

Characterizing business angels - international expanded study

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Abstract— This study is based on previous research that comprehensively described angel investment and its possible effects in determining a start-up's success by analyzing 2,114 business angels by examining their professional and entrepreneurial experience, academic formation and their demographic characteristics. Our research brings in three new cases from China to expand previous research internationally. This study verifies previous finding that business angels' professional, entrepreneurial and academic background closely correlate with their investment in start-ups, and an ecosystem is created during the process. Additionally, this study shows the profile of BAs in China and that of BAs in the US may share a set of similarities.

Keywords – *business angel, start-ups, venture capital, seed and early stage funding, Chinese business angel, international comparison.*

I. INTRODUCTION

Both for start-ups themselves and experts in the entrepreneurial scene, funding has always been a topic of concern and constant discussion [1] [2]. Much of the discussion has centered on how young companies can somehow find a way of being financed at very early phases of their development [3]. Besides the well-known financial means that banks offer, there is a growing market of equity investors in the form of venture capital or private equity companies, among which some individual investors that operate on their own have made a name for themselves: Business Angels.

Business angels (BAs) or angel investors are, according to specialized literature on the topic, individuals who invest heavily with their own means in young, private companies and who during the funding process provide a very high amount of their own capital, while not being a friend or relative of the company's founders [4] [5].

While venture capital (VC) and private equity (PE) companies have been closely scrutinized, BAs have not been of special interest for researchers in the industry [6], despite their important role for young companies in particular. The available work on these individuals identifies a research gap in determining a relationship between the human capital of a BA and the eventual success of a start-up [7]. The purpose of the following analysis is to provide a detailed picture of BAs and

to validate the previous theory from reference papers [1] and [2] on how some of BAs' similarities, such as professional experience and academic background, relate to the success of chosen companies.

The following pages first summarize the available insights from existing literature on the topic. To understand the benefits of BA financing, it is necessary to investigate BAs' influential, unique human competences on the progress of invested start-ups. With a novel dataset, various traits of BAs, such as professional background, socio-demographical characteristics, start-up experience, angel investment experience and academic background, are analyzed. Expanded from study [1] [2], this paper provides a comparative portrait of selected BAs in the US and China; three new cases from China, different from the six US ones in study [1] [2], are presented here to show the similarities in the characteristics of BAs between the US and China. We discuss BAs' effects on start-ups and conclude with comments for further research.

II. THEORY

Before analyzing the relationship between a BA's role within the structure and history of a start-up and its eventual success, it is of special importance to showcase the current status and latest findings of available research on the topic.

A. Difficulties of start-up fund raising

Start-ups have recently been a matter of special interest not only because of how much attention they have received from media outlets, but also because of their critical importance for the economy [8]. They are essential drivers of major innovations in various industries. Despite this, start-ups often struggle for a number of reasons to assure the adequate financial means to keep their operation afloat and ensure their survival in a competitive economic environment [3] [9].

As a result, entrepreneurs often seek to obtain risk capital in the form of equity due to the fact that access to debt finance is difficult to procure [5]. This source of external equity can either come in the form of BA financing or VC financing. When it comes to arousing the interest of BAs or VC companies, it can be challenging to convince investors of the start-ups' growth and investment potential [10]. For instance, it is a difficult task to assess a start-up's performance at the seed and early stages of its development [9]. Not only is raising

capital hard because of the elevated risk a start-up pertains, but also because these young companies often have little to no experience in this area and do not yet have an established work routine [11]. Many of these young companies go bankrupt afterwards, with 23% of them doing so within the first two years after their foundation [12]. Moreover, the markets in which they operate tend to change considerably fast.

B. Seed and early stage financing

Start-ups are frequently dependent on external financing at different stages, especially in the form of informal capital [13]. This latter source of capital, which is needed for seed or early stage start-ups, can be contributed by BAs or the founders themselves together with friends and family [5]. Figure 1 shows the common types of investors and the different funding stages in which they normally operate.

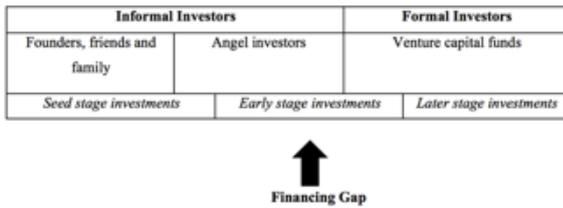


Figure 1. Equity investors at the seed, early and later stage in firm growth [14]

BAs are natural informal investors that, unlike their VC counterparts, tend to operate in a wider industry sector spectrum and who mostly invest during a company’s early stages [15]. Reference [16] emphasizes that 28% of all BAs invest during the seed stage where 45% do so during a company’s early stages. Regarding the market’s size, [17] has pointed out that the informal investment sources have overtaken the formal ones. Reference [18] has published new research data that shows that VCs invest during the seed stage about 2% of the time, with 34% covering the early stages and the rest of them mostly investing in expansions and the later stages of a company.

Specialized literature [19] describes that it is precisely in this gap that BA investment flourishes. This role was particularly strengthened by the financial crisis, in which banks and venture capitals notoriously stopped financing start-ups at their riskiest stages. Banks have kept a low profile as important funding partners for start-ups because of the high risk normally associated with them. On the other hand, VC investors continuously try to minimize the risk they undertake by financing start-ups at their more intermediate and mature stages [14].

1) Business angel financing

BAs are “wealthy individuals, often former entrepreneurs themselves, who place their money into early stage entrepreneurial ventures, acting alone or in angel groups” [20]. With an ever-increasing role, BAs not only support young companies financially, they also help them in other entrepreneurial aspects [5] [19] [21].

Even though BAs are vital for seed and early start-up financing, they are less recognized than VC [22]. Many fields regarding their impacts and characteristics, especially human capital characteristics such as reputation, education and entrepreneurial experience, have yet not been investigated thoroughly [5] [6] [7]. However, it is crucial to examine the relationship between human competences and the success of start-ups [7]. Reference papers [1] and [2] provide a detailed introduction on BA financing.

2) Venture capital financing

VC is a highly prevalent resource of capital for young and small technology start-ups with potential for high returns and great risk [5] [13] [23]. Existing research defines VCs as “independent, professionally managed, dedicated pools of capital, that focus on equity and equity-linked in privately held, high growth companies” [4]. VCs play an important role in supporting companies during their growth stage. Established companies such as Google, Ebay and Apple have all raised capital from VCs [24].

C. Business angels in China

According to Statista¹ and *The Wall Street Journal*², as of January 2018, four out of the top ten highest valued start-up companies worldwide came from China. Angel investment in China is playing a more significant role in the capital market, despite it is not so mature as other countries such as the US [25]. BA in China came out in the 1990s with the rise of the internet and high-tech industries, which were also the main focus of the investment [26]. Following the budding stage in 1990s and developmental stage in 2000s, BA investment in China is undergoing an accelerated growth stage from 2000 to present, with more investments done not only on individual basis but also via angel groups, angel investment funds, and angel funding tied to accelerators [27].

Reference [26] summarizes China BAs into five categories: 1) new wealth group with foreign degrees or top management positions in foreign corporates, 2) high-income individuals, 3) the group that inherits wealth accumulated by previous generations, 4) foreigners and expatriates with strong interest in China market, and 5) investors sponsored by the government.

[28] is the first comprehensive research into Chinese informal investors, especially their characteristics in deal making process and investment performance. The study collected a sample of 70 investment deals undertaken by 11 informal investors in two provinces of China, and 30 face-to-face interviews were conducted with these investors during 2005 to 2010. The study finds that despite emerging role of BAs inspired by entrepreneurship development in China, the lack of mature informal financial market highlights the importance of networking and the investors’ preference on short-term investments.

Based on a sample of 78 BAs reached out by questionnaires, [25] takes a step further on the characteristics and investment behaviors of BAs in China. The profile is in

¹ See <https://www.statista.com/statistics/407888/ranking-of-highest-valued-startup-companies-worldwide>.

² See <https://www.wsj.com/graphics/billion-dollar-club>.

general comparable to that in other developed countries (such as the US) and emerging economies (such as Thailand) in terms of age, education background and business experience, but Chinese BAs are younger and are not all high net worth individuals; their holding period is relatively short, and personal relationship plays a critical role.

III. CHARACTERISTICS OF BUSINESS ANGELS

A. Data collection

In order to extend the little previous research done on how traits of a BA can influence a start-up [7], data used for empirical analysis was collected from several sources. To compile an up-to-date list with active BA data, a list of 2,114 BAs was obtained from CrunchBase. CrunchBase is a crowd-funded platform that readily provides information on start-ups, their founders, their investors and both their company founding and funding processes. With the purpose of reaching the insight of a “stereotypical” BA, different attributes were defined and completed using data from CrunchBase, LinkedIn and Twitter. The attribute list of human capital contains data on the BAs socio-demographic characteristics, work and funding experience as well as academic education. Moreover, we used data – as will be explained in more detail later on – from Pitchbook and Zero2IPO.

B. Variables

Different variables were defined and suitable scales were selected. These variables were chosen as it is of particular interest to find out the extent to which characteristics of different BAs within the same or different companies resemble each other. On the other hand, it can shed light on the components that make up the success of a company, especially in the case when both the academic and professional experience of a BA correlates directly with the industry sector the company operates in.

C. Descriptive statistics

It is noticeable that 96% of the sampled individuals are male. More than a half are American and 89% of them currently reside in the United States. This result directly correlates with [18] case study that determines that the majority of available data on BAs actually originates from the United States. Notably, after the US, the most common countries of origin for the sampled BAs are India, Canada, UK and France. The average year of birth for the sample is 1972, which corresponds to an average age between 44 and 45 years. Interestingly, about 86% of the individuals in the sample have themselves founded or cofounded a start-up.

Regarding their professional careers, it can be seen that 95% of the 1,223 sampled individuals have had managerial roles as CEOs, chairmen or high-ranking executive positions within a company at some point in their careers. Remarkably, half of them had already been managers before that and about 30% of them had had a technical occupation. The clerical/administrative, consultant and mentor types are grouped under the category of “others”.

The last part of the analysis focuses on the BA’s academic background. More than half of the sampled individuals majored in business, 44% of them have a technical major, and

24.7% completed a degree in another area. Some BAs even completed two degrees. It is interesting to note that 39.3% completed a master’s degree and 38% received a bachelor’s degree. Moreover, only 6.5% hold a doctoral degree.

A further valuable understanding on BAs is provided by analyzing which industry sectors they currently work in. 43% of the BAs are active in the internet-based sector, followed by the VC and PE Sector (19%) and IT services (18.8%).

IV. CASE STUDIES

The previous dataset was enriched with company data and funding information retrieved from CrunchBase, Pitchbook and Zero2IPO. Pitchbook is a PE and VC database with detailed investment and investor information on private companies; as Pitchbook is a professional and comprehensive industry database, cases whose information was extracted from this database hence provide a reliable and inclusive foundation for qualitative analysis of good quality. Zero2IPO is a Chinese venture capital and investment data platform with information on investment institutions, investors, and companies; information from this professional data platform from China is a credible source to compliment the information from CrunchBase.

After building up a BA profile in the previous section, this section connects BAs with start-ups. Three additional case studies from China are presented with the purpose of visualizing a comparison between the US and China and a cause and effect relationship between a BA and a company where similarities regarding the respective BA’s human capital are highlighted and presented.

A. Alibaba

Established in 1999, Alibaba is a Chinese leading e-commerce conglomerate that provides technology infrastructure and marketing reach to help merchants and brands to engage with their users and customers; through various subsidiaries, Alibaba is also involved in the cloud computing, digital media and entertainment, logistics, and financial services sectors. It is now one of the top 10 biggest internet companies by market capitalization worldwide.

When Jack Ma founded Alibaba with his team of 18 people, they were short of capital. A group of angel investors led by Mr. Simon Wong Kwong-chi, now Founding Partner of Whiz Partners Asia, injected 500,000 USD into the start-up³. Figure 2 illustrates Alibaba’s funding rounds and its investors in a chronological sequence. The major 8 funding rounds from 1999 to 2012 have raised more than 4.7 billion USD.

³ See http://bus.hkbu.edu.hk/eng/bus/news-and-events/publications/BB33_Private_Capital_Rising.jsp.

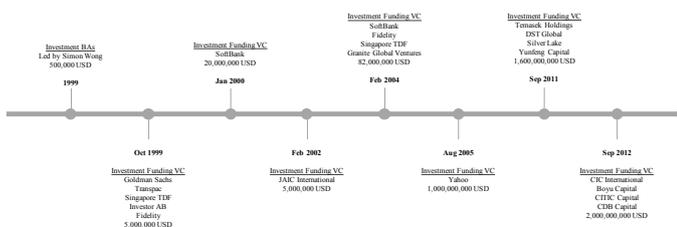


Figure 2. Alibaba timeline

Despite Alibaba's fast expansion in the past decade, fund raising was not easy. Ma made his business from scratch with humble beginnings. Before establishing Alibaba, Ma, who had no backing from venture capitals or traditional financial institutions, was an English teacher in Hangzhou and later took an internet job at the Ministry of Foreign Trade and Economic Cooperation⁴. There is no public information about detailed names of the first and only group of BAs except Wong. In an interview with Wong by Hong Kong Baptist University⁵, Wong disclosed that he even wrote the business plan for Ma when Ma lacked funds to pay the business registration fee for its debut in the US. The capital injection from Wong and later from Goldman Sachs and SoftBank paved way for the following venture capital investment which was critical for Alibaba's development.

In order to find possible effects of the BA funding on Alibaba, the human capital characteristics are first recognized.

By observing the industrial sector where the BA operates, it is noticeable that the BA has operated in electronic, technology, and financial sectors. These are just the sectors Alibaba seeks to operate and expand to as part of its strategy and company goals. The BA's academic background in fields such as physics and business administration have a relevant orientation to these sectors as well. The BA has abundant managerial experience and highly developed skills and knowledge in technical and investment areas in Asia. The BA also has experience as founder of capital investment companies and are very active with various public positions in Mainland China and Hong Kong. Lastly, the BA resides in Hong Kong and has invested in companies in the same country or continent.

B. ofo

Case 2 is about the development of ofo. Different start-ups of various size are analyzed to achieve a comprehensive picture of investors and start-ups.

Founded in 2014 and headquartered in Beijing, ofo is one of the world's largest station-free bike sharing platforms. It has over 10 million active bicycles to more than 200 million users in 250+ cities globally. The users are mainly located in China, but the company has entered into the US, the UK, Europe, etc. as well. The riders use ofo app to scan the QR code to automatically unlock the bikes; at the destination, they simply park the bikes safely and legally anywhere they want, and

⁴ See <https://www.bloomberg.com/quicktake/jack-ma>, and <https://www.forbes.com/global/2000/0724/0314096a.html#4f808e823545>.
⁵ See http://bus.hkbu.edu.hk/eng/bus/news-and-events/publications/BB33_Private_Capital_Rising.jsp.

manually lock them to automatically end the trips. The company reached a valuation of 3 billion USD in the latest funding round in July 2017, one of the highest valued on-demand start-ups worldwide.

When ofo started from a student project at Peking University by 5 students, the no-dock bike-sharing idea was innovative, but the sustainability of the business model was also challenged given the required massive capital and manpower. The first funding round took place in the end of 2015, leading by Hongdao Capital, an angel investment group established in 2010 by four BAs with comprehensive experience in the internet industry and angel investment. The first round opened the possibilities for further funding rounds backed by domestic renowned venture capital companies such as GSR Ventures⁶ and CITIC PE⁷, and by industrial moguls such as Alibaba, Didi Chuxing⁸, and Xiaomi⁹.

The company went through 8 different funding rounds. The total amount was larger than 1.2 billion USD. Figure 3 shows chronologically the various investments that were made in the company throughout its funding course. The latest investment by Ant Financial, an Alibaba affiliate, was expected to form a cooperation to strengthen ofo's internet and credit card payments and its international expansion plan.

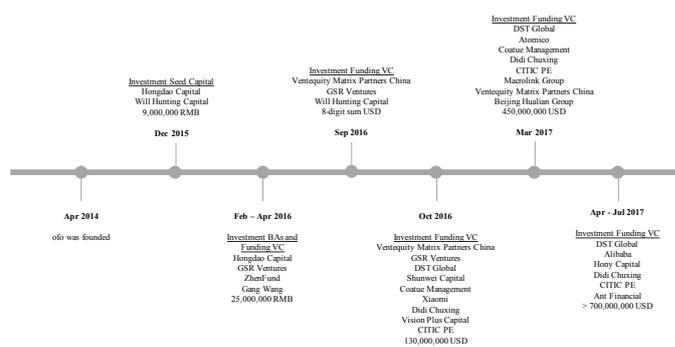


Figure 3. ofo timeline

It is worth mentioning that in the series A and B funding rounds in first half of 2016, investment BAs were present as well. Established in 2011, ZhenFund is a Beijing-based seed fund founded by Bob Xu and Victor Wang, co-founders of New Oriental¹⁰. Another individual investor, Gang Wang, had been working in Alibaba from sales to regional manager for more than ten years before being a BA.

⁶ A Chinese venture capital firm focused on early-stage technology companies; it currently manages about 2 billion USD in USD and RMB-denominated funds.
⁷ A private equity that operates in China, Japan, and the US, with USD 4.7 billion of committed capital under management.
⁸ A ride-sharing company founded in China in 2012; the second highest valued start-up company worldwide as of January 2018, following Uber, the top 1.
⁹ A Chinese electronics and software company founded in 2010; the third highest valued start-up company worldwide as of January 2018.
¹⁰ Established in 1993 and the first Chinese educational institution listed in New York Stock Exchange, it is one of the largest private education service providers in China.

After examining the seven BAs that have taken part in ofo's funding, it can be seen that they share common ground in some aspects despite different personal experience. All of them reside in China, where the main business of ofo is based. Six out of the seven BAs mainly invest in the internet industry, which is ofo's core competitiveness and China's booming sector for angel investment.

Last but not the least, it is notable that all of the investors in ofo once had high-ranking management roles in other companies, and four of them had a technical position or studied computer science. At least five of them have started their own companies or been a co-founder, and all of them have invested by themselves or via their angel funds in more than three companies.

C. DayDayUp

In order to achieve a more comprehensive understanding of the relationship between angel investment and potential success of a start-up, a third case is added here. The previous two cases focus on large and medium sized world-famous companies, this case instead analyzes a small internet-based start-up.

DayDayUp is a community that connects Chinese and global innovators. Inspired by WeWork and founded in 2015 by Yiquan Bo and Jerome Scola – two former executives from GWC Inc – the company aims to establish an international tech innovation ecosystem for corporations, investors, and entrepreneurs to find valuable partnerships and investment opportunities. Chinese companies are supported to learn and explore international business, while foreign companies are assisted to expand in China. Via this platform, start-ups can be connected with top angel investors, VCs, and banks, and can also enjoy the shared office spaces that house tech entrepreneurs from around the world.

DayDayUp opened its first Beijing office in 2015 and now has spaces in China, the US, and Israel. It has a database of more than 60,000 Chinese start-ups and more than 5,000 foreign companies.

The young company got its BA investment several months after foundation, as showed in Figure 4 in a chronological order. After the seed round, the pre-A funding round was backed by BA, VCs, and technology companies. In total nine BAs invested in the company during the two funding rounds.

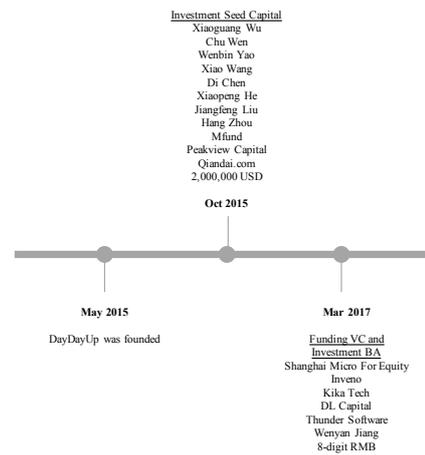


Figure 4. DayDayUp timeline

All of the nine BAs reside in China, where DayDayUp is headquartered. Two of them also have business presence in the US, where DayDayUp is entering. This is consistent with previous pattern that BAs invest in the countries they live or have business in. Eight out of the nine BAs had already been very active in the internet and mobile industries before they invested in the company; all of them had founded their own businesses or been a co-founder. At least six of them had both technical and high management positions in big names in related industry for a long time, such as Xiaoguang Wu with Tencent¹¹, Xiao Wang with Baidu¹², Xiaopeng He with Alibaba, and Jiangfeng Liu with Huawei¹³; five of them held degree in computer science or telecommunication engineering. All of them had been high-ranking managers and five of them had pursued study in business administration, although seems only three of them had invested in more than three start-ups.

V. RESULTS AND DISCUSSION

A. Results

The objective of this analysis is to determine which human competences present in a BA decisively contribute to the eventual success of a company.

In this context, data referring to BAs have been analyzed and results have been shown. These results are now expanded with the findings from each of the case studies presented in previous section. After having identified similarities among the BAs for each of the nine successful companies – Google, Uber, Grockit, Pinterest, Affirm, and Foursquare from papers [1] and [2], and Alibaba, ofo, and DayDayUp as new additions from China – the next step is to show the results taken from each case that point to the same direction.

To do so, Table I lists the nine cases in the first column and shows the different categories in which the BAs present in each

¹¹ A Chinese tech giant founded in 1998; it provides internet related services and products in China and abroad, and is one of the top 10 biggest internet companies worldwide.

¹² A Chinese internet search provider founded in 2000; it also provides other internet related services and products, and is one of the top 10 biggest internet companies worldwide.

¹³ Founded in China in 1987, it is the largest telecommunication equipment company in the world.

case both diverge or converge in order to round up the key findings.

TABLE I. CASE STUDY – BAS COMMONALITIES

	Investment Experience	Socio-demographic Characteristic		Main Industry	Professional Experience			Academic Background
	Serial Investor	Nationality	Residence	Sector	Start-up (founder)	Executive Job	Dual Job (managerial & technical)	Degree Program
Google	***	-	***	***	***	***	***	**
Uber	***	**	***	**	***	***	*	**
Grokkit	**	***	***	***	***	***	*	**
Pinterest	***	**	***	***	**	***	*	**
Affirm	***	**	**	***	***	***	**	**
Foursquare	***	***	***	**	**	***	*	**
Alibaba	***	***	***	***	***	***	-	***
efo	***	***	***	**	**	***	*	**
DayDayUp	*	***	***	**	***	***	**	**

Notes: commonalities in respective category for BAs founded in case studies
 *** = all BAs; ** = vast majority; * = several; - = no correspondence

The similarities among BAs observed from the three new cases in China are consistent with those observed from previous six cases in the US. First, despite one case where several BAs had only made one single investment, vast majority of BAs are serial investors that had invested in multiple companies. In terms of socio-demographic characteristic, almost all BAs in the nine cases reside in the countries which they invest in, and especially the BAs from each of the Chinese cases have the nationality of the country where each company is headquartered. In terms of main industry, all nine cases show that BAs tend to invest in the industries where they have experience. From professional experience perspective, all BAs had held high-ranking jobs within companies, some of which were industry leaders in the world. A high percentage of them had founded or been co-founders of their own companies. An important portion of the BAs had not only managerial background, but also experience in more internet, technology-oriented positions. What’s more, almost all BAs obtained a degree in management, computer science or telecommunication engineering.

The three new cases from China show a set of similarities that were identified from research [1] and [2]. All nine cases combined together demonstrate that BA investment behaviors share many similar characteristics as discussed above.

B. Discussion

Using a sample of 2,114 angel investors, this analysis has strengthened a part of the definition of a BA. According to [29], a BA is defined as someone who often has entrepreneurial experience. 86% of the sampled BAs fit into this definition, as well as almost all of the investors discussed in the three new Chinese cases. Because of their own entrepreneurial experience, some BAs are in a good position to mentor young, small companies.

However, this definition can be extended to include some of the characteristics discussed before. For instance, over 90% of BAs are men and most of them reside in the US in studies [1][2]. This point directly correlates with [5] observation that BAs often invest in the places where they live and that a

majority of innovative start-ups, which coincidentally attract most of the attention of investors, are usually headquartered in the US. However, with the development of innovation in China, it is noted that growing numbers of BAs in China are paying attention to the expanding start-ups in the same country; the three cases presented before confirm this.

Moreover, reference [4] has pointed out that angel investors invest in areas in which they have experience of their own and in which they have a genuine interest. The case studies sustain the idea that the academic background and the professional experience of these angel investors correlate with the company’s own industry sector. A possible reason for this may be found in [30] work, where it is emphasized that BAs often carry a huge risk on their investment because of the nature of the company’s development stage during which they mostly invest. However, it is possibly the case that they try to compliment this risk with their own experience in order to avoid huge monetary failures and to enrich a company’s structure with their own expertise.

The results from all nine cases are presented in Table I, where it is shown that it is often a combination of managerial experience and technical knowledge that truly defines an angel investor. This supports the idea that they represent an important asset for new companies.

Another interesting observation from this analysis that coincides with observations from prior research refers to investment behavior. The presented timelines show that all BAs have been active in a founding round once per company. This is in line positively with [5] work, which concludes that often BAs do not distribute their investment in different stages but actually, almost 75% invest only once in a company [31].

VI. CONCLUSION, LIMITATIONS AND FURTHER RESEARCH

BAs are, in the area of venture financing, just as important as VC [20] [31] [32]. Even though they may not be under the spotlight [5], they help young companies to overcome their funding problems [19]. They usually invest in quantities below 1 million USD [33].

In addition, angel investors are present in the companies they invest in, either as mentors or as external executives [33]. That is why this study, which investigates how BAs potentially influence the course of a start-up through their own human competences, is meaningful in its approach to understand the funding nature of a company. A general overview on the human capital from the 2,144 sample BAs shows that some characteristics can influence the success of a company. This is achieved with their rich academic formation and wide entrepreneurial and professional experience in a variety of positions [34]. Since almost BAs in all cases had experience in the sector of the industry from the company they invested it [30], they proved to be a valuable asset for entrepreneurs to more effectively and wisely take decisions.

From the above, a spiral ecosystem for BA investment could be drew out. BAs start from technical and/or managerial positions and accumulate both experience and wealth after years of work in companies; then they might start their own business, which could add value to their insight and

understanding of the industries they are interested in; when they turn from entrepreneurs to BAs, they invest in start-ups, assist in further funding, and provide guidance to the growth of these young companies. When BAs obtain more experience and investment return from the companies they invest in, they will be in a better position to invest in more start-ups. This ecosystem is expected to create a win-win environment for both BAs and start-ups. Based on these findings, we can argue that the development of BA market in China is going to the same direction as the US, and many successful companies such as Alibaba have emerged from this growth momentum.

The present work had an objective to verify and expand the findings in research [1] [2] through three new case studies in China. The first impression is that BAs in China are in principle comparable to the US market. Nevertheless, given the low profile of BAs in China with limited disclosure, and only three cases were randomly selected, they may not represent all BAs and start-up population in China. One potential further study could be based on statistical analysis on a larger list of BAs in China and then compare the results with the findings in this paper and research [1] [2].

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