed on May 2017).
Dow Jones Venture Source and The Wall Street Journal, The Billion Dollar Startup Club (by Scott Austin, Chris Canipe and Sarah Slobin), at http://graphics.wsj.com/billion-dollar-club/ (accessed on May 2017).
Glassdoor, at https://www.glassdoor.com (accessed on May 2017).
LinkedIn, at https://www.linkedin.com (accessed on May 2017).
Quora, at https://www.quora.com (accessed on May 2017).

 ISBN 9788891795571

Tables and graphs – List

 ISBN 9788891795571

Authors

Katia Giusepponi
Associate Professor of Business Economics
University of Macerata, Department of Education, Cultural Heritage and Tourism
E-mail: katia.giusepponi@unimc.it

Ernesto Tavoletti
Associate Professor of Business Management
University of Macerata, Department of Political Science, Communication and International Relations
E-mail: ernesto.tavoletti@unimc.it

Virginia Tosi
PhD in Economics and Management
University of Macerata.
E-mail: v.tosi@unimc.it

Authors' contributions

This co-authored work is the result of a research project jointly undertaken by KG, ET and VT.

KG wrote the section: *3.Results and discussion*; KG and ET wrote the section: *1.Theoretical framework*; KG and VT wrote the sections: *2.Methodology*; *4.Conclusions.*

Research into entrepreneurial factors of success and failure continuously improves through observing and studying new players in the business world.

This work focuses on top startups in the world and seeks to understand their current habitat, what they excel in, and also the challenges awaiting them.

Based on technology and knowledge, the high-value startups analysed here capture and facilitate global tendencies, leveraging interconnectivity and sharing.

They create strengths from the worldwide ecosystems in which they are immersed and which give them easier access to resources but the organisational profiles often represent contexts of weakness and fundamental challenge.

The main contribution of this work is to show the positive effects of plurality. In particular this concerns the number of founders, attitudes to participation, and a sense of belonging and cooperation; and from an external perspective, factors such as the attitude towards collaboration and the ability to make use of fertile ecosystems, or to understand and interpret global trends.

Moreover, an effort to link strategic, organizational and social profiles has been made, creating a model for understanding entrepreneurship which will also be useful for comparing future evidence.

Katia Giusepponi, is an Associate Professor of Business Economics at the University of Macerata. She received her degree in Economics and Business (cum laude) at the University of Ancona and her PhD in Business Economics at the University of Pisa. Her main areas of research concern entrepreneurship, corporate strategy, business analytics and sustainability reporting. She has worked in several multi-competence teams, supporting them within strategic planning and control processes.

Ernesto Tavoletti, is an Associate Professor of Management, International Marketing and International Business Strategy at the University of Macerata. He received a degree in Economics and Commerce (cum laude) at the University of Bologna and a PhD in Economics and Management of Enterprises and Local Systems at the University of Firenze. His research interests focus on international business, innovation management and higher education management.

Virginia Tosi, received her degree in Business Management and Consulting (cum laude) and her PhD in Economics and Management at the University of Macerata. She is a business consultant with particular focus on business planning, corporate finance, mergers and acquisitions. Furthermore, she teaches in training courses for entrepreneurs and professionals.

FrancoAngeli
La passione per le conoscenze