Received 7 January 2018
Revised 7 May 2018
3 June 2018
Accepted 10 August 2018

Understanding the accelerator from resources-based perspective

Chul Hyun Uhm
Geon Investment Co., Ltd, Seongnam, South Korea
Chang Soo Sung
Dongguk University, Seoul, South Korea, and
Joo Yeon Park
School of Business, Yonsei University, Seoul, South Korea

Abstract

Purpose – This study aims to explore Accelerators and their practices in sustaining start-ups within their innovative programs for these companies based on the resource-based perspective. Moreover, with an ever-increasing demand for Accelerators amongst start-up companies, this study also demonstrates the importance of Accelerators, as it pertains to new venture creation.

Design/methodology/approach – This research uses an exploratory case study approach to examine a comparative view of leading Accelerator companies in the USA and Korea based on resource support.

Findings – The results of this study show that there are a number of differences between Accelerators of the two countries in terms of the resources they support for early-stage start-ups. The findings also show some similarities. However, in Korea, the Accelerator landscape is limited, where mentorship, resources and investments are not readily accessible, resulting in low success rates for Korean start-up companies. These limitations have had a negative trickle-down effect when providing entrepreneurs with strong access to resources and investors, which highly affects the success rates of early-stage start-ups.

Practical implications – In terms of the resource-based theory, this study contributes to the growth of early start-ups by emphasizing the role of the accelerator and suggesting the extent and impact that entrepreneurs have access to resources and investors.

Originality/value – With significant growth in start-ups around the world, the necessity for start-up funding and mentorship has increased drastically. Start-up companies need various types of assets, systems, knowledge and information to achieve their goals. In Accelerators, start-ups receive all the aforementioned resources while also improving their entrepreneurial skills. Start-up companies have many options in seeking investors who support both tangible and intangible resources to boost growth. While there is a wealth of information on traditional funding methods, there are few studies that shed light on the role of Accelerators from the resource-based point of view.

Keywords Resource-based view, Comparative analysis, Start-ups, Business incubator, Accelerator

Paper type Case study

Asia Pacific Journal of Innovation and Entrepreneurship
Vol. 12 No. 3, 2018
pp. 258-278
Emerald Publishing Limited
2398-7812
DOI 10.1108/APJIE-01-2018-0001

1. Introduction

The rise of start-ups and venture capital in recent years has triggered the emergence of a new player in start-up ecosystems. Accelerators are recognized as a new player in promoting entrepreneurial ecosystems, but their specific impact on the market is not yet clear. Start-up companies have difficulty raising funds because they are based on intellectual assets, and venture capital cannot afford severe uncertainties and limited returns. To improve this market avoidance area, each government supports the initial enterprise support policy (Meyer, 2005). Start-up companies that have to raise funds for survival have difficulty in attracting enough investments when internal funds reach their limits. However, there still seems to be insufficient investment and support for venture companies, especially "early" venture companies in the start-up ecosystem. There are various government support policies to supplement this. In the case of Korea, it encourages investment in venture companies through the KVIC Fund launched in 2006, and supports technology development at the beginning of the business through the National R&D funding program. Although efforts to find new growth engines have expanded to the start-ups and the development of venture companies with innovative technologies and ideas, most companies still face difficulties maintaining their internal funding and securing external financing. The global explosion of interest in entrepreneurship has spurred the growth of Accelerator programs to service the start-up culture, which is no longer limited to just Silicon Valley (California, USA). As start-ups begin to proliferate beyond the traditional incubation centers, regional and national leaders are increasingly looking to these companies as a source of economic growth. As they do, officials are confronted with the reality that innovation-driven entrepreneurship differs significantly from traditional venture activity. In other words, cultivation strategies are radically different.

Against this backdrop, there is a strong need for "accelerating services" to support the acceleration of start-up companies, rather than simply seeking investment through traditional venture capital, angel investors and outside ventures, which could lead to failure more often than success. The explosive growth of Accelerators has given entrepreneurs and their start-ups the opportunity to reach additional resources, such as mentoring and seed-stage funding. While Accelerators have rapidly emerged as regional growth infrastructures and are viewed as playing a key role in the scaling-up of growth-oriented ventures in the entrepreneurial ecosystem, consisting of entrepreneurs, policymakers and academics, Accelerators have continued to raise questions about their efficacy (Kim, 2015). Despite research to understand the components and purposes of Accelerators (Roberts and Eesley, 2011; Yusubova and Clarysse, 2016), there remains a confusion and limited understanding on what Accelerators are, how they work and where they provide value to entrepreneurs. Specifically, start-up companies need various types of assets, systems, knowledge and information to achieve their goals, all of which are expected to be provided for by Accelerators. Start-up companies have many options in seeking investors who support both tangible and intangible resources to help the business grow. While there is a wealth of information on traditional methods of funding, there are few studies that shed light on the role of Accelerators from the resource-based view (RBV). In addition, Accelerators in Korea are emerging and rapidly spreading as key entrepreneur and venture support organizations and are spreading rapidly. However, little is known about the value of these programs and, in practice, differences in perspectives and roles among incubators, company builders, etc. are ambiguous. Therefore, the purpose of this study is to explore Accelerators and their practices in sustaining start-ups within their innovative programs. And with an ever-increasing demand for Accelerators amongst start-up companies, this study will also demonstrate the importance of Accelerators in new venture creation. The research presented

herein uses an exploratory case study approach to examine a comparative view of leading Accelerator companies in the USA and Korea based on resource-based perspective.

2. Literature review

2.1 Accelerators: new incubation model

The process of building a new business is a complex task that essentially involves intensive research and planning. The basic concept of the business incubator is to provide start-up firms with a range of resources and services related to jump starting the business. As a lack of resources and capability is the key reason for start-up failures, the business incubator provides all of the basic resources needed for start-ups (e.g. education, facility support, global networking, funding and market analysis) and access to professional expertise through its business network. Incubation has already proven to be of great value in promoting small- and medium-sized enterprises through entrepreneurship activities and technological development in developed and developing countries.

A business incubation center is defined as "a shared office space facility that seeks to provide its incubatees (the "tenants") with a strategic, value-adding intervention system of monitoring and business assistance with the objective of facilitating the successful new venturing development while simultaneously containing the cost of their potential failure. It is a network of individuals and organizations" (Hackett and Dilts, 2004). Incubation centers develop and integrate the resources and knowledge gained from prior experience in incubation consulting, with support from government and industrial institutions, or through formally subsidized projects. These resources and knowledge are then provided to their tenants, who are often young and lack the critical resources to commercialize their products and/or services.

Incubation, therefore, describes the value-adding processes, activities, arrangements, designed programs and services which business incubators offer to facilitate and accelerate the development of their tenants/incubatees to the point where they can leave the incubator and compete efficiently and independently in a dynamic market. Moreover, business incubators are an important instrument for developing an economy through the support of entrepreneurship and innovation.

Accelerators are unprecedented phenomena because of dramatic reductions in experimental costs for early, promising technologies (Hallen *et al.*, 2014). They are a group of experienced professionals who provide office space, guidance, mentoring, networking, management services, knowledge and expertise to early entrepreneurs to help them succeed in the early stages of a venture (Fishback *et al.*, 2007). It is an accredited private agency or corporation that supports entrepreneurship training and professional mentoring to accelerate start-up success and growth. It also supports venture teaming, business idea fine-tuning and product development. Accelerators assist early start-ups to grow steadily by providing intensive boot camp training (Bauer *et al.*, 2016; Mian *et al.*, 2016). In addition, Accelerators provide funds and resources to help early start-ups grow. These groups are transforming the venture creation process by their support to add value. Unlike other business programs, the Accelerator operates a competitive selection process, requiring start-ups to answer questions about business models. From the first highly distinguished Accelerator, Y Combinator launched by Paul Graham in 2005 – renowned as the most successful and copied Accelerator (Christiansen, 2009; Pauwels *et al.*, 2016) – led to fast growth of start-ups in large-scale expansion from the USA to Europe (Cohen and Hochberg, 2014; Goswami *et al.*, 2018).

The accelerator is evolving into a modified form of the incubator, and so far it has been used in the industry in combination with the term incubator (Schwartz, 2013;

Wise and Valliere, 2014). The characteristics of Accelerators resemble traditional business incubators, given that they focus on firms at the earliest stage of development and provide them with entrepreneurial support, but their programs have evolved to embrace unique characteristics (Miller and Bound, 2011; Cohen and Hochberg, 2014). However, Acceleration programs are typically more comprehensive and competitive than incubators and work with early-stage start-ups that have proven artifacts or product-market fit. In exchange, Accelerators would typically receive early-stage equity and may have the option to continue or exit its mentorship programs after its graduation (Grimaldi and Grandi, 2005). Specifically, they provide an intense mentorship and education program in a certain time frame, so that the founders can reach a quick success or failure, which can provide mutually beneficial reaching a higher value creation. The application process is open to the global ecosystem and highly competitive, generally focusing on small teams with technical background that are further involved in start-ups. For participating start-ups, the Accelerators also provide a seed investment, in exchange for equity shares, and founding members behind them often have extensive experience as entrepreneurs or angel investors (Cohen and Hochberg, 2014). Finally, the most valuable aspect is the provision of intense mentoring and advice, and of numerous networking opportunities among investors and other start-ups in a supportive open start-up culture (Christiansen, 2009; Radojevich-Kelley and Hoffman, 2012; Goswami *et al.*, 2018).

In this sense, successful Accelerator programs have played a key role as a starting point in fostering a new network community among founders, investors and other stakeholders, (Miller and Bound, 2011). Even though the phenomenon has received growing interest from practitioners, previous research has mostly focused on incubators and their role in addressing start-up failure (Lendner and Dowling, 2007; McAdam and Marlow, 2007; Schwartz, 2013). Literature on Accelerators has only begun to gain some attention only in recent years (Miller and Bound, 2011; Cohen and Hochberg, 2014; Isabelle, 2013; Pauwels *et al.*, 2016). For example, Miller and Bound (2011) previewed the first in-depth study on the phenomenon, benefits and business models of Accelerators, but they did not cover the key aspects of programs and tools offered to start-ups. Later, Cohen and Hochberg (2014) compared and contrasted the main characteristics of Accelerators with those of incubators and angel investors in terms of program duration, business model and education and mentorship offered, whereas Isabelle (2013) focused on how these differences influence a new entrepreneur's decision to join a certain type of Accelerator. As shown in Table I, there are different characteristics of Accelerators from incubators (Dinah, 2011), suggesting that the Accelerator is an evolved model of the incubator.

Accelerator contestants are selected from an open pool of qualified candidates led by start-up teams with creative ideas. In the case of a top-notch Accelerator such as Y Combinator and Techstar, the selection procedure is strict so that only 1-3 per cent of applicants are selected. As most start-ups face a lack of management experience, processes and resources, they hope to fill in the gap with an investment post Demo Day (Jang *et al.*, 2016).

In sum, Accelerators are companies and institutions that foster initial start-up growth using the know-how and financial resources of successful senior entrepreneurs and provide support services such as investment, education and mentoring in a short period of time. Accelerating growth through comprehensive support can overcome the "valley of death" in the first three years after the initial start-up company has been established. After the scheduled period (6-12 months), the Accelerator offers follow-up investments. Identification of ideas, investment, mentoring and networking are offered to increase the success rate of entrepreneurs and speed up growth. Empirical literature on Accelerators has recently

	Incubator	Accelerator
Customer	All science-based businesses (bio-tech, Nano, medical equipment, clean energy, etc.), non-technical business, includes people of all ages, genders and the experienced in related industries and sectors	Web-based, mobile app, social networking, game, cloud, software development etc. Business that does not require immediate massive investment, Business that can prove concept
Business model	Incubator business model is more than 90% non-profit purpose (It is made for profit by companies and investors.)	Business model primarily for profit
Sponsor	Universities, economic organizations, local organizations, government	Entrepreneurs and Investors
Selection process	Competitive selection in the community	Competitive selection in various regions and countries, worldwide
Duration	1-5 years more (Avg. 33 months)	Short-term boot camps (1-6 months)
Investment	Do not usually invest directly	Usually invest between $180,000 and $250,000 per team. 4%-8% of ordinary shares
Facilities	Reasonable price or free office space during incubation	Meeting place during boot camps or long-term office space

Table I.
Differences between incubators and accelerators

received attention and thus lacks comprehensive data sources and consistent theoretical perspectives to study this phenomenon (Cohen and Hochberg, 2014; Isabelle, 2013; Miller and Bound, 2011; Pauwels *et al.*, 2016). In addition, more in-depth study on the impacts on new ventures participating in incubation or acceleration program is needed.

2.2 Resource-based theory

The resource-based view is a theory that focuses on the importance of resources held by an organization among various factors affecting the performance of the organization. According to the resource-based theory, the performance of an organization can be enhanced through the ability to retain specific resources or create new resources internally including physical, human and organizational resources, rather than external factors that can easily be accessed by other competitors (Barney *et al.*, 2001; Wernerfelt, 1984). Such resources and competences can promote the growth of the small firms by enhancing creation and opportunity exploitation behaviors of entrepreneurs (Ferreira *et al.*, 2010; Lin and Nabergoj, 2014).

Newbert (2007) argued that in the development of new venture, the availability of resources and capabilities play a critical role in the early stages of the start-up. For example, the presence of relevant and abundant resources in the market helps the entrepreneur in making decisions on how to best use these resources and gain competitive advantage. An entrepreneur, in the context of this study, is an individual who typically has limited resources, which he/she attempts to efficiently use to exploit a viable business idea through new venture creation (Sobel, 2008; William, 2016). By creating a new venture, the entrepreneur gains access to additional resources, which assist in increasing the point of differentiation and competitiveness of the new venture. Entrepreneurs therefore use specific skills and capabilities to help them in making rational decisions and which lead to achieving success through new venture creation (Ozdemir *et al.*, 2014).

Start-up companies need various types of assets, systems, knowledge and information achieve their goals. They are expected to receive the resources in the Accelerator program and to improve entrepreneurial orientation (Covin and Slevin, 1989). Cooper and Bruno

(1977) found that entrepreneurial expertise is an important feature of a successful entrepreneur and that entrepreneurs with relevant experience are more likely to be found in successful entrepreneurs (Roure and Modesto, 1986). Learning by doing is something that all founders eventually experience, but it is a highly inefficient process over time. Therefore, the main focus is on speeding up the learning cycle in a time-constrained format. Accelerators provide various resources from boot camps for nascent entrepreneurs to advisors on funding and angel investors' opinions. Moreover, Accelerators provide founders and mentors who possess real-world experiences in the market, ideas, technology or industry. Mentors also provide additional forms of human capital resources. They give start-ups advice on a variety of business models, share ideas and help with training and networking, as well as resources and funding (Radojevich-Kelley and Hoffman, 2012). This allows entrepreneurs to expand their networking of human and physical resources and develop potential key relationships to maintain business and secure additional funding.

In particular, it is important to cooperate with external organizations to supplement the company's limited internal human and material resources for innovation in the early stages of start-ups. Because it is important to use external knowledge in the innovation process (Cinzia *et al.*, 2017; Chesbrough, 2003; Srivastava *et al.*, 2017), the role of accelerators can be seen as an innovative platform concept that enhances the competitiveness of an enterprise ecosystem.

After reviewing the literature on business incubators through the lens of RBV perspective, we found that resources could be classified into four categories: human, financial, technological and organizational resources. "Human resources" refer to attributes of the founding team, a business incubator's management team and staff by which their unique talents and skills are vital to the success of the business incubator. "Technological resources" refer to the firm-specific products and (physical) technology, equipments/laboratories, highly specialized skill sets and technological capabilities. "Organizational resources" refer to capabilities associated with formal and informal planning, controlling and coordinating and systems, routines and relationships embedded in the firm. "Financial resources" refer to all financial and in-kind support that firms can use. In our study, RBV was used to identify enabling factors in five categories: human resource, facility support, global connection, financial investment and network relations (Barney *et al.*, 2001; Cinzia, *et al.*, 2017; Radojevich-Kelley and Hoffman, 2012).

2.3 Status of accelerators in Korea

The Korean start-up ecosystem has been exploding over the past couple of years. As more interesting start-ups begin to emerge, the support services that assist this growth have diversified and matured. The incubation programs and business accelerator are now growing in Korea. This is because initial support for innovative ideas held by start-up companies and business support networks for commercialization are more important to increase the likelihood of initial companies' success. While efforts to find new growth engines have expanded to the start-up and upbringing of venture companies with innovative technologies and ideas, the recognition and methods of entrepreneurship have expanded dramatically. But, most companies still face difficulties in internal funding and external financing, which has a significant impact on the survival of firms (Shrader and Simon, 1997). In the case of Korea, it encourages investment in venture companies through the Korea Venture Investment Corp. launched in 2006 and supports technology development at the early stage of the business through the nation-wide R and D funding program. Venture firms that have to raise funds for survival have a lot of difficulty in attracting sufficient funding when internal funds reach their limits. However, we still feel that venture

companies, especially "early" venture companies, lack adequate investment and support within the venture ecosystem.

With the rapid growth of new technologies, the continued strength of the financial markets and media coverage, the Accelerator program is recognized as a meaningful platform for start-ups. A new policy is also being developed to foster global accelerators for venture start-ups. The Accelerator phenomenon in Korea began to take-off when the Small and Medium Business Administration (SMBA) selected four Accelerators in 2012. Currently, about 50 Accelerators are operating. The main objectives of start-ups in the Accelerator program are funding, brand value, verification of business model, support for commercialization and networking via mutual experience exchange among similar types of founders. Table II indicates the Accelerator business activities surveyed with eight Accelerators in Korea (Accelerator Leaders Forum (ALF), 2014).

Ultimately, the Accelerator program should be able to achieve the objectives of both the consumer and the supplier of the program by strengthening the capacity to connect with the investment capital to secure abundant mentors and a sustainable management system. However, Korea is still in a nascent stage for adopting the Accelerator program as a new model of the advanced incubation program and cultivating it politically. It is necessary to build a model suitable for the Korean entrepreneurial ecosystem by carefully analyzing the success and failure factors of the world's leading Accelerator programs. Against this backdrop, we recognize the inevitable need for "accelerating service" to support the Accelerators, rather than simple investment obtained through the process of concentrating on existing venture capitals, business incubators and angel start-ups. This new concept of Accelerators has emerged as a key entrepreneur and venture company that has accelerated the success of start-ups in Korea.

3. Method and finding

3.1 Case selection and data

This study compares the current situation of the accelerators in Korea with the activities of the international leading accelerators to identify the strengths and weaknesses in terms of RBV. To do this, we chose to examine multiple case studies designed as a research strategy. With the aim of gaining a comprehensive understanding of how the Accelerator of Korea resembles that of the USA, we conducted a case study on the open nature that influences a start-up's survival (or even success). Thus, we have deliberately chosen three main Accelerators, starting with the first major discipline in Korea, namely, Primer, Neoply and Spark Lab. Primer began their program as the first Accelerator in Korea, whereas Neoply started as the first corporate Accelerator. Spark Lab was known as the first Accelerator strongly focusing on international perspective. Likewise, we chose three major Accelerators in the USA, namely, Y Combinator, Techstar and 500 Start-ups, in terms of number of investments and exits according to the Crunchbase, a database for IT start-up operated by TechCrunch (crunchbase.com).

Table II.
The key status of accelerators in Korea

	Number of start-ups	Investment (MN KRW)	Start-ups /Batch	Number of Graduates	Sales (MN KRW)
Max	50	300	15	50	700
Average	19.4	55	9.7	18.5	220
Min	3	10	0	0	0
Respondents	16	8	11	9	700

We used archive data as a major source to analyze the dimensions and supports for Korea and USA Accelerators from the perspective of RBV. Multiple data collection methods were adopted to acquire a profound understanding of the dynamics involved. Archival data include a variety of sources such as industry reports, internal Accelerator program history, company presentations, annual reports, websites and organization news. These ancillary data sources are important information for understanding the context of key Accelerators and organizing case histories. As the Accelerator model is still very nascent in Korea, it is necessary to focus on the best performing accelerators in bringing in-depth insights about an Accelerator's key design parameters.

3.2 Descriptive observation

There are a number of key Accelerator programs in Korea and USA that offer a range of services and financing for early stage start-ups. Most of the Accelerator companies in the study emphasize that they invest predominantly in technology-based start-ups with mentoring networks. Likewise, Accelerator companies interview and review applications prior to selecting their candidates. They look at the business concept itself and the team's ability to be on-site for three to six months. They look to invest in radically changing, exploding growth, internationally or nationally scalable venture ideas within certain key industries. If an idea does not fit into an Accelerator's theme, the venture will not be funded despite its potential. Table III provides descriptive information about the accelerators in Korea analyzed in this study.

Accelerators are an important new development in venture creation. They are an important and growing source of initial financing for start-ups and early growth phases of technology ventures. Connection to investors is an important aspect to long-term success of companies funded through seed Accelerator programs. Both Y Combinator and TechStars have a strong track record of receiving follow-on funding. While the programs typically ensure that the first product is developed and pitched, some level of capital to continue operations will be required. For instance, 500 Start-ups hosts a discussion session with Stanford University faculty, VCs and Angel Investors that covers related investment strategies, initial investment tactics, tools and more. In the case of Y Combinator, after the acceleration program graduation, the founders can selectively participate in the subsequent round of portfolio companies. While TechStars has its own VC Arm, it is currently investing in a third fund of $150m (total assets under management of $265m) to lead a follow-on investment in alumni which makes its entrepreneurs to gravitate toward the program to make sure future fundraising process is swift. Table IV provides descriptive information about the top-notched major accelerators in the USA analyzed in this study.

3.3 Comparative view of Accelerators: Korea vs the USA

When it comes to choosing an Accelerator program, many elements such as investment stage, support services, unique features and performance that the Accelerator program provides are important factors to accelerating the growth of early-stage start-ups with limited resources. Therefore, Accelerators help entrepreneurs create and grow the company via various educational programs, and resources provide additional aide to improving business processes in legal, HR and PR strategy, financial issues and many others. Based on the theory of RBV, we discuss the five Accelerator elements that emerged from our findings, such as educational support, financial investment, network relation, facility supports and global connection. This section discusses the results from the case analysis by comparing and contrasting between major US Accelerators benchmarks and top-tier Accelerators in Korea.

Table III.
Accelerators in Korea (2017)

Design elements	PRIMER The first start-up Accelerator in Korea	NEOPLY Leading corporate Accelerator led by Neowiz	SPARK LAB Specializes in global advancement
Education/Programs	Internship program for start-up mentoring and education. Systematic and practical mentoring The "Demo Day": Once a year, showcase business models and products/services Continuous mentoring based on the seed money investment Incubating activities: generating sales and profits, or helping to attract the next level of investment. Early start-up: team building, BM establishment, prototype/prototype implementation, early investment Training and seminars: management, law, marketing, market conditions, technology Counseling services: exchange technology and information Training/Networking PR/HR support through 4 primer workshops Primer Entrance Program: Entrepreneur's Internship is an abbreviation for entrepreneurship experience and education program	Weekly meetings to diagnose and coach A 6-month on-site residency Workshops: 1:1 office hour with in-house VCs Closed Demo Day: mostly angel group and in-house investment arms	World-class team of mentors Each start-up gets matched with 4-6 mentors Professionals in each industries (e.g. Internet of Things, mobile, online games, e-commerce, digital media, hardware, healthcare and the internet) Weekly teaching sessions: learn from and network with renowned Korean and international entrepreneurs. 3-month Accelerator program: twice a year Exchange of feedback Demo Day: attended by Korean VCs and VCs from all around the globe
Investment opportunities	Investor pools consisting of individual investors, corporations and public organizations	Investor pools consisting of individual investors, Neowiz and its VC investment arm, GEON	Investor pools consisting of individual investors, corporations and public organizations
Facilities	Location services: NA	Office space rental in Pangyo Valley	Office space in Maru: a fully equipped facility with free access to the Global Accelerator Network (GAN)

(*continued*)

Table III.

Design elements	PRIMER The first start-up Accelerator in Korea	NEOPLY Leading corporate Accelerator led by Neowiz	SPARK LAB Specializes in global advancement
Industry/sector	No limitations on the type of business and field, free of charge for participating	Internet, mobile, e-commerce and digital media sectors (no gaming)	Internet, online gaming, mobile, e-commerce and digital media sectors
Regional/ Multinational concentration	SZZ Partners, Strong Ventures and Spigen Korea provide mentoring for overseas expansion Overseas workspace (LA), and marketing/distribution channels for global expansion	Offices in Tokyo and Shanghai Support for overseas expansion through Shanghai's Neoply China and Tokyo's Game-on	Search for entrepreneurs who have a vision to expand into the USA, China, Japan and other regions and want to build a global enterprise
Funding structure	$20,000 up to 10% equity	$20,000 up to 10% equity Special offers: cloud services including AWS, Toast, IBM, badge/accounting	Up to $40,000 investment by company and up to 6% equity acquisition Perks of $900,000 or more (legal services, etc.)
Alumni relations	Continue to receive additional investment M and A, consulting and mentoring for company management as a member of the Primer Club	Monthly networking event with Neoply graduates	

Table IV.
Accelerators in the USA (2017)

	500 Start-ups	Y Combinator	TechStars
Investment stage	Working prototype required (or at least previous experience in successful launch of product) Notable performance indicators (user traffic, revenues and so on) Multidisciplinary team (design, engineering, marketing, etc.)		
Investment amount and equity	~$125 k Equity shares ~5% Series A/B Follow-on Investment of $50k~$1M post-graduation	$11k~$20 k Equity shares ~2 ~ 10%	$6k ~ $18 k Equity shares ~6%
Other investment-related matters	250+ mentors and 3,000+ founder networks Diversified investment portfolio strategy: seed investment management in offices across 20 countries and investments in over 1,500 start-ups in 50 countries	Acceptance rate: ~3% Prefer software focused start-up and require a skilled software engineer Establish unconditional follow-on investment by the VCs post-graduation	Acceptance rate: ~1% Prefer software focused start-up and require a skilled software engineer Investing in a third fund of $150m with a VC Arm (Total AUM$265m) Follow-on investments in TechStars and alumni via its VC Arm
Performance	Unicorns: 33 of them such as Credit Karm, a twilio, Grab, etc.	13% exit success of portfolio companies as of 2013	1024 portfolio companies Total Funding $3.38bn Sustainable management or successful M and A 90% (Sustainability 79%, M and A 11%)
Support services	4 annual accelerating programs: annually in Silicon Valley and San Francisco Start-up funding, education and start-up community Emphasis on internet marketing, customer acquisition, design, user experience, lean start-up and application Fund raising through a network of mentors with expertise in a variety of areas including growth and design and engineering Various types of education by experts in various fields such as	Three-month accelerating program: twice a year Connect with investors every week 10 mentors and 7 full-time mentors Alumni network, B2B customer association, specific category of founder network, alumni demo day Alumni workshop and mini conference Demo day: gather top investors to conduct 1:1 meetings	Three-month accelerating program Lean start-up training such as MVP Hundreds of mentor networks, but no formal full-time mentor Offer sessions with successful investors and founders Partnership with large businesses/ IBs such as Amazon and Barclays 28 different accrual rating programs (e.g. Barclays NYC/Alexa/Austin)

(*continued*)

	500 Start-ups	Y Combinator	TechStars
	marketing, accounting, product design, mobile, user test and sales Distribution network: in-house distribution team of specialists Brand PR: The most active Seed VC and top Accelerator in the world A global mentor		
Linked program	Microsoft, IBM, Rackspace, AWS, sendGrid, go.co, localytics, Gundersen Dettmer, Talkdesk, wework and so on.		
Unique feature	Own main funds, as well as micro funds, investments in a particular region/industry can be carried out through micro funds Focus on post-seed, pre-series. A post-graduation. Provides a training and implementation guide for growth when investing in companies	After Acceleration program graduation, the founders can selectively participate in the subsequent round of portfolio companies If the value of the portfolio company is less than ~US$300m, the Y Combinator will participate in the subsequent round investment through creation of the additional fund Continuous ecosystem creation with VC, angel investor, SI, university, etc.	After program graduation, the accelerator founder can selectively participate in the subsequent round of portfolio companies Conferences such as start-up week

Table IV.

As shown in Table V, the general characteristics of an Accelerator are compared and contrasted in terms of educational support, financial investment, network relation, facility support and global connection. Overall, the USA offers much stronger depth and breadth of network and ties.

4. Discussion

Entrepreneurs need different types of assets, systems, knowledge and information to achieve their goals and the role of accelerators in early financial, human, technical and organizational resources is critical. Thus, understanding the role of an accelerator in a resource-based perspective can help to consider the extent to which support for the growth of an initial entrepreneur is suggested. The RBV offers a valuable framework to analyze how the Accelerator can optimize scope and interaction of resource flow between start-ups and Accelerators. The quality of the exchange between Accelerator and start-up depends on the Accelerator's resources, its degree of access to and quality of resources available, as well as the openness and quality of participating start-ups.

Start-ups have difficulty in raising sufficient financing initially because it is mainly based on intangible intellectual assets, whereas venture capitalists are faced with high uncertainty and limited exit options. To improve market avoidance, each government, organization and institution should help early-stage start-ups through policy creation and resource support (Mayer *et al.*, 2008). As part of this effort, Accelerators, which are now attracting attention, support the scarce resources of early entrepreneurs through support of education, mentoring, investment and network supports. The Accelerator model is an example of the recent shift toward a focus on intangible, knowledge intensive and support services in incubation services. Accelerator is an organization that aims to accelerate the creation of new ventures by providing resources including human, physical, and financial and networking to venture companies for a limited time. Although the Accelerator model includes intangible services, such as mentoring and education, it has a number of other specific features that set it apart from existing incubation models (Isabelle, 2013). First, they primarily provide physical, human and financial resources over a short period of time. Second, they typically provide seed investment in exchange for equity. Third, they are more closely connected with business angels and small private investors. One of the reasons for this difference is that they focus on early-stage technology start-ups where the cost of experimentation has dropped significantly over the last decade. Fourth, the Accelerator model aims to develop start-up companies for investment-ready businesses by focusing on business development and providing intensive mentoring sessions and networking opportunities (Christiansen, 2009). Finally, they focus on intensive interaction, monitoring and training for a limited time of on average of three to six months, and continue to provide sustained networking support afterwards.

There are several key findings to investigate between the first major Korean Accelerators and top-notch US Accelerators if there are differences in supporting resources to start-up companies. A direct comparison of US and Korean Accelerators shows that there are major differences. First, it is the difference between supporting and providing intangible assets, including human assets and information sharing regarding Accelerators' roles. A pool of mentors between the two countries has significant differences including the time duration and intensity of mentor intervention, coupled with the breadth, readiness and fit of the mentor. There is an abundant pool of founders with successful exiting of many start-ups in US Accelerators, whereas Korean Accelerators have difficulties in pooling sufficient experts and mentors with specialized areas. This result can be explained by the fact that US Accelerators entered the industry in 2005, whereas Korean Accelerators began gaining

Table V. Comparison of accelerators from resources-based view

Resources	USA	Korea
Education (Human)	*Mentoring* Mentor group consists of successful start-up founders Matchmaking/"speed dating" match for companies Ongoing mentor evaluation by Accelerator management team	*Mentoring* Because there are not many successful entrepreneurs, the pool of mentors is very limited. Many mentors are from big conglomerates/investors rather than start-ups
	Curriculum Various topics such as finance, marketing and management Offers lectures, workshops, etc. *Counseling services* Accelerator management team provides weekly counseling in office hour format Monitoring business support and project progress through a dedicated evaluation time	
	Demo Day/Investor Day Demo Day/Investor Day to contact with customers and investors Networking opportunities with potential customers and investors post the demo day	*Demo Day/Investor Day* Demo Day and Investor Day offered, but the close connection with potential customers and investors is still soft
Facility support	*Location services* Provide a shared office space to collaborate with other portfolio companies	
Global connection	*Regional/multinational concentration* Accelerators in many countries share the local business practices of different countries and share in multinational implementation knowledge The worldwide offices facilitate mutual collaboration with potential international ventures or talented teams	*Regional/multinational concentration:* There are Accelerators with overseas presence in other countries, but there are limited cases of exit/follow-on investment through international mentors
Financial investment	*Investor funding* Investor pools consisting of individual investors, corporations and public organizations *Alternative business model of Accelerators* When a portfolio company attracts investment, the Accelerator acquires a certain commission and generates revenue. Accelerators hold various investment-related events and generate sales through ticket sales.	*Investor funding* Due to the gap between Accelerator and VC, even top Accelerator graduates are not linked to "fast-track access" to investment *Alternative business model of Accelerators* They are making efforts to hold various events, but not charging for ticket sales.

(*continued*)

Table V.

Resources	USA	Korea
Network relations	*Alumni network* Accelerators maintain a close relationship with graduated companies and, if possible, invite them to the program to share their experiences with portfolio companies Used as a reference case in an Accelerator program or engaged in mentoring activities *Support after the program* Provide ongoing support services after graduation There is incentive to provide continuous support because equity investment is made in the graduate company Successful graduates will continue to work as mentors or investors in the future	*Alumni network* Since many meaningful exits do occur, it is operated in the form of providing network and advice rather than acting as a tight professional mentor *Support after the program* Depending on the culture of each Accelerator, there is a difference in how to support after graduation A graduate is not usually willing to act as a mentor or investor before any meaningful exit (founders with exit experience are very rare to begin with)

traction after 2013, leaving insufficient time to gather enough such resources. Because of the lack of mentors who successfully launch and exit their business, Korean Accelerators tend to dwell on a supporting and facilitating strategy. Network relationships and institutionalized knowledge transfers enhance the likelihood of Accelerator's success in the USA. The start-up's necessary resources that are able to be fulfilled by the Accelerator is closely linked with the scope of interaction, quality of relationship and trust between mentor and start-up, which requires further research.

In the same token, unlike entrepreneurs in Korea, it is easier for high-potential start-ups to receive follow-on investments from angels and venture capital firms in the USA, as there are numerous investors and founders who earned money with through successful exits. In the case of a top accelerator, this network can be used as mentorship, advising, networking and maximizing the value of the portfolio company. Moreover, successful founders gathered to create an accelerating program, providing advice and networks suitable for start-ups in various respective industries in the USA. In the end, there is an insufficient number of successful founders in Korea. Therefore, various exit routes and the sheer number of exit events need to improve significantly to lead a smooth participation by a successful mentor pool of founders to embrace upcoming start-ups in their path to becoming unicorns.

Second, follow-on investment by VCs is also a key critical stepping stone to foster the survival of start-ups. The graduates of leading US Accelerators are readily accessed and funded given its proven track record of successful exits. In the case of Techstar, it has its own VC investment arm to cohesively capitalize on its graduates and provide long-term support. Likewise, founders of YCOM graduate companies gain access to participate in an angel investment opportunity selectively in other portfolio companies. However, graduates of Korean Accelerators are rarely successful in exits and do not show proven performance and potential, making it difficult to attract VC's attention and investment after graduation. In other words, follow-on investment by VC after a graduation from Accelerators does not work well in Korea compared to major Accelerators in the USA.

Third, large enterprises are more active in the selection and use of start-ups for new services in the USA. There is a large number of small- and medium-sized companies, and customers can be easily connected through a vast network of founders, alumni and VCs. IPOs and M&As are also widely accepted and executed with a high valuation even if profitability is low or in the red. In addition, selection processes are being conducted through online software platforms and rigorous multi-level processes by various types of external stakeholders participating in the interview and selection process in the USA. Therefore, successful entrepreneurs are required to participate in a virtuous cycle within the entrepreneurial ecosystem if they want to become new entrepreneurs as angel investors.

In addition, there are also similarities of Accelerators in Korea with those in the USA. First, it is an open but highly competitive application process that consists of exchanging equity through seed investment, intensive mentoring and training for a limited time, and is open to all. It is a systematic approach to controlling resources and reducing costs where similar activity is to have a Demo Day or Investor Day graduation ceremony. Second, it focuses primarily on start-ups and those based on technology rather than on individual companies, focusing on smaller teams rather than individual founders. Third, the process by which the Accelerator is managed and created is a collaborative effort between the mentors and the start-ups.

Based on the resulting information, Accelerators engage in a process of creating a new venture by way of securing resources, modeling the business concept and implementing an appropriate entry strategy into the market. Furthermore, other major resources and capabilities, including human resources, facility support, global connection, financial

investment and networks, are all integral to start-up success and need to be factored into the planning of the new venture.

Education plays a significant role in Accelerator program where the pools of mentors in the USA are successful start-up founders who provide potential solutions to identified market needs/problems. This is not often the case in Korea Accelerators as many mentors in Korea are usually from big conglomerates and investment firms rather than start-ups. The major difference is that not only do Accelerators from the USA provide a benefit in terms of reducing the time taken to engage with the market but they also enable, through process reconfiguration, the simplification of value delivery to the consumer. It is therefore important for entrepreneurs to be perceptive and adept at introducing cutting edge solutions that are novel and innovative if they are to succeed in launching a new venture.

The quality of globalizing knowledge activities depends on effectiveness, led by US Accelerator programs. Global offices facilitate mutual collaboration with potential international ventures or talented teams. Global connection provides operational benefits to companies and to the start-up innovation system. In a knowledge-based economy, the leverage of global organizational relationships can accelerate the flows of resources between organizations, improve the quality and quantity of knowledge and information acquired and strengthen the cohesion of related organizations. Building trust and network capital is crucial for supporting networking and thus effective interactive inter-organizational learning, which positively contributes to the innovation performance of both organizations and the nation.

Accelerators need to fit entrepreneurial firms' global contexts. Because there is no single route leading to the new venture's success or failure, Accelerators' strategies which consider only the relevance of the business environment in Korea may not be effective when new ventures try to globalize their businesses. From the proactive standpoint, Korean Accelerators cannot consider the domestic market and competitive landscape alone. They must develop international skills and knowledge of Acceleration to assist graduates to develop their international competence. In addition, globalization can push the standard of Accelerator quality and knowledge creation to a higher, world-class level. Korea has been producing a great number of patents, but most of these lack original value or the impact of foresight.

But if Korean Accelerators have the chance to collaborate with their successful foreign partners in leading and even developing economies and connect with international contacts, the generated experiences and knowledge can then be applied to the Acceleration of local graduates and generate a multi-directional knowledge spillover effect. Accelerators can even attract foreign entrepreneurial human resources through expanded Accelerator operations overseas. Therefore, Korean Accelerators can also seek the opportunities of international business collaboration and this will finally feed back to the Korean experience of innovation. This will contribute significantly to the overall competitiveness of Korean Accelerators.

In short, an interesting question is why technology start-ups are not well-proliferated in Korea. As seen in the findings of the research, the Accelerator landscape is limited, where mentorship, resources and investments are not readily accessible, resulting in low success rates for Korean start-up companies. These limitations have a negative trickle-down effect when providing entrepreneurs with strong access to resources and investors, which highly affects the success rates of early stage start-ups. Along with such limited exit options intertwined with a limited mentor pool, risk-sharing incentives and policy support for senior researchers need to be in place as well. Moreover, the government continues to create a start-up friendly environment, leveling the playing field by providing fairness among stakeholders in the entrepreneurial ecosystem. An innovation ecosystem that can mutually

benefit start-ups and large companies may act as a key driver where large corporations can receive a transfusion of new technologies and new products through M&A that lead to a sufficient exit environment (Isenberg, 2010). In addition, if a large company or a small- and medium-sized company participates in a venture investment, it is necessary to implement a policy by introducing an incentive mechanism, such as the tax burden reduction. We also believe that the key performance indicators such as ROI should be fundamentally modified to the sheer number of active investments to boost overall early stage investments. If most of the VCs, and Accelerators, are required to look primarily at the rate of return, being required to invest in a good company (or a proven company) will make it difficult to invest in an initial start-up. It is necessary to supplement and improve the venture ecosystem and reach a virtuous cycle. This urgent agenda needs radical change and must be recognized instead of focusing on short sighted moral hazards that may cause some disruption. It is necessary to see the forest for the trees and implement policy support for secular growth of the entrepreneurial ecosystem.

5. Conclusion and limitation

In the start-up ecosystem, Accelerators play a critical role in fostering entrepreneurship. The insights and skills they bring to emerging ventures are invaluable resources. The Accelerator is a good partner to help growth along with existing angel investors and venture capitals. What Accelerators, angels and venture capitals have in common are that they all try to reduce the trial and errors in start-ups. It is essential that experienced entrepreneurs acting as a mentor, who are the important asset in the entrepreneurship ecosystem, create balance and harmony to increase their chances of success.

In both Korean and US Accelerators, the program package consists mainly of offerings, which include mentoring, curriculum, counseling, Demo Day, office services and investment opportunities. Mentoring services are being offered across all Accelerators both overseas and in Korea. While there are some variations among them, experienced entrepreneurial talent is limited in Korea given that there is an insufficient number of exits in the start-up ecosystem. This paper aims to provoke an exchange of ideas by offering an introduction to and critical review of the comparisons, the need for improvement in Accelerators in Korea which is considered to be important policy tools for supporting innovation and the start-up ecosystem.

Although this study contributes meaningful implication for Accelerators in Korea by analyzing the differences in supporting major resources for growing start-ups, this study needs to improve in the following aspects. First, this study needs to conduct empirical analysis to show the statistical values of Accelerator. Second, although this study attempts to show comparative analysis for major cases of Accelerators in both Korea and the USA, an in-depth interview and detailed document research and clarifications of noted activities are required to conduct a future study. Third, we did not conduct a rigorous case analysis using the triangulation technique, a technique that uses two or more methods to identify the results of the same target. It is necessary to apply detailed case analysis in future research by applying specific analysis methodology.

As interest in the Accelerator phenomenon continues to grow, new research efforts should focus not only on these under-researched units of analysis but also on its impact on the death-valley implication in comparison with other types of support entities. Indeed, for our understanding of the Accelerator phenomenon to advance, we will need to unpack the variables associated with the incubation process and then use these variables to build, validate and test incubation process models that help predict and explain clearly defined Accelerator outcomes. Focusing on the process of the Accelerator rather than its

configuration will draw attention to the underlying causes of new venture development in an Accelerator environment. This, in turn, should lead toward additional theories regarding Accelerators.

Finally, some valuable questions should be asked and analyzed in subsequent studies such as, "Do Accelerators play a central role in the start-ups' economy?" and "Are such effects more pronounced for certain industry sectors and stages?" Moreover, given the limited information on Accelerator programs and its influences on a start-up company's survival, extensive research should be conducted in future studies to examine the success rate of start-ups when working with Accelerators. In conclusion, research on Accelerators in Korea is still a relatively new phenomenon as well, but because of its underlying importance as an innovative platform in the start-up ecosystem, we view the Accelerator as a concept of a platform that promotes innovation competitiveness in the entrepreneurial ecosystem.

References

Accelerator Leaders Forum (ALF) (2014), "ALF survey result", August.

Barney, J., Wright, M. and Ketchen, D.J. (2001), "The resource-based view of the firm: ten years after 1991", *Journal of Management*, Vol. 27 No. 6, pp. 625-641.

Bauer, S., Obwegeser, N. and Avdagic, Z. (2016), "Corporate accelerators: transferring technology innovation to incumbent companies", *MCIS 2016 Proceedings*, p. 57.

Chesbrough, H. (2003), "The logic of open innovation: managing intellectual property", *California Management Review*, Vol. 45 No. 3, pp. 33-58.

Christiansen, J.D. (2009), "Copying Y Combinator: a framework for developing seed accelerator programmes", MBA Dissertation, Judge Business School and Jesus College, Cambridge University of Cambridge, Cambridge.

Cinzia, B., Alberto, F. and De Toni, E.P. (2017), "Open accelerators for start-ups success: a case study", *European Journal of Innovation Management*, Vol. 20 No. 1, pp. 80-111.

Cohen, S. and Hochberg, Y.V. (2014), "Accelerating start-ups: the seed accelerator phenomenon", 30 March, available at: https://ssrn.com/abstract=2418000 or http://dx.doi.org/10.2139/ssrn.241800 Available at SSRN 2418000

Cooper, A.C. and Bruno, A.B. (1977), "Success among high-technology firms", *Business Horizons*, Vol. 20 No. 2, pp. 16-22.

Covin, J.G. and Slevin, D.P. (1989), "Empirical relationship among strategic posture environmental context variables, and new venture performance", *Frontiers Entrepreneurship Research*, Babson College, Wellesley, MA, pp. 124-133.

Dinah, A. (2011), "What are the new seed or venture accelerators?", *NBIA Review*, Vol. 1.

Ferreira, J.J., Azevedo, S.G. and Ortiz, R.F. (2010), "Contribution of Resource-Based view and entrepreneurial orientation on small firm growth", *Cuadernos de Gestion*, Vol. 11, pp. 95-116, doi: 10.5295/cdg.100185jf.

Fishback, B., Gulbranson, C.A., Litan, R.E., Mitchell, L. and Porzig, M.A. (2007), *Finding Business' Idols': A New Model to Accelerate Start-Ups*, The Kauffman Foundation, KS City.

Goswami, K., Mitchell, J.R. and Bhagavatula, S. (2018), "Accelerator expertise: Understanding the intermediary role of accelerators in the development of the Bangalore entrepreneurial ecosystem", *Strategic Entrepreneurship Journal*, Vol. 12 No. 1, pp. 117-150.

Grimaldi, R. and Grandi, A. (2005), "Business incubators and new venture creation: an assessment of incubating models", *Technovation*, Vol. 25 No. 2, pp. 111-121.

Hackett, S.M. and Dilts, D.M. (2004), "Systematic review of business incubation research", *Journal of Technology Transfer*, Vol. 29 No. 1, pp. 55-82.

Hallen, B.L., Christopher, B. and Susan, C. (2014), "Do accelerators accelerate? a study of venture accelerators as a path to success", *Academy of Management Annual Meeting Proceedings*, available on the Internet: http://proceedings.aom.org/content/2014/1/12955.abstract

Isabelle, D.A. (2013), "Key factors affecting a technology entrepreneur's choice of incubator or accelerator", *Technology Innovation Management Review*, Vol. 3 No. 2, pp. 16-22.

Isenberg, D.J. (2010), "How to start an entrepreneurial revolution", *Harvard Business Review*, Vol. 88 No. 6, pp. 41-50.

Jang, Y., Ko, Y. and Kim, S.Y. (2016), "Cultural correlates of national innovative capacity: a cross national analysis of national culture and innovation rates", *Journal of Open Innovation: Technology, Market, and Complexity*, Vol. 2 No. 1,

Kim, S.W. (2015), "The role and issue of accelerators in entrepreneurial ecosystem", *Science and Technology Policy*, Vol. 25 No. 6, pp. 2015.

Kirkley, W.W. (2016), "Creating ventures: decision factors in new venture creation", *Asia Pacific Journal of Innovation and Entrepreneurship*, Vol. 10 No. 1, pp. 151-167, available at: https://doi.org/10.1108/APJIE-12-2016-003

Lendner, C. and Dowling, M. (2007), "The organizational structure of university business incubators and their impact on the success of start-ups: an international study", *International Journal of Entrepreneurship and Innovation Management*, Vol. 7 No. 6, pp. 541-555.

Lin, J. and Nabergoj, A.S. (2014), "A resource-based view of entrepreneurial creativity and its implications to entrepreneurship education", *Economic and Business Review*, Vol. 16 No. 2, pp. 163-183.

McAdam, M. and Marlow, S. (2007), "Building futures or stealing secrets? Entrepreneurial cooperation and conflict within business incubators", *International Small Business Journal*, Vol. 25 No. 4, pp. 361-382.

Mayer, J.D., Roberts, R.D. and Barsade, S.G. (2008), "Human abilities: emotional intelligence", *Annual Review of Psychology*, Vol. 59, pp. 507-536.

Meyer, M. (2005), "Independent inventors and public support measures: insights from 33 case studies in Finland", *World Patent Information*, Vol. 27 No. 2, pp. 113-123.

Mian, S., Lamine, W. and Fayolle, A. (2016), "Technology business incubation: an overview of the state of knowledge", *Technolvation*, Vol. 50-51, pp. 1-12.

Miller, P. and Bound, K. (2011), *The Start-up Factories: The Rise of Accelerator Programs to Support New Technology Ventures*, NESTA, Rome.

Newbert, S.L. (2007), "Empirical research on the resource-based view of the firm: an assessment and suggestions for future research", *Strategic Management Journal*, Vol. 28 No. 2, pp. 121-146.

Ozdemir, S.Z., Moran, P., Zhong, X. and Bliemel, M.J. (2014), "Reaching and acquiring valuable resources: the entrepreneur's use of brokerage, cohesion, and embeddedness", *Entrepreneurship Theory and Practice*, Vol. 40 No. 1, pp. 49-79.

Pauwels, C., Clarysse, B., Wright, M. and Hove, J.V. (2016), "Understanding a new generation incubation model: the accelerator", *Technovation*, Vols 50/51, pp. 13-24, doi: 10.1016/j.technovation.2015.09.003i

Radojevich-Kelley, N. and Hoffman, D.L. (2012), "Analysis of accelerator companies: an exploratory case study of their programs, processes, and early results", *Small Business Institute Journal*, Vol. 8 No. 2, pp. 54-70.

Roberts, E.B. and Eesley, C.E. (2011), "Entrepreneurial impact: the role of MIT, foundations and trends in entrepreneurship", *Foundations and Trends® in Entrepreneurship*, Vol. 7 Nos 1/2, pp. 1-149.

Roure, J.B. and Modesto, A.M. (1986), "Linking prefunding factors and high-technology venture success: an exploratory study", *Journal of Business Venturing*, Vol. 1 No. 3, pp. 295-306.

Schwartz, M. (2013), "A control group study of incubators' impact to promote firm survival", *The Journal of Technology Transfer*, Vol. 38 No. 3, pp. 302-331.

Sobel, R.S. (2008), *Entrepreneurship: The Concise Encyclopaedia of Economics*, 2nd ed., Online Library of Economics and Liberty, Austria.

Srivastava, S., Sultan, A. and Chashti, N. (2017), "Influence of innovation competence on firm level competitiveness: an exploratory study", *Asia Pacific Journal of Innovation and Entrepreneurship*, Vol. 11 No. 1, pp. 63-75.

Wernerfelt, B. (1984), "A Resource-Based view of the firm", *Strategic Management Journal*, Vol. 5 No. 2, p. 171.

Wise, S. and Valliere, D. (2014), "The impact on management experience on the performance of Start-Ups within accelerators", *The Journal of Private Equity*, Vol. 18 No. 1, pp. 9-19.

Yusubova, A. and Clarysse, B. (2016), "Success factors of business accelerators in three European cities: Paris, London, Berlin", in Phan, P.H., Mian, S.A. and Lamine, W. (Eds), *Technology Entrepreneurship and Business Incubation: Theory, Practice, Lessons Learned*, Imperial College Press, London, pp. 35-56.

Corresponding author
Joo Yeon Park can be contacted at: park3500@naver.com