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**ACCELERATOR EXPERTISE:****UNDERSTANDING THE INTERMEDIARY ROLE OF ACCELERATORS IN THE  
DEVELOPMENT OF THE BANGALORE ENTREPRENEURIAL ECOSYSTEM**

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**ABSTRACT****Research summary**

To understand the intermediary role of accelerators in the developing regional entrepreneurial ecosystem of Bangalore, we analyze data from 54 interviews with accelerator graduates, accelerator managers, and other ecosystem stakeholders, and from 49 websites, 13 online video interviews, 26 online news sources and 301 pages of policy documents. Specifically, we adopt a socially-situated entrepreneurial cognition approach to theorize how accelerator expertise, existing at a meso-level, intermediates between (micro-level) founders and the (macro-level)

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ecosystem. In our model, four types of accelerator expertise—connection, development, coordination, and selection—together increase stakeholders’ commitment to the entrepreneurial ecosystem, leading to venture validation (success or failure) and ecosystem additionality. These findings indicate that accelerators contribute to ecosystems in a way that is distinct from, but supportive of, building individual ventures.

### Managerial summary

Accelerators are a new form of entrepreneurial support organization. These organizations typically focus on developing individual start-ups, but we find that they also help develop entrepreneurial ecosystems. They do so by acting as a bridge between start-ups and the broader entrepreneurial environmental resources, by 1) helping form connections, 2) helping develop individual start-ups, 3) helping coordinate the right match among the various players in the ecosystem, and 4) helping select mentors and founders with the appropriate motivation and knowledge. As these accelerators apply this expertise in this go-between role, they help build commitment to the broader ecosystem. Furthermore, they enable success (or fast failure) of individual start-ups and do so in a way that develops the overall entrepreneurial capacity of the broader entrepreneurial ecosystem.

*Silicon Valley’s entrepreneurs failed to recognize the connection between the institutions they had built and their commercial success ... What appeared to both actors and the outside world to be the outcome of individual entrepreneurial achievement and competitive markets was in fact the result of a complex, highly social process rooted in an industrial community (Saxenian, 1994: 56-57).*

### INTRODUCTION

Notwithstanding the heroic portrayals of individual founders (e.g., Steve Jobs) or individual firms (e.g., Google), research supports an “ecosystem”-based view of entrepreneurship (Adner and Kapoor, 2010; Autio and Thomas, 2014; Moore, 1993). This view takes into account the dynamic interplay between macro-institutional factors and micro-individual actions (Van De Ven, 1993). As Saxenian (1994) highlighted, institutions situated in such broader ecosystems influence the success of entrepreneurial ventures. Past research has demonstrated the importance of institutions such as universities, incubators and government agencies in connecting various actors in an ecosystem (see Etzkowitz, 2008). Beginning with the establishment of YCombinator in 2005, accelerators represent another emerging institution that can play a transformative role in

the development of ventures and entrepreneurial ecosystems (Cohen and Hochberg, 2014; Gonzalez-Uribe and Leatherbee, 2015; Pauwels et al., 2016).

Because accelerators are a nascent phenomenon in entrepreneurship (Cohen, 2013b), much of the recent research has sought to understand what they are, what they do and whether they deliver on the promise to accelerate ventures (Hallen, Bingham and Cohen, 2014). Accelerators have been defined as “fixed-term, cohort-based programs, including mentorship and educational components, that culminate in a public pitch event, often referred to as a ‘demo-day’” (Cohen and Hochberg, 2014: 4). They are distinct from the broader policy tool known as Technology Business Incubation (TBI), which generally focuses on promoting technology transfer and diffusion of products, and which may or may not use accelerators as one of the many mechanisms for meeting these goals (Lamine et al., 2016; Mian, Lamine and Fayolle, 2016). For example, science parks and university technology transfer departments may also serve this purpose (Mian et al., 2016). Accelerators are further distinct from incubators in their structure and focus (see Cohen, 2013b; Pauwels et al., 2016). While incubator participation is often longer in duration, not necessarily competitive and is often funded through rental income or government funding for non-profits (Cohen, 2013a; Mason and Brown, 2014), the general purposes of accelerators include: (1) “identification of investment opportunities”, (2) “matching [of] customers with start-ups” and (3) “stimulation of start-up activity and economic development” (Clarysse, Wright and Van Hove, 2016; Pauwels et al., 2016: 8).

Despite significant progress toward understanding the structural (*what*) elements of accelerators—such as their components (Cohen, 2013b; Gonzalez-Uribe and Leatherbee, 2015; Mejia and Gopal, 2015) and purposes (Clarysse, Wright and VanHove, 2015; Yusubova and Clarysse, 2016)—there remains a limited understanding of their process (*how*) elements (see

Yusubova and Clarysse, 2016). Specifically, there is limited understanding regarding how accelerators can simultaneously develop both entrepreneurial ventures and regional entrepreneurial ecosystems (see Cohen and Hochberg, 2014)? Further, while there is extensive research on incubators' role in developing entrepreneurial ecosystems (Clarysse et al., 2005; Dutt et al., 2016; Mian, 1997; Phan, Siegel and Wright, 2005), there is limited research addressing accelerators' role in developing entrepreneurial ecosystems (see Clarysse et al., 2016).

In this paper, we adopt a process-focused lens and an interpretive qualitative approach (Denzin and Lincoln, 2005) to develop an inductive model (Strauss and Corbin, 1990) that explores the role of accelerators in the development of a regional entrepreneurial ecosystem. Because cognitive approaches have been found to be helpful in understanding entrepreneurial ecosystems (Nambisan and Baron, 2013), we turn to dynamic socially-situated cognition (Mitchell, Randolph-Seng and Mitchell, 2011; Smith and Semin, 2004) as a way of understanding the cognitive underpinnings of the intermediation processes (Howells, 2006; Kistruck et al., 2013), that accelerators can facilitate.

We thus address two primary research questions: (1) *how do accelerators affect venture success or failure?* and (2) *how do accelerators affect regional entrepreneurial ecosystems?* Our answers build on a model by Smith et al. (2009) that extends expert information processing theory to inform the interrelationships between analogous constructs at multiple levels of analysis (individual level and economy level) (Chan, 1998). Specifically, we embed accelerators at the meso-level of analysis as a way of understanding their socially-situated role (Mitchell et al., 2011; Smith and Semin, 2004) in ecosystem intermediation. This allows us to better understand *how* accelerators act as a socially-situated cognitive bridge between the “individual” and the individual's “context” (see Autio et al., 2014).

Through inductive research involving 54 interviews and a variety of published sources we aim to make three contributions. First, we contribute to the emerging literature on accelerators by elucidating “*how*” accelerators help develop ventures at the micro-level, increase commitment to the regional entrepreneurial ecosystem at the meso-level, and help develop ecosystems at the macro-level. Second, we contribute to the growing area of research that investigates the underpinnings of entrepreneurial ecosystems by highlighting the role accelerators can play in affecting performance outcomes related to venture validation (success or failure) as well as the development of the regional entrepreneurial ecosystem. Third, we contribute to entrepreneurial cognition research by offering a deeper understanding of the cognitive underpinnings of the socially-situated ecosystem intermediation processes that support such performance outcomes.

## **THEORETICAL UNDERPINNINGS**

### **Entrepreneurial ecosystems**

As the earlier Saxenian (1994) quotation illustrates, although individuals and markets matter, every “industrial community” contains complex social processes that also shape the outcomes of micro-level entrepreneurial action. To capture this complexity, scholars have called for more dynamic approaches to studying entrepreneurial processes (Phan et al., 2005; Smith et al., 2009; Van De Ven, 1993). Research along these lines included the initial work of Moore (1993) on business ecosystems, which in turn led to research on the importance of innovation ecosystems (Autio and Thomas, 2014; Nambisan and Baron, 2013) and regional entrepreneurial ecosystems (Ács, Autio and Szerb, 2014; Parthasarathy and Ranganathan, 2011). Mason and Brown (2014: 5) defined an entrepreneurial ecosystem as: “a set of interconnected entrepreneurial actors ... institutions ... and entrepreneurial processes which formally and informally coalesce to connect, mediate, and govern the performance within the local entrepreneurial environment.” In turn,

entrepreneurial ecosystems support the emergence of new firms through “the incessant formation of a multitude of specialized, diverse entities which feed off, support, and interact with one another” (Bahrami and Evans, 1995: 63). Thus, ecosystem-based views of entrepreneurship reflect a dynamic and socially complex aspect of action and interaction in the entrepreneurial process.

### **Socially situated cognition and expertise**

Another stream of research that emerged to address dynamic aspects of action focused on entrepreneurial cognition, or “the knowledge structures that people use to make assessments, judgments, or decisions involving opportunity evaluation, venture creation, and growth” (Mitchell et al., 2002: 97). Representing a variety of “complementary” perspectives that “spring from common roots” (Mitchell et al., 2007: 7), this research primarily includes: (1) the heuristics-based approach (e.g., Busenitz and Barney, 1997; Katz, 1992), (2) the perception/ entrepreneurial alertness-based approach (e.g., Busenitz, 1996; Gaglio and Katz, 2001), (3) the information-processing/ expertise-based approach (e.g., Baron and Henry, 2010; Mitchell and Chesteen, 1995), and (4) the effectuation-based approach (e.g., Sarasvathy, 2001). In this paper, we apply the information-processing/ expertise-based approach to explore how entrepreneurial processes are shaped by their situated context (Ucbasaran, Westhead and Wright, 2001). Specifically, we apply a process-focused entrepreneurial cognition lens that moves away from “seemingly static representations of abstract, disembodied cognitive structures (e.g., biases, heuristics, scripts, etc.)” toward a view of entrepreneurial cognition as embedded “within specific social situations, with specific social actors” (Mitchell et al., 2011: 774-775).

The socially-situated theoretical model that we adopt links entrepreneurial expertise, entrepreneurial commitment and new value creation through the commitment engagement

process: “the process whereby cognition affects ... commitment” (Smith et al., 2009: 822).

Similar to Smith et al., we view commitment as “a definable point in the value creation process” that “impels . . . a course of action” (2009: 820-821) and does so in a way that persists over time (Ghemawat, 1991: 14). Likewise, similar to Smith et al. (2009) we seek to understand how entrepreneurial expertise can lead to entrepreneurial commitment, which can lead to new value creation; but we do so primarily at the meso-level of analysis (House, Rousseau and Thomas-Hunt, 1995 ). Specifically, we see entrepreneurial accelerators as playing a key intermediary role in linking founders to their regional entrepreneurial ecosystems. This happens as accelerator expertise is applied to building commitment (see Gioia and Manz, 1985) through a meso-level commitment engagement intermediation process. This compositionally similar process<sup>1</sup> (Chan, 1998) represents a type of “cognitive coordination” (Foss and Lorenzen, 2009: 1202), with accelerators acting at the meso-level as socially-situated ecosystem intermediaries (see Gioia and Manz, 1985) between founders at the micro-level and the regional entrepreneurial ecosystem at the macro-level.

### **Ecosystem intermediaries**

In essence, intermediation represents a process that *connects* individuals or organizations within a specific context through knowledge and information (see Howells, 2006; McEvily and Zaheer, 1999). While socially-situated entrepreneurial cognition and the concept of intermediation are not explicitly linked in prior research, intermediaries have historically fulfilled the role of “important informal disseminators of knowledge” (Howells, 2006: 716). Thus, we see entrepreneurial cognition research on expertise development (Baron and Henry, 2010; Mitchell et al., 2000; Smith et al., 2009) as being especially compatible. In prior research, intermediation

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<sup>1</sup> “Composition models specify the functional relationships among phenomena ... at different levels of analysis... that reference essentially the same content but that are qualitatively different at different levels” (Chan, 1998: 234).



has taken a variety of forms. For example, “middlemen” are important informal disseminators of knowledge (Hill, 1967; Howells, 2006), “technology intermediaries” facilitate technology transfer (Knockaert, Spithoven and Clarysse, 2014), “network intermediaries” assist in the development of firm capabilities by providing access to expertise (McEvily and Zaheer, 1999), “social intermediaries” enable individual actors in emerging markets to transact (Sutter, Kistruck and Morris, 2014) and “institutional intermediaries” help address institutional failures in a specific situation (Armanios et al., 2017; Dutt et al., 2016). In our study, we seek to understand how accelerators act as institutional intermediaries in the developing regional entrepreneurial ecosystem of Bangalore, India.

## RESEARCH METHODS

### Research setting

As historical background, Bangalore began to emerge as a hub of defence, aeronautics and space research in the 1950s, and by the 1970s the State of Karnataka, of which Bangalore is the capital, had become a leading center in the electronics industry in India (Parthasarathy and Ranganathan, 2011). Although initial science and technology investments in Bangalore were mainly government-driven, increased autonomy for businesses and infrastructure support from the federal and state governments (Jain and Sharma, 2013; Parthasarathy and Ranganathan, 2011) soon paved the way for private industry participation. In 1983, Infosys, still a new company at the time, relocated to Bangalore from Pune. During the same decade, a number of multi-national corporations established a presence in Bangalore (e.g., Texas Instruments in 1985). Bangalore continues to attract skilled workers from Karnataka and four surrounding states, which together supply roughly 60% of India’s engineering graduates (Parthasarathy and Ranganathan, 2011). This human capital advantage, combined with Bangalore’s climate, cosmopolitan culture, social

capital networks, and the processes underlying knowledge spillovers (Parthasarathy and Ranganathan, 2011; Saxenian, 2000; Taeube, 2004) make Bangalore the world's second-fastest growing entrepreneurial ecosystem (Herrmann et al., 2015).

However, while Bangalore has one of the youngest pools of entrepreneurs compared to other ecosystems (Herrmann et al., 2015), this talent pool is still underdeveloped. Indeed, this is one of the reasons for the popularity of the accelerator model in India. Morpheus, the first accelerator in Bangalore, began in 2008—three years following the launch of Y Combinator in Silicon Valley (Cohen, 2013b)—and closed at the end of 2014. At the end of Fall 2016, there were 14 accelerators in Bangalore, four of which were created from April through August 2016. Given the newness of the accelerator phenomenon and the emergent nature of theory regarding both accelerators specifically and entrepreneurial ecosystems more generally, we employ an interpretive qualitative approach (Denzin and Lincoln, 2005), based on extant literature. In other words, rather than aiming for “untethered ‘new’ theory” building (Suddaby, 2006: 635), we use an exploratory, iterative process to offer an “elaboration of existing theory.”

### **Data collection**

To gain a dynamic and socially complex understanding of regional entrepreneurial ecosystems, we sought to involve a broad set of entrepreneurial actors in Bangalore. Thus, we purposively selected informants, including accelerator managers, accelerator mentors, start-up founders (accelerator graduates), entrepreneurship educators/ university representatives, and policy representatives. We began with the six accelerators operating out of Bangalore as of June 2014. Using information from the accelerators' websites, we created a list of graduates of these six Bangalore accelerators between December 2012 and June of 2014.

Data collection began in October 2014. We contacted each accelerator with a request to speak with an accelerator manager. Two informants (one with ties to two accelerators) provided first-hand interview data for three of the six accelerators. We also contacted a variety of accelerator graduates, aiming for diversity and information-rich examples to facilitate theory building (Eisenhardt and Graebner, 2007). Specifically, we looked for examples of success/ failure in raising funds; early/ late stage start-ups; business-to-consumer/ business-to-business focus; little/ extensive founder experience; generic/ niche focus of the accelerator; and accelerator association with local/ multinational corporations. Of the 38 accelerator graduates we contacted, a diverse set of 18 informants agreed to speak with us.

To ensure interview data captured the emergent nature of the Bangalore regional entrepreneurial ecosystem (including both successful and failed ventures), we contacted five more accelerators founded between June 2014 and March 2016. We talked with three accelerator managers and four graduates. Further, we went back to speak with the founder of Morpheus and with five<sup>2</sup> additional informants from our earlier set of accelerators, where leadership had subsequently changed. This resulted in data from four of the six original accelerators in Bangalore as well as four of the newer accelerators.

We also approached 25 individuals who were more broadly involved in the entrepreneurial ecosystem in Bangalore, including mentors, educators/ university representatives and policy representatives. Twelve consented to speak with us (three mentors, five policy representatives, four university/ entrepreneurial education experts). Further, at a conference related to entrepreneurial education policy for the State of Karnataka, we conducted 10 short interviews

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<sup>2</sup> One of these graduates was part of a virtual accelerator and was not physically located in Bangalore.

with other actors in the regional entrepreneurial ecosystem. Table 1 lists our informants and Table 2 describes the specific start-ups represented.

[Insert Tables 1 and 2 About Here]

To begin, we based our semi-structured interview questions on prior research relating to the components and purposes of accelerators (Cohen, 2013b). Specifically, we asked our first six informants about their background, mentoring received, cohorts, educational seminars, experiences with demo-day and other outcomes. The later semi-structured interviews were more focused on some of the key themes that emerged in the initial interviews, including informant background, status of ventures prior to joining the accelerator, experiences within the accelerator itself, counterfactual questions relating to what could be changed and finally a set of eight questions (akin to a Likert-type scale) about various accelerator design components.

The first author conducted all the interviews. The majority were conducted in person, and all were conducted in English, the language most often used for business in Bangalore. We interviewed 54 informants in total, conducting interviews until reaching saturation (Strauss and Corbin, 1998) in terms of first-order informant categories (discussed in detail in the next section). Following the interviews, we remained in contact with informants through social media and email. Additionally, we identified and analysed 49 websites, 13 online video interviews of actors within the ecosystem, 26 different online news sources and 301 pages of policy documents and industry reports. The use of multiple data sources helped not only in developing a nuanced and vivid understanding of the research setting, but also in triangulating data for enhanced validity and reliability (Jain and Sharma, 2013).

## Data analysis

The initial interviews with accelerator managers and graduates provided us with a preliminary understanding of the accelerator's role (the *what*), especially as it relates to providing expertise to founders and connecting them more broadly with the regional entrepreneurial ecosystem. The later interviews with accelerator managers, graduates from accelerators and other actors in the regional entrepreneurial ecosystem allowed us to better understand the process (*how*) elements related to the role of accelerators as intermediaries in a regional entrepreneurial ecosystem.

We used NVivo software throughout the process to assist us in organizing and consolidating the multiple first-order categories (Gioia, Corley and Hamilton, 2013). We also enlisted the help of four independent research assistants, who were otherwise not involved in the study, to individually come up with first-order categories from the data. These research assistants then met with two of the three authors as part of validating the first-order categories. Additional first-order categories continued to emerge as we continued to collect data. These were validated as two of the authors evaluated the data separately and then met together. These first-order categories reflect the voice of the informants in the data (see Gioia et al., 2013; Ko and Liu, 2015).

Two co-authors then considered how the first-order categories might be organized in terms of second-order themes that were consistent with extant theory and could be understood in terms of aggregate dimensions (Gioia et al., 2013). The resulting structure of first-order categories and second-order themes, along with their corresponding aggregate dimensions, are depicted in Figures 1 and 2.

[Insert Figures 1 and 2 About Here]

## FINDINGS AND CROSS-LEVEL, INTEGRATED MODEL

We adopt a process-focused lens to understand: (1) *how do accelerators affect venture success or failure?* and (2) *how do accelerators affect regional entrepreneurial ecosystems?* The emerging data structure (Figures 1 and 2) highlights four kinds of expertise that allow accelerators to function as meso-level intermediaries between founders and the regional entrepreneurial ecosystem: *connection expertise*, *development expertise*, *coordination expertise*, and *selection expertise*. Specifically, accelerators with this expertise can engage the ecosystem intermediation processes that best influence *commitment to the regional entrepreneurial ecosystem*, *venture validation (success or failure)* and *ecosystem additionality*. These aggregate dimensions form the foundation of our cross-level, integrated model, depicted in Figure 3. In the following sections, we describe our findings that emerge from the interviews with the informants. Additional quotations from informants can be found in Tables 3 and 4.

[Insert Figure 3 and Tables 3 and 4 About Here]

### Accelerator connection expertise

*Accelerator connection expertise* involves accelerators' capability to foster relationships between founders and the regional entrepreneurial ecosystem. Establishing connections is typically viewed as an essential aspect of what accelerators do. As is shown in Figure 1, two second-order themes in our data underlie accelerators' connection expertise: (1) frequency of interaction and (2) intensity of interaction (Knockaert et al., 2014).

Frequency of interaction involves learning through connections made during periodic reviews and a variety of formal and informal networking opportunities. Informants mentioned seminars and networking events, mentoring sessions and parties. With respect to the connections

accelerators seek to create, an informant noted, “*There were lots of people in the start-up ecosystem [with whom] we generally discuss our business and business ideas with, not in a very official, deep mentor relationship, but almost [in] an informal chat. So, through that ... always sometime or the other there is some seed of an idea or something somebody else is doing which ignites a spark in your brain*” (Start-up Jayanagar, online learning). Frequent opportunities for interaction thus enabled connections that built founders’ expertise.

Intensity of interaction refers to physical proximity and the unscheduled, unstructured opportunities that allow accelerator members to share ideas and encouragement in person. Our data highlight differences in intensity for accelerators run virtually compared to those requiring founders’ physical presence:

*I guess if I were in a normal office, I wouldn’t have done so much work ... because everybody is working ... Parties are really important ... We used to [solve] each other’s problems ... Whenever we’d get stuck we’d go to other start-ups and ask about that ... and also, every week there used to be some guy from the industry coming and giving a talk ... If it’s a physical accelerator and not a virtual accelerator, it always helps because we are pushed to excellence ... I think that being a part of accelerator, you get rid of [the Indian culture of not sharing ideas] because everybody is sharing ideas. It’s OK to share because you learn and grow together.* (Start-up HSR Layout, business website promotions)

For each of our founders, intense interactions from sharing a physical space, increased connections to the regional entrepreneurial ecosystem. We note that the extent to which these connections are facilitated will partly depend on whether the accelerator is a niche or generic accelerator. The difference between niche and generic is evident in the description of niche accelerators as having “*strong contacts*” (Start-Up Ulsoor, ridesharing) and providing more “*implementable advice*” (Start-up Frazer Town, sports and fitness) relative to generic accelerators.

Whether niche or generic, accelerators that foster frequent and intense interactions ultimately connect the founders to the regional entrepreneurial ecosystem, thus broadening the nature of

founders' experiences and enabling them to further enhance their expertise (see Gavetti and Levinthal, 2000). We therefore suggest:

*Proposition 1: Accelerator connection expertise is a necessary mechanism for enhancing founder expertise through linking founders to a regional entrepreneurial ecosystem.*

### **Accelerator development expertise**

Accelerators must also possess *development expertise*, or the capability to enable founders' growth and improvement by providing education sessions and other learning opportunities (see Gavetti and Levinthal, 2000). As is demonstrated in Figure 1, two second-order themes emerged from the data related to accelerators' development expertise: (1) formal education scripts and (2) informal education scripts. Both represent important aspects of entrepreneurial education (Honig, 2004; Robinson and Sexton, 1994).

Relating to formal education scripts, an accelerator manager described formal elements of the educational experience for entrepreneurs: *"You can't just randomly tell them [everything they need to know]... so we have structure there. And that structure is an 18-week structure ... first, a customer development workshop is done, and then we go into a second workshop which is kind of a technology workshop, and then it goes into a product workshop"* (Accelerator X). Feedback from the entrepreneurs regarding these formal sessions was mixed. Some of the informants in later stage start-ups (beyond three years from firm founding) felt ambivalent: the *"seminars around the basics of how to start a start-up ... were the things that we already learned in [an] MBA"* but *"there were certain things that we really, really liked and thought they were of value"* (Start-up Agara, internet-based advertising). Other founder informants recognized that not every session will benefit every founder because of founder team heterogeneity (see Vanaelst et al., 2006), yet still expressed enthusiasm. One informant described:



*[The value of education sessions] depends on what stage you are in because sometimes you know some of these things ... or you have already been through that or maybe you are not ready for it yet, so you are not quite open to it ... I think most of the seminars were fairly high quality based on the general discussions that I have had with my peers, the other start-ups. So who ever was involved was able to take something out of it. (Start-up Garuda, life sciences)*

A majority of our founder informants mentioned the benefits of informal education scripts—especially related to learning from cohorts and learning from others. One informant said that the cohort “*is one thing I am really happy to be talking about,*” going on to say that because “*we were the youngest team in the cohort ... we got to learn a lot from all these [senior] people. So everybody helped us, more than we helped them ... The peer learning was really good*” (Start-up Domlur, data collection and aggregation). Although this informant was part of an early-stage start-up, the positive sentiment surrounding cohorts was corroborated by informants from later-stage start-ups as well. Informal education also occurred through the program elements that encouraged founders to engage in market-focused learning. This informal learning was often embedded in the program structure of the accelerator, as one mentor described:

*We encourage you to go and meet actual customers in the market, not necessarily people whom you already have on your board, but new ones, new prospects. So, go talk to them and come back to us with the learnings ... [In] the pitch sections ... we let the entrepreneur learn the art of pitching ... to the ecosystem whether it is customers ... investors and to the external stakeholders ... So by doing all this ... then we have opened their eyes on to ... what they should do and how they should do it. (Accelerator X)*

Our data suggest that although formal training in the “basics” of starting a venture are needed, informal education scripts play an essential role in founders’ market-focused understanding of how to grow their businesses.

Mentoring is another essential element of the informal education. Specifically, accelerator managers seemed to recognize the potential limits of formal training and were working to better

utilize informal interactions to help bridge founders' expertise gaps. The importance of mentors in this informal training is illustrated in the following:

*I'll give you ... a real-life example ... take three individuals [let's call them Aarav, Diya and Reyansh] ... they are all very active with [our organization]. They all often sit together. [Aarav] ... His old boss which is [Diya] ... and his new investor [Reyansh] ... who's an [angel] investor into [Aarav's company] and also a board member. And you ask [Aarav] and say, "[Aarav], what do you attribute your success to?" And [Aarav's] answer is: "Eighty percent the informal know-how I got from [Diya] ... and 20% is everything else." (Regional-level Policy Informant 3)*

Specifically, accelerators' development expertise, transmitted through both formal and informal education scripts, seemed to enhance the effects of connection expertise on founder learning.

Thus:

*Proposition 2a: Accelerator development expertise is a necessary mechanism for enhancing founder expertise through providing founders an opportunity to gain new knowledge through both formal and informal means.*

*Proposition 2b: Accelerator development expertise amplifies the benefits that can be gained through application of accelerator connection expertise.*

### **Accelerator coordination expertise**

As described by informants in the previous section, founders tend to "align" to different topics based on their perceived needs. That puts the difficult onus on the founders to know what they do not know. *Accelerator coordination expertise* shifts the onus back to the accelerator.

This involves the accelerators' capability to enable fit and alignment between founders' interests and mentor/ accelerator capabilities. As is depicted in Figure 1, coordination expertise comprises two second-order themes: (1) cognitive proximity and (2) alignment. Both relate to communication and understanding (Bird, 1988; Nooteboom, 2000). Cognitive proximity (Nooteboom, 2000: 72) comes from a perceived fit between the mentor's experience or capabilities and the founders' needs. One informant described the newness of mentoring in the Bangalore entrepreneurial ecosystem as a challenge based in fit:

*People have just started mentoring start-ups, right? ... So nobody has experience being mentor ... So for [the accelerator] it was an experiment finding people who can help ... With the diversity of start-ups that were there it's difficult to find a mentor who had had prior experience in your kind of business. But that is understandable being that that was their first program, right? So now I think now they have gone to getting more people ... who have got prior experience in specific things. (Start-up Frazer Town, sports and fitness)*

An accelerator manager highlighted mutual interest as a requirement of the mentoring relationship: *"If the start-ups are really interested [in the mentors], they get back ... and it's a very hands-on mentoring that they seek"* (Accelerator Z).

Other founder informants reported that many of the mentors they worked with lacked experience or capabilities in the specific domain, and in many instances lacked recent (or even first-hand) entrepreneurship experience. One informant suggested that if accelerators *"could have gotten other entrepreneurs just ahead of us ... because they have just gone through it...they have clarity and they remember ... In 5-6 years, you forget all that stuff"* (Start-up Frazer Town, sports and fitness). Another informant compared the accelerator experience in Bangalore to an accelerator experience elsewhere in the world. He mentioned that what he really liked in the other accelerator was *"structure in mentorship ... you don't get assigned mentors randomly ... So the accelerator first seeks to understand what are your areas of weaknesses"* (Start-up HSR Layout, business website promotion).

The second-order theme of alignment refers to the correspondence of founder goals and priorities with mentor goals, regional priorities and accelerator goals. Such alignment is crucial in start-ups (see Bird, 1988). One informant discussed the need to:

*Consider the quality of mentors [and] ... Have certain very clear 'asks' before you go [into an accelerator] or at least formalize it in conjunction with the accelerator—the people who are going to help you. I think it's important to have that at the beginning of the program or start of the journey. (Start-up Garuda, life sciences)*

Another informant explained that different accelerators have different value propositions and capabilities. He suggested that the founders need to “*look at what you hope to get out of [the accelerator] and align yourself to the appropriate one*” (Start-up Lavelle Road, mobile/ social messaging).

But from the perspective of accelerator expertise, the primary onus for alignment falls on accelerators, not on founders. As another founder described: “*I think it is very important to have a dialogue upfront as to what you are expecting and what you think is going to come out of it. And there needs to be a good fit ... In some cases it did happen quite well*” (Start-up Ejipura, online customer engagement). This dialogue is grounded in accelerator coordination expertise. Without such expertise, the accelerators and founders can go through the motions of development and connection, but founders may still not gain the expertise they need to grow their ventures. By contrast, accelerators high in coordination expertise will optimally leverage their existing expertise in development and connection. We therefore suggest:

*Proposition 3a: Accelerator coordination expertise is a necessary mechanism for enhancing founder expertise through ensuring that founders have access to the knowledge that is specifically relevant and appropriate for them.*

*Proposition 3b: Accelerator coordination expertise amplifies the benefits that can be gained through application of accelerator development expertise and accelerator connection expertise.*

### **Accelerator selection expertise**

In our data, accelerator connection, development and coordination expertise were further bolstered by *accelerator selection expertise*, which involves accelerators’ capability to select individual mentors and founders who are sufficiently motivated and knowledgeable. While accelerator coordination expertise focuses on effective match-making thorough assessment of relative cognitive proximity and mutual alignment between mentor and the founder, accelerator

selection expertise focuses on gauging independent levels of motivation and knowledge of individual mentors and founders. Thus, as noted in Figure 1, four second-order themes emerged around accelerators' selection expertise: (1) mentors' motivation, (2) mentors' knowledge, (3) founders' motivation and (4) founders' knowledge (McMullen and Shepherd, 2006).

Ensuring mentor motivation can be a major problem for accelerators. While most accelerators boast a marquee list of mentors, founders often described negative experiences, as this one did: *"Unfortunately for me, I was assigned a mentor ... [who] was a high profile guy who would understand the whole thing [I was doing]. But he was a very busy person, so he got me assigned to someone below him, who had no clue about [what I was doing]"* (Start-up MG Road, 3D imaging). Although the mentor had some of the necessary knowledge, he apparently had neither time nor incentive to engage. Even managers of accelerators saw a need for better assessing mentor motivation:

*We also need to do a ... better job. Because when you have a ... well-known [accelerator] ... there is a tendency on the part of lot of people to come and associate with us as mentors. What I would ideally like to see is that the mentors really follow up and make themselves available, rather than just lend a name. We don't want names, but we want people to actually sit for that one hour.* (Accelerator X)

One founder informant touched on this by describing an accelerator program in North America he was familiar with, which paid mentors so that they would be financially obliged to invest time. In Bangalore, mentors predominantly serve on a voluntary basis and are not compensated monetarily.

Finding mentors with domain knowledge can also be a challenge—particularly in emerging ecosystems. As previously noted, the accelerators in our sample did not always select mentors with adequate expertise. One informant said his own firm had a good experience with their mentor, but *"for some of the other start-ups I felt that [the mentors] were not of much help to*

*them ... For B2C [business to consumer], as well I think [the mentors] don't have that much experience and expertise"* (Start-up Banasvadi, mobile security). Indeed, informants frequently noted that many mentors were corporate executives with no entrepreneurial experience, only information technology experience, and no exposure to up-and-coming fields such as education, healthcare, life sciences, or sports. Thus, the expertise of the accelerator in recruiting and motivating mentors with appropriate entrepreneurship experience is critical.

In terms of founders, we saw in the data the importance of selecting founders who are motivated to learn (McMullen and Shepherd, 2006)—and to act. Founders' coachability was mentioned by multiple informants (mostly accelerator managers and managers). For example, the manager of an accelerator emphasized this as a major selection criterion: "[Ideal founders are good at] *accepting the thoughts of what we bring across and what our mentor ecosystem brings across ... The coachable aspect of the entrepreneur becomes very important ... How coachable is the entrepreneur?*" (Accelerator X). We also saw the need for founders to be willing to act. As another informant described: "*So in an accelerator you will get all the feedback, all the advice, all the mentoring. But then you, as a leader, need to take [a] decision*" (Accelerator Y).

Relating to the second-order theme of founder knowledge, we saw the importance of selecting founders who have sufficient experience and knowledge around a potential business solution. As an informant managing an accelerator described: "*Hundreds of people get shortlisted ... then we go to the actual criteria of, you know, figuring out how unique the solution is from the Indian market perspective [and] how strong is the team*" (Accelerator X). The expertise required to select founders with the appropriate breadth of knowledge and experience, related to a solution that has market potential, is essential.

The existence of accelerator selection expertise thus provides a foundation for coordination expertise, development expertise and connection expertise to result in the development of founder expertise. We therefore suggest:

*Proposition 4a: Accelerator selection expertise is a necessary mechanism for enhancing founder expertise through ensuring that founders and mentors have the necessary motivation and prior knowledge to act.*

*Proposition 4b: Accelerator selection expertise amplifies the benefits that can be gained through application of accelerator coordination expertise, accelerator development expertise and accelerator connection expertise.*

*Proposition 5: Accelerator selection expertise, accelerator coordination expertise, accelerator development expertise and accelerator connection expertise combine as necessary and sufficient conditions for enhancing founder expertise.*

### **Accelerators as intermediaries**

In emerging regional entrepreneurial ecosystems, institutional voids are prevalent and continue to persist (see Armanios et al., 2017; Dutt et al., 2016). For example, in our sample in Bangalore, founders and even mentors frequently lacked expertise. Moreover, we saw substantial variance in accelerator expertise. Fortunately, we also saw how accelerator expertise enabled accelerators at the meso-level to better fulfil an intermediary role at both the micro-level (i.e., developing the venture), as well as at the macro-level (i.e., developing the regional entrepreneurial ecosystem).

In this way, accelerators meet Howells's (2006: 716) description of intermediaries as "important informal disseminators of knowledge" that can help address gaps in expertise or knowledge.

Building on a model of entrepreneurial expertise and commitment (Smith et al., 2009), we conceptualize ecosystem intermediation as a socially-situated process whereby expertise affects commitment and action in a regional entrepreneurial ecosystem. In the following sections, we discuss our findings related to three intermediation processes and their outcomes (as depicted in Figure 3).

## Ecosystem intermediation and commitment to the regional entrepreneurial ecosystem

The first ecosystem intermediation process we highlight is the *commitment engagement intermediation process* (cf. Smith et al., 2009). This process builds commitment by transforming the beliefs of individual actors associated with the accelerator in a way that enhances the shared *commitment to the regional entrepreneurial ecosystem*. At its core, commitment to the regional entrepreneurial ecosystem is dispersed and depends on the extent to which accelerator beliefs and expertise are distributed across various actors in the ecosystem and in the broader environment (see Mitchell et al., 2011). As Figure 2 highlights, this distributed element of commitment to the regional entrepreneurial ecosystem is evident in two second-order themes that emerged from the data: (1) situated accelerator understanding (Mitchell et al., 2011; Sarasvathy et al., 2008) and (2) distributed accelerator expertise (Mitchell et al., 2011; Mitchell et al., 2000).

The commitment engagement intermediation process occurs as accelerator connection expertise enables frequent and intense interactions that form the condensed networks for accessing financial, human, and social capital (see proposition 1). These connections are further strengthened through accelerator development expertise, which provides the appropriate formal and informal learning that enables the founder to leverage these connections (see propositions 2a-b). The benefits from development are then amplified through accelerator coordination expertise, wherein mentors and founders are matched appropriately to facilitate cognitive proximity and alignment (see propositions 3a-b). And finally, all of this is fuelled by the accelerator's selection of founders and mentors who have appropriate prior knowledge and motivation to take entrepreneurial action (see propositions 4a-b). We saw this commitment building process in the following description from an informant:

*Some of these vertical areas like healthcare and so on, what we have discovered is there exists a depth of [domain] expertise. But those are people who have so far not interfaced*



*with the entrepreneurial ecosystem. So that's one set of connections we are in the process of building. So for example people inside academic institutions or research labs or even large corporations... these are people who have done original research who have decades of experience in the space, but haven't really interfaced with the entrepreneurial ecosystem. So if you bring them in contact with the entrepreneurial ecosystem—that in itself is a huge value add. So that depth of experience and expertise becomes available to entrepreneurs, in some cases these folks get entrepreneurial ideas themselves. (Accelerator V)*

This example demonstrates how accelerator expertise can be used to connect and align people who are not currently inside the entrepreneurial ecosystem (e.g., people in research labs) with those who are (e.g., mentors and investors). The process of “interfacing” with the regional entrepreneurial ecosystem thus puts the accelerator in the role of ecosystem intermediary (cf. Howells, 2006; Kistruck et al., 2013). What appears on the surface as merely “bringing [others] in contact” is actually intermediation through a kind of “cognitive coordination” (see Foss and Lorenzen, 2009: 1202) of beliefs and actions between the various actors in a way that builds overall commitment to the regional entrepreneurial ecosystem.

In our data, we saw the second-order theme of situated accelerator understanding in the accelerators' acknowledgement that they need to adapt to the evolving conditions of the regional entrepreneurial ecosystem. In one case, an accelerator stopped providing educational seminars based on feedback from founders. In another case, an accelerator completely switched to a model in which they designed and operated accelerators for other corporate partners.

The second-order theme of distributed accelerator expertise appeared in transformed beliefs about sharing best practices and fostering collaboration amongst accelerators. For some informants, sharing and collaboration represented a commitment to the regional entrepreneurial ecosystem. One manager described how he did not see his accelerator as being in competition with other accelerators, but instead saw an opportunity to work together:

*It makes all the more sense for folks not to wear the hat of 'compete' but rather 'collaborate'. Because there is no need for an accelerator to compete. I mean, whom are we*

*competing against? There's nobody. Right? ... There is a lot of things that we can share, a lot of best practices that can be shared ... Because, there is a certain amount ... of good things that you bring to the table, there are certain things that we bring to the table.*  
(Accelerator X)

Another manager saw “a lot of collaboration [among accelerators]” where “everybody is interested in doing something together” and “there are ... many activities that you plan together ... many events, [and] conferences” (Accelerator Z). Through distributed beliefs, best practices, and expertise, accelerators both manifest their own commitment to the ecosystem and strengthen the commitment of other actors in the system. We therefore suggest:

*Proposition 6: The commitment engagement intermediation process leverages accelerator expertise to improve situated understanding and to share distributed expertise, so as to increase overall commitment to the regional entrepreneurial ecosystem.*

#### **Ecosystem intermediation and venture validation (success or failure)**

The second ecosystem intermediation process we highlight is the *venture development intermediation process*. This process builds on accelerators' expertise and their commitment to the regional entrepreneurial ecosystem to help founders gain quick and relevant feedback as well as access to financial, human, and social capital. Positive and/or negative feedback results in *venture validation (success or failure)*, which is evident in informants' use of terms such as having the “right people,” gaining “confidence,” learning through “experiments,” and choosing to “fail fast or fail cheap.” One informant invoked the process by describing his need for validation from the accelerator:

*When I joined [the accelerator] ... that was one of the most difficult times, right, because ... I was the only one doing it and I just moved to another city and suddenly your expenses started going high ... Because I didn't have a product ready, I didn't have a customer ... so I was in a phase ... thinking am I doing things right, am I doing things wrong, what should I do? So, it wasn't very clear on my thoughts also and confidence.* (Start-up Frazer Town, sports and fitness)

Often a strong need for validation and clarity underlies founders' expectations and objectives for joining accelerators. Uncertainties that founders face include whether the founders have the right idea, the right product, the right customer segment, the right geography, and the right team members; and whether the founders should stay the course or pivot. The same informant continued:

*"We validated [a] few assumptions, which was good. Then we pivoted. We learned from that and then we pivoted to a wider segment focussing on events, but more on bookings rather than engagements on fixtures and schedules ... Then we had another pivot after the warehouse, now we're focussed on bookings, but more on venues."* (Start-up Frazer Town, sports and fitness)

Later, based on accelerator feedback, this informant changed not only the focus but also the name of his company.

Thus, through the venture development intermediation process, founders make ongoing, critical improvements that allow their businesses to succeed. As demonstrated in Figure 2, two second-order themes emerged from the data relating to venture validation (success or failure): (1) entrepreneurial team development (Clarysse and Moray, 2004; Vanaelst et al., 2006) and (2) opportunity development (Ardichvili, Cardozo and Ray, 2003; De Koning, 2003).

We saw the second-order theme of entrepreneurial team development in the founders' efforts to build a venture team. As one informant described:

*"When we joined [the accelerator], we already were in contact with few of the publishers in [named country] ... But we didn't have any contacts in [the] Indian market. And the main reason to join [the] accelerator was that they have got huge contacts and networks and connections. So they can help us reach out to them ... It was a bit harder for us to reach out to them directly, but they coming [in a partners matchup] and listening what we do ... that actually geared up our confidence ... and made us reach out to them in a better way."* (Start-up Banasvadi, mobile security)

As another informant likewise noted, the venture development process assisted them in adding the right people to the team: *"Our first problem was to find some good technical person since*

*[on] our core team nobody was from a software background, so we understand this is a problem with our sector ... We want people who can refer us to some good technology people ... So, both the cohort members as well as the core team at [the accelerator], referred us to many people”*

(Start-up Domlur, data collection and aggregation). The challenge faced by this informant was a gap in expertise that they sought to fill by adding people to the founding team (Clarysse and Moray, 2004; Vanaelst et al., 2006).

Entrepreneurial team development can also occur in accelerators through deliberate practice (Baron and Henry, 2010; Mitchell, 2005), for example, “through observation of the actions and outcomes of others” (Baron and Henry, 2010: 57). As one informant described: “*We had these talks scheduled ... we had different people coming up ... some could be technical, some could just be experienced with other successful start-ups ... some could be HR related [seminars] and team building [seminars]*” (Start-up Neelasandra, online shopping).

We saw the second-order theme of opportunity development take shape as founders worked to improve their core business model. In opportunity development, accelerators enable individual founders to get quick feedback on their ventures from various mentors, investors, and potential customers, as a way of experimenting with various hypotheses about their ventures. One founder described how the accelerator pushed entrepreneurs to ask for feedback:

*In the first couple of weeks ... the goal is try to talk to as many customers as possible. B2C [business to consumer] start-ups are encouraged to talk to 100 customers where as B2B [business to business] companies are encouraged to talk to 25-30 customers. That sort of is the general aspect of it ... so that they had some kind of validation.* (Start-up Garuda, life sciences)

Opportunity development also occurs as various actors share with participants the lessons from past successes and failure. An informant provided this example:

*The seminars where people talked about the mistakes they made ... because it's always important to know what mistakes he had done and how did he rectify them. That was more*

*helpful than someone saying we have achieved ABCD ... Because we had our own set of targets, so whatever you have achieved is very different from what I want to achieve. What I want to know is where did they fail so that I don't repeat the same mistake.* (Start-up HSR Layout, business website promotions)

In focusing on developing the venture, accelerators help founders better understand how to “reach out [to] your customers, find out what their problems are, figure out ... how do you position your product” (Start-up Koramangala, device management and software services). As the prior discussion and Table 4 highlight, accelerators can thus provide the tools needed to expedite success or failure, while at the same time minimizing the costs of either. We therefore suggest:

*Proposition 7: The venture development intermediation process combines accelerator expertise and commitment to the regional entrepreneurial ecosystem to help expedite venture validation (success or failure).*

### **Ecosystem intermediation and ecosystem additionality**

The third ecosystem intermediation process we highlight is the *ecosystem development intermediation process*. This process combines accelerator expertise with increased commitment to the regional entrepreneurial ecosystem to transform the infrastructure (Venkataraman, 2004) of that ecosystem. Transformation reflects *ecosystem additionality*, which is defined as the ecosystem-level competence, expertise and networks that speed up venture validation processes in a regional entrepreneurial ecosystem (cf. Autio, Kanninen and Gustafsson, 2008; Clarysse, Wright and Mustar, 2009; Knockaert et al., 2014).

Ecosystem additionality is thus an ecosystem-level construct that is similar to (yet distinct from) the firm-level concept of second-order additionality (Autio et al., 2008). We suggest that ecosystem additionality results, in part, from engaging accelerator expertise and commitment to the regional entrepreneurial ecosystem, leading to an ecosystem-level “learning effect” (Clarysse et al., 2009: 1518). As Figure 2 highlights, two second-order themes emerged from the data

relating to ecosystem additionality: (1) the tangible infrastructure of entrepreneurship (e.g., government policies, capital markets, university programs, etc.) (Venkataraman, 2004), and (2) the intangible infrastructure of entrepreneurship (e.g., availability of role models, informal opportunities for learning, etc.) (Venkataraman, 2004).

The tangible entrepreneurial infrastructure in Bangalore can be evaluated in terms of both what exists *and* what is missing. From the perspective of what exists, we see the proliferation of accelerators as promising; as noted, four new accelerators joined the ecosystem between April to August 2016. From the perspective of what is missing, gaps in the Bangalore regional entrepreneurial ecosystem remain in terms of developing early stage discoveries/ ideas into later-stage start-ups. As a representative with the Ministry of Science and Technology said:

*Some of those discoveries are so good and so compelling but are not ... ready for industry to be taken up because of the early stage they are in ... even entrepreneurs will not take chance, because their validation will not take one to two years, validation takes four-five years, right? The proof of concept will come in four-five years, so... you cannot let those discoveries go away and fade away... can we validate that in a lab environment and the government can support it because of the very high risk nature that it stands.* (Regional-level Policy Informant 4)

Although the government provides some support, this support only represents the initial stages of the tangible infrastructure. At some point, the private sector also needs to contribute. The gap that exists in the tangible infrastructure to support the development of early stage discoveries/ ideas into later-stage start-ups, partly derives from the newness of the ecosystem. For example, one accelerator manager explained that angel capital is “*a very new concept*” in Bangalore. Enough people “*have sufficient funds to invest*” but for there to be a good market for angel capital in Bangalore, these potential investors “*have to look at the start-ups for the right reasons, they have to have a risk appetite.*” He went on to say: “*I think that is the place where a lot of maturity needs to come ... So everyone in the ecosystem obviously needs to grow themselves, the*

*funding aspect is something that needs a lot of attention”* (Accelerator Y). Ecosystem additionality is thus evident as government institutions and accelerators recognize their complementarities and the need to collaborate in building this tangible infrastructure:

*I would say with the government bodies, [it] is still coming up. The support that the private players seek from the government bodies [are] still in a very initial building stage. Not really very active. But yes, of course, even the government bodies have realized the value of the ecosystem ... They do actively approach us in certain things as well, but still it's in a very initial stage.* (Accelerator Z)

Cooperation among accelerators, themselves, as driven by commitment to the regional entrepreneurial ecosystem, also creates ecosystem additionality. This tangible aspect of the ecosystem development process occurs, as the Accelerator Z informant described, through the development of “*a common vision ... which is to accelerate growth, which is to foster innovation ... [and] to enhance the quality and the effectiveness of the start-ups*” (Accelerator X).

In our data, we saw the second-order theme of intangible infrastructure in the need for collaborative relationships among the various actors in the ecosystem. For example, this informant wanted stronger connections with business schools:

*It's like [a specific Indian educational institution], huge resource, completely disconnected with their entrepreneur ecosystem in India. That's not how MIT is, that is not how Stanford is, but that's what it is [in India]. So [Indian business schools] have become completely disconnected with the ... entrepreneur, [there's] some pretense activity, but that amounts to nothing. I am sorry to be so critical.* (Regional-level Policy Informant 3)

The desire for more collaboration among the government, universities, research institutions and accelerators came through strongly in our data. An accelerator manager expressed a need for the government to more actively partner in creating the intangible infrastructure:

*I think accelerators being a private initiative, can only make it to a certain level ... to take it from there to the national scale ... something big had to come in and the government of India has attempted to do that ... “Make in India” [and] “Start-Up India” [initiatives to encourage manufacturing or entrepreneurship] ... are both, kind of, at a very macro-level ... trying to encourage the trend and from a policy level, provide support for it. So I think it's a*

*very positive sign, it basically amplifies the signal even more for start-ups and it takes it to a different level ... there have [also] been nice changes in the taxation system.* (Accelerator T)

The importance of connection also occurs in terms of understanding the specific roles that angel investors and venture capitalists should play. That is, while there exists a need for markets for risk capital generally (as noted), it is equally important to develop stakeholders' understanding of these investor roles—another element of the intangible infrastructure. Our findings at the meso- and micro-levels emphasize the importance of role models, especially as it relates to the need to have alignment and cognitive proximity between founders and mentors. At the macro-level, an increasing number of accelerator graduates possess knowledge that can be modeled in the ecosystem to guide investors and founders.

While ecosystem development remains a work in progress for Bangalore accelerators, it is nonetheless clear that the accelerators viewed the development process as part of their broader mandate: *“For us, internally our metrics are all about what kind of impact we have made in the ecosystem ... will we be able to cultivate and drive good citizenship by getting good solutions to meet the [needs of the] local ecosystem”* (Accelerator X). This impact is manifest as ecosystem additionality. We therefore suggest:

*Proposition 8: The ecosystem development intermediation process combines accelerator expertise and commitment to the regional entrepreneurial ecosystem to result in increased ecosystem additionality.*

One interesting finding relates to the founders whose ventures “failed.” While we acknowledge the emotional and cognitive effects of failure (Shepherd, 2003), we repeatedly saw that failed ventures contributed to ecosystem additionality. At the time of our interviews, three out of the 22 informants had shut down their ventures after graduating from an accelerator, four others had changed their name and identity of their venture, and two additional informants had



seen their ventures acquired.<sup>3</sup> The founders of the three “failed” ventures were all now working for other start-ups in senior executive roles and were valued for the expertise they had built while working on their “failed” venture. As one founder described,

*[The start-up that I now work for] ... they allow me to be very entrepreneurial ... a lot of the [other] managers ... they come from different backgrounds ... many of them are B-school graduates ... but I think what I have that sort of differentiates me from them is that I have this experience ... so I know that if my gut says something then I should just go and implement it and be up for failures. So, we've done like a lot of experiments ... a lot of these experiments have given me zero sort of results but quite a few have been very successful. I think my [prior venture] made me a lot more courageous.* (Start-up Whitefield, mobility and transportation)

Similarly, the founder of Accelerator T explained how a failed venture that is supported by the experience in an accelerator can be helpful to the regional entrepreneurial ecosystem:

*[Anyone] who goes through one or two years of [experiencing entrepreneurship] becomes mature and expanded in his knowledge and can be an asset ... because then they go back and work for other start-ups. One of the things you see is that many start-ups ... have tried to hire big-big people from big-big companies and ... it's really bombed. Most start-ups really prefer to hire founders of start-ups who tried but things didn't work out. You know, a guy who has built a start-up can be a great CTO ... there is a lot of good coming from accelerators because they are creating a very good pool of human resources ... some of [the accelerator graduates] may go on to build companies, but many of them will become a part of that start-up industry, adding value in different ways ... because after founders, the biggest problem is to find good co-founders or good people.*

Without discounting the importance of venture validation success, we emphasize that venture validation failure *also* provides a benefit to the ecosystem. This benefit accrues through micro-level learning, an intermediate outcome that is reflected in (and adds to) ecosystem additionality at the macro-level (see Autio et al., 2008: 59; Knott and Posen, 2005). We therefore suggest:

*Proposition 9: Accelerated failure, as a consequence of accelerator expertise and commitment to the regional entrepreneurial ecosystem, contributes to ecosystem additionality, which in turn supports further entrepreneurial activity.*

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<sup>3</sup> However even amongst these two seemingly “successful” exits there was a nuanced difference. One of them was a “satisfactory” sale for a disclosed/ publicized \$ 15 million USD to a global multinational company, whereas the other was perceived as a “distress” sale for an undisclosed amount.

## DISCUSSION

In this study, we built on Smith and colleagues' (2009) model of entrepreneurial cognition to investigate how accelerators affect (1) venture success or failure and (2) the regional entrepreneurial ecosystem now emerging in Bangalore. Placing accelerators at the meso-level of analysis allowed us to explore their intermediary role in these development processes. Interviews with 54 ecosystem actors, along with a variety of published sources, informed our iterative, qualitative research method.

Our findings depict how accelerators act as meso-level intermediaries through a combination of connection, development, coordination, and selection expertise. Further, the cross-level, integrated model and propositions that emerged from extant theory and informant data provide a more nuanced understanding of ecosystem intermediation processes. Specifically, we describe the processes that enable accelerators to enhance expertise, commitment to the regional entrepreneurial ecosystem, venture validation (success or failure) and ecosystem additionality.

We found that accelerators in Bangalore do more than assist firms and founders; they also play a critical role in developing the regional entrepreneurial ecosystem. By enhancing stakeholder cooperation and founder knowledge, accelerators create ecosystem additionality even when the specific firms they sponsor are unsuccessful. We thus contribute to theory on the processes that support emerging regional entrepreneurial ecosystems.

### Implications for research

We believe our paper offers three primary contributions. First, we add to the emerging literature on accelerators, a relatively new development in entrepreneurship. As noted previously, research on accelerators has primarily contributed to understanding the various components and purposes of accelerators (the *what* elements). Our findings related to accelerator expertise begin to unpack

processual elements (the *how*). To the predominant discussions of connection and development, we add the dimensions of coordination and selection. Further, while prior work on entrepreneurial expertise has focused on expertise at the individual level (Mitchell et al., 2000; Reuber and Fischer, 1994; Seawright, Mitchell and Smith, 2008), the model that we propose embeds accelerator expertise at the meso-level of analysis. Specifically, we suggest that while each type of accelerator expertise is individually necessary at the meso-level, each type alone is not sufficient to influence accelerator performance outcomes of venture validation (success or failure) at the micro-level, or ecosystem additionality at the macro-level. In doing so, we highlight how accelerator coordination expertise and selection expertise amplify the effects of accelerator connection expertise and development expertise.

Our conceptualizations of accelerator expertise build on research that suggests cognitive coordination (Nooteboom, 2000) as a way to resolve problems related to relational risk. As Foss and Lorenzen described: “a (some would say *the*) problem of economics is that of coordination” (2009: 1203, emphasis in original). In an accelerator context, coordination expertise and selection expertise begin to resolve this problem. For example, we theorize that accelerator coordination expertise establishes the cognitive proximity between founders and mentors that allows development expertise and connection expertise to work effectively. Meanwhile, selection expertise helps to ensure both founders and mentors possess the basic motivation and knowledge needed to enhance founder expertise and contribute to venture and ecosystem development.

Second, we add to theory related to entrepreneurial ecosystems by highlighting the dual role accelerators can play in developing both ventures and ecosystems. We describe a venture development intermediation process that supports (1) entrepreneurial team development and (2) opportunity development, to result in (3) venture validation (success or failure). On the other

hand we observe that accelerators' expertise-building (Hallen et al., 2014) is not limited to the individual-level or firm-level. Rather, we see accelerators engaging in an ecosystem development intermediation process that achieves additionality by combining tangible and intangible infrastructure elements.

Third, we deepen understanding of the cognitive underpinnings of the socially-situated ecosystem intermediation processes. Our findings move beyond static representations of cognitive constructs to more dynamic portrayals (Mitchell et al., 2011) by demonstrating the importance of intermediation processes that are socially situated in nature and that engage with accelerator expertise to result in ecosystem additionality. In line with prior research on learning from failure (Cope, 2011; Knott and Posen, 2005), we find that accelerators can speed up failure to a nonetheless positive end: the founders of "failed" ventures can more quickly contribute their expertise in other areas of the entrepreneurial ecosystem.

While we acknowledge the distinctions between accelerators and incubators (Cohen, 2013b; Pauwels et al., 2016), we note prior research on incubator intermediation has also been based on interactive, bridging processes (Amezcuca et al., 2013; Etzkowitz, 2002). We see commonalities between the accelerator expertise that we propose and the relational connections (Baum and Oliver, 1991), interactive processes (Etzkowitz, 2002) and normative alignment (Zimmerman and Zeitz, 2002) that occurs in incubators. However, we also find that accelerator expertise is more focused on providing access to expertise, and less focused on issues related to legitimacy, as discussed in the context of incubators by Amezcuca et al. (2013). Likewise, we saw limited evidence related to buffering (i.e., "maintaining a protective environment" [Amezcuca et al., 2013: 1632]) in an accelerator context. Additional research is needed to understand where and how accelerators are similar to and distinct from incubators as intermediaries in an ecosystem.

Future research should also seek to understand how incubators, as compared to accelerators, also may contribute to ecosystem additionality.

### **Implications for practice**

From a practice perspective, our research underscores the value of a highly interactive mode of knowledge transfer. According to our informants, the frequency and intensity of interactions—both with peers and mentors—help develop expertise. Thus, designers of entrepreneurial learning programs should place appropriate emphasis on informal modes of learning, especially in emerging contexts, where there are fewer role models and fewer curated interactions. Further, accelerators must be able to select appropriate mentors and founders, and should pair them based on cognitive proximity. In terms of identifying gaps, while the question “What is the founder’s domain experience?” is important, the question, “What is the mentor’s domain experience?” is equally important. Motivation, for both mentors and founders, matters as well.

More broadly, our findings suggest that accelerators need not be judged solely on the success of the participating firms. Some of our informants expressed a more negative perspective of accelerators. But that negative perspective predominantly looks at the role accelerators play in developing individual ventures. It misses the role that accelerators play in developing regional entrepreneurial ecosystems and contributing to ecosystem additionality. Indeed, as already noted, by speeding the failure of some firms, accelerators help develop the ecosystem. In this sense, our results suggest that government policy makers should judge accelerators based on their expertise; namely, their expertise in building connections, developing founders, coordinating mentorship, and selecting participants (both founders and mentors). These evaluation standards should benefit both individual founders and the broader entrepreneurial ecosystem.

## Limitations and future directions

Although our qualitative method provides rich data and helps us elaborate on existing theory (Suddaby, 2006), we acknowledge that our study is nonetheless limited. For example, our findings come from a single region: Bangalore, India. Compared to developing contexts like Mexico or Pakistan, Bangalore has a solid information and communications technology infrastructure and a strong business to business focus. We understand that every regional entrepreneurial ecosystem has its own idiosyncrasies, and generalizing from one ecosystem to another, need be done cautiously. Yet, as Pratt (2008: 496) argued, some forms of generalizability are particularly accessible through a qualitative approach:

Even though a fundamental drawback of most qualitative research is its lack of statistical generalizability, other forms of generalizability for qualitative research have been proposed. Yin (2003), for example, argues that case studies rely on analytical generalizability where data is generalized to a theory, not to a sample. Ecological validity argues that a theory must capture key contextual aspects of a theory for it to be relevant (Lee, 1999). And naturalistic generalization (Stake, 2000) argues that one can create a sense of external validity by recognizing how one case is similar to another. To illustrate, one can recognize an oak as a tree after seeing a maple tree.

In this sense, although our findings cannot be extrapolated to the population of entrepreneurial ecosystems generally, or even regional entrepreneurial ecosystems in developing countries specifically, our paper does capture these three other forms of generalizability.

In terms of analytic generalizability, we “provide evidence that supports (but does not definitively prove)” (Firestone, 1993: 17) theories of socially-situated entrepreneurial cognition. Ecological validity is high in our study as a result of data collected directly from a wide variety of context-specific actors, including experts on accelerators (founder participants, managers, mentors, etc.) and ecosystems (educators/ university representatives, investors, policy representatives, etc.). In our presentation of results, we enable naturalistic generalization (Stake, 1978: 6) by providing sufficient detail; that is, readers may consider our findings in light of their

own context-rich knowledge—such as their experiences with other ecosystem intermediaries that rely on expertise to address institutional voids (Mian, Corona and Doutriaux, 2010).

So, although we cannot (statistically) generalize our findings to these contexts, we do have evidence of a set of phenomena in one context that can be evaluated for similarity with other contexts. For example, a regional economy transitioning from a large-scale, specialized manufacturing base (e.g., parts of the Northeast and Midwestern United States) to one that is more entrepreneurial, might seem unlike Bangalore. However, decision makers might find some important similarities (e.g., a scarcity of mentors with niche subject matter expertise and experience in entrepreneurship).

Another consideration is our specific theoretical lens (Mitchell et al., 2011; Smith et al., 2009). Other lenses that likewise capture the importance of context—such as complexity theory, economic geography, institutional theory, or network theory—might also be applicable. Although these lenses are distinct from that used herein, through our use of socially situated cognition, we have nonetheless worked to also capture contextual aspects in our theorizing. Likewise, other factors may serve as starting points for accelerator expertise, such as legitimacy, social capital and financial capital.

To address the above gaps, we see opportunities for future research. Scholars could use various approaches to gauge accelerator expertise, capture ecosystem intermediation processes, and quantify the measurable outputs of venture validation (success or failure). Proxies for performance might include first customer, first pivot, profitability, and so on. In a similar vein, ecosystem additionality might be measured by the number of accelerator graduates working on other teams, serving as mentors, or actively investing capital in the ecosystem. New scales could capture the aggregate theoretical dimensions that emerged from our analysis—connection,

development, coordination, and selection expertise—as well as commitment to the regional ecosystem, venture validation (success or failure) and ecosystem additionality. To best account for the cross-level and dynamic nature of the phenomenon being studied, we would recommend a series of longitudinal research studies, comparative case analyses and historical approaches.

## CONCLUSION

In sum, we build upon a socially-situated model of entrepreneurial cognition (Smith et al., 2009) to describe the process (*how*) elements of accelerators in Bangalore, India. By studying what worked well and what did not in this developing regional entrepreneurial ecosystem, we document what accelerator expertise looks like and how it can affect commitment to the regional entrepreneurial ecosystem, venture validation (success or failure) and ecosystem additionality. We note that accelerators in Bangalore are in many ways start-ups themselves, facing the same challenges that other start-ups face. But these accelerators also act at the meso-level to build the regional entrepreneurial ecosystem. Our findings suggest that as these accelerators continue to build their own expertise, and continue to engage in ecosystem intermediation processes, they will more fully benefit from the macro-level expertise that emerges as the ecosystem itself, continues to develop.



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## REFERENCES

- Ács ZJ, Autio E, Szerb L. 2014. National systems of entrepreneurship: Measurement issues and policy implications. *Research Policy* **43**(3):476-494.
- Adner R, Kapoor R. 2010. Value creation in innovation ecosystems: How the structure of technological interdependence affects firm performance in new technology generations. *Strategic Management Journal* **31**(3):306-333.
- Amezcuá AS, Grimes MG, Bradley SW, Wiklund J. 2013. Organizational sponsorship and founding environments: A contingency view on the survival of business-incubated firms, 1994–2007. *Academy of Management Journal* **56**(6):1628-1654.
- Ardichvili A, Cardozo R, Ray S. 2003. A theory of entrepreneurial opportunity identification and development. *Journal of Business Venturing* **18**:105-123.
- Armanios DE, Eesley CE, Jizhen L, Eisenhardt KM. 2017. How entrepreneurs leverage institutional intermediaries in emerging economies to acquire public resources. *Strategic Management Journal* **38**(7):1373-1390.
- Autio E, Kanninen S, Gustafsson R. 2008. First- and second-order additionality and learning outcomes in collaborative R&D programs. *Research Policy* **37**(1):59-76.
- Autio E, Kenney M, Mustar P, Siegel D, Wright M. 2014. Entrepreneurial innovation: The importance of context. *Research Policy* **43**(7):1097-1108.
- Autio E, Thomas LDW. 2014. Innovation ecosystems: Implications for innovation management? In *The Oxford Handbook of Innovation Management*, Dodgson M, Gann DM, Phillips N (eds). Oxford Press: Oxford, UK.
- Bahrami H, Evans S. 1995. Flexible re-cycling and high-technology entrepreneurship. *California Management Review* **37**(3):62-89.
- Baron RA, Henry RA. 2010. How entrepreneurs acquire the capacity to excel: Insights from research on expert performance. *Strategic Entrepreneurship Journal* **4**(1):49-65.
- Baum JA, Oliver C. 1991. Institutional linkages and organizational mortality. *Administrative science quarterly*:187-218.
- Bird B. 1988. Implementing entrepreneurial ideas: The case for intention. *Academy of Management Review* **13**(3):442-453.
- Busenitz LW. 1996. Research on entrepreneurial alertness. *Journal of Small Business Management* **34**(4):35-44.
- Busenitz LW, Barney JB. 1997. Differences between entrepreneurs and managers in large organizations: Biases and heuristics in strategic decision making. *Journal of Business Venturing* **12**:9-30.
- Chan D. 1998. Functional relations among constructs in the same content domain at different levels of analysis: A typology of composition models. *Journal of Applied Psychology* **83**(2):234-246.
- Clarysse B, Moray N. 2004. A process study of entrepreneurial team formation: The case of a research-based spin-off. *Journal of Business Venturing* **19**(1):55-79.

- Clarysse B, Wright M, Lockett A, Van de Velde E, Vohora A. 2005. Spinning out new ventures: A typology of incubation strategies from European research institutions. *Journal of Business Venturing* **20**(2):183-216.
- Clarysse B, Wright M, Mustar P. 2009. Behavioural additionality of R&D subsidies: A learning perspective. *Research Policy* **38**(10):1517-1533.
- Clarysse B, Wright M, Van Hove J. 2016. A look inside accelerators in the United Kingdom: Building technology businesses. In *Technology Entrepreneurship and Business Incubation: Theory, Practice, Lessons Learned*, Phan PH, Mian SA, Lamine W (eds). Imperial College Press: London, UK.
- Clarysse B, Wright M, VanHove J. 2015. A look inside accelerators. In *Nesta*: London.
- Cohen S. 2013a. What do accelerators do? Insights from incubators and angels. *innovations* **8**(3-4):19-25.
- Cohen S, Hochberg YV. 2014. Accelerating startups: The seed accelerator phenomenon. In *Available at SSRN 2418000*.
- Cohen SL. 2013b. How to accelerate learning: Entrepreneurial ventures participating in accelerator programs. University of North Carolina, Chapel Hill, NC
- Cope J. 2011. Entrepreneurial learning from failure: An interpretative phenomenological analysis. *Journal of Business Venturing* **26**(6):604-623.
- De Koning AJ. 2003. Opportunity development: A socio-cognitive perspective. In *Advances in Entrepreneurship, Firm Emergence and Growth*, Katz JA, Shepherd DA (eds). JAI Press: Greenwich, CT; 265-314.
- Denzin NK, Lincoln YS. 2005. *The Sage handbook of qualitative research*. Sage.
- Dutt N, Hawn O, Vidal E, Chatterji A, McGahan A, Mitchell W. 2016. How open system intermediaries address institutional failures: The case of business incubators in emerging-market countries *Academy of Management Journal* **59**(3):818-840.
- Eisenhardt KM, Graebner ME. 2007. Theory building from cases: Opportunities and challenges. *Academy of Management Journal* **50**(1):25-32.
- Etzkowitz H. 2002. Incubation of incubators: innovation as a triple helix of university–industry–government networks. *Science and Public Policy* **29**(2):115-128.
- Etzkowitz H. 2008. *The Triple Helix: University-Industry-Government Innovation in Action*. Routledge: New York.
- Firestone WA. 1993. Alternative arguments for generalizing from data as applied to qualitative research. *Educational Researcher* **22**(4):16-23.
- Foss N, Lorenzen M. 2009. Towards an understanding of cognitive coordination: Theoretical developments and empirical illustrations. *Organization Studies* **30**(11):1201-1226
- Gaglio CM, Katz JA. 2001. The psychological basis of opportunity identification: Entrepreneurial alertness. *Small Business Economics* **16**(2):95-111.
- Gavetti G, Levinthal D. 2000. Looking Forward and Looking Backward: Cognitive and Experiential Search. *Administrative Science Quarterly* **45**(1):113-137.
- Ghemawat P. 1991. *Commitment: The Dynamics of Strategy*. The Free Press: New York.
- Gioia DA, Corley KG, Hamilton AL. 2013. Seeking qualitative rigor in inductive research notes on the Gioia methodology. *Organizational Research Methods* **16**(1):15-31.
- Gioia DA, Manz CC. 1985. Linking cognition and behavior: A script processing interpretation of vicarious learning. *Academy of Management Review* **10**(3):527-539.
- Gonzalez-Urbe J, Leatherbee M. 2015. Business Accelerators: Evidence from Start-Up Chile. In *Available at SSRN*.

- Hallen BL, Bingham CB, Cohen S. Do Accelerators Accelerate? A Study of Venture Accelerators as a Path to Success? In Proceedings of the Academy of Management Proceedings. Available at.
- Herrmann B, Gauthier J, Holtschke D, Berman R, Marmer M. 2015. The Global Startup Ecosystem Ranking 2015. In *The Startup Ecosystem Report Series*. Compass.co.
- Hill C. 1967. *Reformation to Industrial Revolution*. Weidenfeld & Nicholson: London.
- Honig B. 2004. Entrepreneurship education: Toward a model of contingency-based business planning. *Academy of Management Learning & Education* **3**(3):258-273.
- House RJ, Rousseau DM, Thomas-Hunt MC. 1995 The meso paradigm: A framework for the integration of micro and macro organizational behavior. In *Research in Organizational Behavior*, Cummings LL, Staw BM (eds). JAI Press: Greenwich, CT; 71-114.
- Howells J. 2006. Intermediation and the role of intermediaries in innovation. *Research Policy* **35**(5):715-728.
- Jain S, Sharma D. 2013. Institutional logic migration and industry evolution in emerging economies: The case of telephony in India. *Strategic Entrepreneurship Journal* **7**(3):252-271.
- Katz JA. 1992. A psychosocial cognitive model of employment status choice. *Entrepreneurship Theory and Practice* **17**(1):29-37.
- Kistruck GM, Beamish PW, Qureshi I, Sutter CJ. 2013. Social Intermediation in Base-of-the-Pyramid Markets. *Journal of Management Studies* **50**(1):31-66.
- Knockaert M, Spithoven A, Clarysse B. 2014. The impact of technology intermediaries on firm cognitive capacity additionality. *Technological Forecasting and Social Change* **81**:376-387.
- Knott AM, Posen HE. 2005. Is failure good? *Strategic Management Journal* **26**(7):617-641.
- Ko WW, Liu G. 2015. Understanding the process of knowledge spillovers: learning to become social enterprises. *Strategic Entrepreneurship Journal* **9**(3):263-285.
- Lamine W, Mian S, Fayolle A, Wright M, Klofsten M, Etzkowitz H. 2016. Technology business incubation mechanisms and sustainable regional development. *Journal of Technology Transfer*.
- Lee TW. 1999. *Using qualitative methods in organizational research*. Sage.
- Mason C, Brown R. 2014. Entrepreneurial ecosystems and growth oriented entrepreneurship. *Final Report to OECD, Paris*.
- McEvily B, Zaheer A. 1999. Bridging ties: A source of firm heterogeneity in competitive capabilities. *Strategic Management Journal* **20**(12):1133-1156.
- McMullen JS, Shepherd DA. 2006. Entrepreneurial action and the role of uncertainty in the theory of the entrepreneur. *Academy of Management Review* **31**(1):132-152.
- Mejia J, Gopal A. 2015. Now and Later? Mentorship, Investor Ties and Performance in Seed-Accelerators. Paper presented at the DRUID Conference, Rome.
- Mian S, Corona L, Doutriaux J. 2010. Building knowledge regions in developing nations with emerging innovation infrastructure: evidence from Mexico and Pakistan. *International Journal of Innovation and Regional Development* **2**(4):304-330.
- Mian S, Lamine W, Fayolle A. 2016. Technology business incubation: An overview of the state of knowledge. *Technovation* **50-51**:1-12.
- Mian SA. 1997. Assessing and managing the university technology business incubator: An integrative framework. *Journal of Business Venturing* **12**(4):251-285.
- Mitchell RK. 2005. Tuning up the global value creation engine: The road to excellence in international entrepreneurship education. In *Advances in entrepreneurship, firm emergence and growth*, Katz JA, Shepherd DA (eds). JAI Press; 185-248.

- Mitchell RK, Busenitz L, Bird B, Gaglio CM, McMullen JS, Morse EA, Smith JB. 2007. The central question in entrepreneurial cognition research 2007. *Entrepreneurship Theory and Practice* **31**(1):1-27.
- Mitchell RK, Busenitz L, Lant T, McDougall PP, Morse EA, Smith B. 2002. Toward a theory of entrepreneurial cognition: Rethinking the people side of entrepreneurship research. *Entrepreneurship Theory and Practice* **27**(2):93-104.
- Mitchell RK, Chesteen SA. 1995. Enhancing entrepreneurial expertise: Experiential pedagogy and the entrepreneurial expert script. *Simulation & Gaming* **26**(3):288-306.
- Mitchell RK, Randolph-Seng B, Mitchell JR. 2011. Socially situated cognition: Imagining new opportunities for entrepreneurship research (Dialogue). *Academy of Management Review* **36**(4):774-776.
- Mitchell RK, Smith B, Seawright KW, Morse EA. 2000. Cross-cultural cognitions and the venture creation decision. *Academy of Management Journal* **43**(5):974-993.
- Moore JF. 1993. Predators and prey: A new ecology of competition. *Harvard Business Review* **71**(3):75-86.
- Nambisan S, Baron RA. 2013. Entrepreneurship in innovation ecosystems: Entrepreneurs' self-regulatory processes and their implications for new venture success. *Entrepreneurship Theory and Practice* **37**(5):1071-1097.
- Nooteboom B. 2000. Learning by interaction: absorptive capacity, cognitive distance and governance. *Journal of management and governance* **4**(1-2):69-92.
- Parthasarathy B, Ranganathan V. 2011. The role of regions in supporting the emergence and growth of Global Innovation Networks: the case of Bangalore, India. Paper presented at the 9th Globelics international conference, Buenos Aires, Argentina.
- Pauwels C, Clarysse B, Wright M, Van Hove J. 2016. Understanding a new generation incubation model: The accelerator. *Technovation* **50-51**(April-May):13-24.
- Phan PH, Siegel DS, Wright M. 2005. Science parks and incubators: observations, synthesis and future research. *Journal of Business Venturing* **20**(2):165-182.
- Pratt MG. 2008. Fitting oval pegs into round holes: Tensions in evaluating and publishing qualitative research in top-tier North American journals. *Organizational Research Methods* **11**(3):481-509.
- Reuber AR, Fischer EM. 1994. Entrepreneurs' experience, expertise, and the performance of technology-based firms. *IEEE Transactions on Engineering Management* **41**(4):365-374.
- Robinson PB, Sexton EA. 1994. The effect of education and experience on self-employment success. *Journal of Business Venturing* **9**(2):141-156.
- Sarasvathy SD. 2001. Causation and effectuation: Towards a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of Management Review* **26**(2):243-288.
- Sarasvathy SD, Dew N, Read S, Wiltbank R. 2008. Designing organizations that design environments: Lessons from entrepreneurial expertise. *Organization Studies* **29**(3):331-350.
- Saxenian A. 1994. Regional advantage: competition and cooperation in silicon valley and route 128. Cambridge, MA: Harvard University Press.
- Saxenian A. 2000. Silicon Valley's new immigrant entrepreneurs. *Center for Comparative Immigration Studies*.
- Seawright KW, Mitchell RK, Smith JB. 2008. Comparative entrepreneurial cognitions and lagging Russian new venture formation: A tale of two countries. *Journal of Small Business Management* **46**(4):512-535.

- Shepherd DA. 2003. Learning from business failure: Propositions of grief recovery for the self-employed. *Academy of Management Review* **28**(2):318-328.
- Smith ER, Semin GR. 2004. Socially situated cognition: Cognition in its social context. In *Advances in Experimental Social Psychology*, Zanna MP (ed). Academic Press: San Diego, CA; 53-117.
- Smith JB, Mitchell JR, Mitchell RK. 2009. Entrepreneurial scripts and the new transaction Commitment mindset: Extending the expert Information processing theory approach to entrepreneurial cognition research. *Entrepreneurship Theory and Practice* **33**(4):815-844.
- Stake RE. 1978. The case study method in social inquiry. *Educational Researcher* **7**(2):5-8.
- Stake RE. 2000. Case studies. In *Handbook of Qualitative Research*, Denzin N, Lincoln Y (eds). Sage: Thousand Oaks, CA; 435-454.
- Strauss A, Corbin J. 1998. *Basics of qualitative research: Techniques and procedures for developing grounded theory*. Sage Publications, Inc.
- Strauss AL, Corbin JM. 1990. *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. Sage: Newbury Park, CA.
- Suddaby R. 2006. What grounded theory is not. *Academy of Management Journal* **49**(4):633-642.
- Sutter CJ, Kistruck GM, Morris S. 2014. Adaptations to Knowledge Templates in Base-of-the-Pyramid Markets: The Role of Social Interaction. *Strategic Entrepreneurship Journal* **8**(4):303-320.
- Taeube FA. 2004. Proximities and innovation: Evidence from the Indian IT industry in Bangalore. In *DRUID Working Paper No 04-10*.
- Ucbasaran D, Westhead P, Wright M. 2001. The Focus of Entrepreneurial Research: Contextual and Process Issues. *Entrepreneurship Theory and Practice* **25**(4):57-80.
- Van De Ven AH. 1993. The development of an infrastructure for entrepreneurship. *Journal of Business Venturing* **8**(3):211-230.
- Vanaelst I, Clarysse B, Wright M, Lockett A, Moray N, S'Jegers R. 2006. Entrepreneurial team development in academic spinouts: An examination of team heterogeneity. *Entrepreneurship Theory and Practice* **30**(2):249-271
- Venkataraman S. 2004. Regional transformation through technological entrepreneurship. *Journal of Business Venturing* **19**(1):153-167.
- Yin RK. 2003. *Case Study Research*. Sage: Beverly Hills, CA.
- Yusubova A, Clarysse B. 2016. Success factors of business accelerators in three European cities: Paris, London, Berlin. In *Technology Entrepreneurship and Business Incubation: Theory, Practice, Lessons Learned*, Phan PH, Mian SA, Lamine W (eds). Imperial College Press: London, UK; 35-56.
- Zimmerman MA, Zeitz GJ. 2002. Beyond survival: Achieving new venture growth by building legitimacy. *Academy of Management Review* **27**(3):414-431.

## TABLES AND FIGURES

**Table 1. Bangalore entrepreneurial ecosystem**

Launch Year – Accelerators operating in Bangalore between January 2008 and August 2016 (Focus of the Accelerator)	
1. Early 2008 - Morpheus (no specific industry focus, exited in 2014)	9. 2015 – Numa (No specific industry focus)
2. End 2012 - Microsoft Ventures (Focus on technology)	10. Early 2016 - WRI India (Focus on addressing urban transportation challenges)
3. Early 2013 – Kyron (Focus on fin tech, education, media & retail)	11. Early 2016 - Bosch (Focus on auto tech, big data analytics)
4. 2014 - Target (run by Kyron mgmt./ Focus on retail)	12. April 2016 – Lowe's (run by Kyron management/ Focus on retail innovation)
5. 2014 – Pitney Bowes (based out of Noida/ Focus on mobile & data analytics, e-commerce, data integration and management)	13. April 2016 - Oracle Cloud (Focus on technology)
6. 2014 - GSF (Focus on technology)	14. June 2016 - Axis Bank (Focus on fin tech)
7. 2015 – T-Labs (Founded 2011, moved to Bangalore 2015/ Focus on technology, internet and mobile)	15. August 2016- Brigade Group (Focus on real estate, hospitality, retail and education)
8. 2015 – Axilor Ventures (Focus on e-commerce, enterprise and healthcare)	
<b>Ecosystem informants (54 interviews) –</b> <ul style="list-style-type: none"> <li>• 22 Founders (Accelerator Graduates – See Table 2 for details)</li> <li>• 10 Accelerator Program Managers (from six accelerators)</li> <li>• 12 Mentors, University representatives and Policy (Government) representatives</li> <li>• 10 Entrepreneurial Education Conference participants (educators and government-policy representatives)</li> </ul>	

**Table 2. Description of informant firms**

Start-up Informant	Business Type (Scale of Operations - Global or Local)	Industry/Domain Focus	Start-up Stage*	Stage of Product/ Solution	Team Size (at time of joining Accelerator)
Agara	B2B/ Products (Local)	Internet-based advertising	Very early	Prototype	2
Banasvadi	B2B/ Services (Global – Asia focus)	Mobile security	Very early	Prototype	2
Cox Town	B2B/ Products (Global)	Digital content management	Very early	Beta	3
Domlur	B2B/ Products (Local)	Data collection and aggregation	Very early	Idea	3
Ejipura	B2B/ Products (Global)	Online customer engagement	Very early	Beta	4
Frazer Town	B2C/ Products (Global)	Sports and fitness	Very early	Idea	2
Garuda	B2B/ Products (Global)	Life Sciences	Late	Live	6
HSR Layout	B2B/ Products (Global)	Business website promotion	Early	Beta	9
Indiranagar	B2C/ Products (Local)	Ridesharing	Very early	Beta	2
Jayanagar	B2C/ Products-services hybrid (Global)	Online learning	Very early	Beta	6
Koramangala	B2B/ Products (Global)	Device management and software services	Late	Live	22
Lavelle Road	B2B/ Products (Global)	Mobile/ social messaging	Late	Live	10
MG Road	B2B/ Products (Local)	3D imaging	Intermediate	Live	2
Neelasandra	B2B/ Service (Global)	Online shopping	Intermediate	Live	15
Cubbon Park	B2B/ Products (Global)	Big data analytics	Very early	Idea	2
Peenya	B2B/ Products (Global)	Social data intelligence	Intermediate	Live	3
Hoodi	B2B/ Products (Global)	Big data analytics	Early	Live	17
RT Nagar	B2B/ Products (Global)	Social commerce	Early	Live	12
Shivajinagar	B2B-B2C Hybrid/ Services (Local)	Healthcare	Intermediate	Beta	4
Ulsoor	B2C/ Hybrid Product-services (Local)	Ridesharing	Early	Beta	3
Whitefield	B2C/ Services (Local)	Mobility and transportation	Early	Live	2
Yelahanka	B2B-B2C Hybrid/ Product-services (Global)	Survey analytics/ market research	Early	Prototype	1

\* Very Early Stage (< 6 months), Early Stage (6 months - 1 year), Intermediate Stage (1 to 3 years), Late Stage (more than 3 years)

**Table 3. Accelerator expertise: Representative quotes**

Aggregate dimensions	Second-order themes	First-order categories	Representative quotes
<b>Accelerator Connection Expertise</b>	Frequency of Interaction (see Knockaert et al., 2014)	Milestone reviews  Networking events	“Every week ...there was a scheduled half-an-hour discussion with them... we used to discuss what we have worked around and what we are planning to do next week. And it was really helpful because at times ...they told us that you can reach out to this person and they connected us. And then they followed up like how exactly... how far have you went” (Start-up Banasvadi) “But you know [being part of a virtual accelerator] more frequent and more in person interaction would help us...”(Start-up Ulsoor) “Start-ups need to network. And I know of no place [in India] other than Bangalore which has almost every day two events connected to start-ups and on weekends as many as five events connected to start-ups” (Policy Informant 2)
	Intensity of Interaction (see Knockaert et al., 2014)	Virtual versus physical accelerator  Niche versus generic accelerator	“We already had a team and handful of customers and we were based out of Pune [while accelerator was in Bangalore]...we did not relocate....we didn't go through the entire agenda...interaction was limited [with cohort members]” (Start-up Ejipura) “I wish we were in a Subject Matter Expertise [non-generic] accelerator, right? Just creating a pool of mentors doesn't make sense. Now if you look at a verticalized [niche] accelerator they would have verticalized [niche] experts also” (Start-up HSR Layout) “...person was so busy...didn't help us. Gyan [platitudes] and no follow up. Having him as a mentor was good but experience wasn't consistent...” (Start-up RT Nagar) “For example, if Uber is coming out with an accelerator [ride-sharing], ya it will help me...[comparing with existing generic accelerators]” (Start-up Indiranagar)
<b>Accelerator Development Expertise</b>	Formal Education Scripts (see Honig, 2004; Robinson and Sexton, 1994)	Seminars-based learning	“We had a kind of orientation wherein we were taken through the basics of ...starting a start-up...basics of finance, basics of marketing, basics of branding” (Start-up Agara) “Being a single founder, I had my hands.. like full... I think, initially when we started we focussed on few things which weren't required ...at that stage where it doesn't matter, like.... numbers, I had no clue, right? We made three-year costing and revenues...it was all in the air” (Start-up Frazer Town)
	Informal Education Scripts (see Honig, 2004; Robinson and Sexton, 1994)	Cohorts-based learning  Contacts-based learning  Mentor-based learning	“It's a very informal process. I think that's the mistake many of the start-ups do, thinking that it is gonna be a structured process. It's not.” (Start-up Koramangala) “[Each week] one person from each start-up used to come and then tell everyone how [does the] week looked like for them, is it good/ bad... what's the experience for them... so it was kind of interesting to understand what's happening in a start-up which is completely different from you...” (Start-up Cox Town) “...there's a revolving door of people going in and out, from one to the other...either as employees or founders and more recently, investors” (Policy Informant 2) “There was a structured process, of course. But then, it did not prevent us from accessing the mentors on a more as need basis as well. So, we did a combination of both” (Start-up Lavelle Road)
<b>Accelerator Coordination Expertise</b>	Cognitive Proximity (see Nooteboom, 2000)	Fit between founder domain needs and mentor domain experience	“With the diversity of start-ups that were there, it's difficult to find a mentor who had had prior experience in your kind of business. Because, our business is also new...it is very hard to find people who've got experience in [our domain]” (Start-up Frazer Town) “...there were hardly any people in the accelerator who understood B2C or education. So, most of the feedback or suggestions we got were very generic and sometimes not even applicable to our business because, the nature of business is so different” (Start-up Jayanagar)
	Alignment (see Bird, 1988)	Founder/accelerator goals match	“There is no financial contribution from [our accelerator] ..a lot of things we need to do require some capital...so, waiting for six months for raising capital and then suddenly these things would not make sense....” (Start-up Ulsoor) “I think start-ups should understand whether they are ready for an accelerator or not. I think that's the most important thing that a start-up should figure out ...if they are building a product maybe it's not the right time...” (Start-up Cox Town) “[Differentiating between government priority on small and medium businesses and accelerator focus] The emphasis through accelerators and otherwise has been more...”

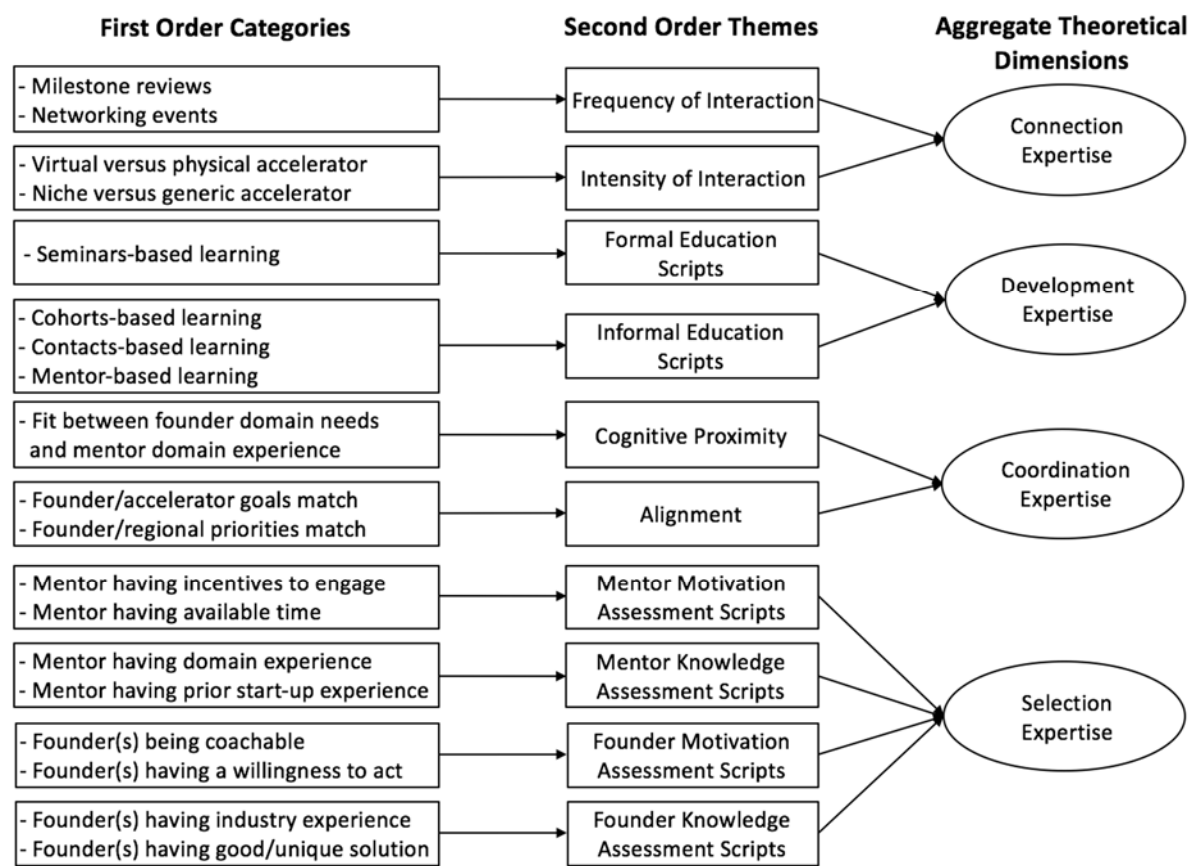
		Founder/regional priorities match	on the disruptive startups right now, they are sexier, right.... and it has been less on the SMB [small and medium businesses] startups.” (Policy Informant 3)
<b>Accelerator Selection Expertise</b>	Mentor Motivation Assessment Scripts (see McMullen and Shepherd, 2006)	Mentor having incentives to engage  Mentor having available time	<p>“One of the best mentor program in the entire world...[referring to a Canadian accelerator] ...there is a structure in mentoring...they sit with you and what are your areas of weaknesses.... let’s say you need help in HR. Then they connect to one HR person and the mentor gets paid for it. He is financially obliged, so he actually comes and gives you some time. He was paid by the accelerator and I don’t mind paying if there is ROI.” (Start-up HSR Layout)</p> <p>“Not a dedicated mentor... they had a full plate....one guy round robined amongst us...disappointing” (Start-up Cubbon Park)</p> <p>“Mentors were for namesake... very inaccessible” (Start-up Peenya)</p> <p>“The business mentor, I actually didn’t meet at all. He was a very busy person, travelling, and.... so we just did phone calls” (Start-up Jayanagar)</p>
	Mentor Knowledge Assessment Scripts (see McMullen and Shepherd, 2006)	Mentor having domain experience  Mentor having prior start-up experience	<p>“Unfortunately, we didn’t find a mentor in time ...very specifically because, there [are] not many [our niche industry] focused start-ups or companies in India.” (Start-up Garuda)</p> <p>“Mentor was very shallow... they had no idea of the product of any of the cohort. I wish my mentor had spent time understanding what I am doing” (Start-up Cubbon Park)</p> <p>“Their mentor’s list is mainly people who are working in [X] in some or the other field. And when it comes to B2C, they don’t have much experience ...they are mainly focused on enterprise...” (Start-up Banasvadi)</p>
	Founder Motivation Assessment Scripts (see McMullen and Shepherd, 2006)	Founder(s) being coachable  Founder(s) having willingness to act	<p>“The number one attribute in my opinion is coachability... the ability to change your mindset and course of action based on inputs that you get” (Accelerator V)</p> <p>“Need to have some commitment or passion [for] the idea. Display a reasonable amount of energy because it is going to be a long, painful, frustrating journey” (Educator 2)</p> <p>“The first thing is obviously a demonstration of the passion for the particular venture... how keen are they? How passionate are they?... Then comes their ability to demonstrate, or rather have a demonstrated ability of resilience....of being able to deal with crisis, things of that nature. Sort of in high pressure environments the ability to cope with it and execute” (Mentor 3)</p> <p>“It’s on every individual company to make maximum use of their mentors. It’s how much you engage with them” (Start-up Koramangala)</p>
	Founder Knowledge Assessment Scripts (see McMullen and Shepherd, 2006)	Founder(s) having industry experience  Founder(s) having a good/ unique solution	<p>“If you’ve been a software engineer all your life, and were starting something in diagnostics, then... you know it was unlikely you had any advantages” (Educator 2)</p> <p>“..what is their background and competence, and their capability to execute ..then comes obviously their educational and work experiences..” (Mentor 3)</p> <p>“...is this a good idea? Secondly, can it be a business? If it is a business, is this the team to take it to market” (Accelerator V)</p> <p>“They needed to do something that was truly innovative...second is, it had to make some sort of an impact...thirdly, it had to be an implementable idea” (Educator 2)</p>



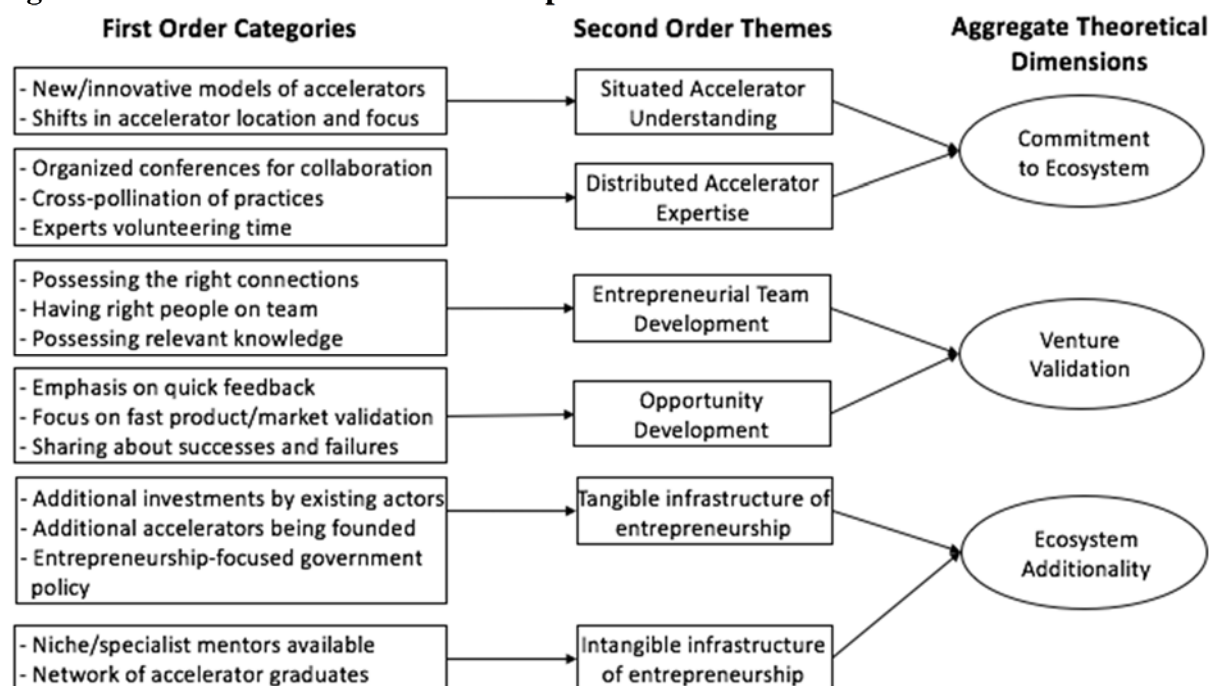
**Table 4. Ecosystem intermediation outcomes: Representative quotes**

Aggregate Dimensions	Second-order themes	First-order categories	Representative Quotes
<b>Commitment to Ecosystem</b>	Situated Accelerator Understanding (see Mitchell et al., 2011; Sarasvathy et al., 2008)	New/ innovative models of accelerators  Shifts in accelerator location and focus	“So the first decision I made is shut down the accelerator...so, we are [now] in the business of designing and operating corporate acceleration programs for large multinationals” (Accelerator Y) “We’re doing a residential one now [at that juncture this was a virtual accelerator]. A lot of this is understanding ...[what] works for different set of entrepreneurs as well” (Accelerator U) “...[start-up firms] are at different levels of readiness... their competencies are different... some are more mature...it is kind of impossible to put them altogether in one program and ...one single cohort and give them the same kind of mentoring... the benefits are, it’s like diluted” (Accelerator Y) “one of the small experiment that we are running, is a program called [ABC] – it’s a directed innovation challenge...the primary objective is to increase the number of experiments... this time we have selected [a particular disease]” (Accelerator V in an online interview)
	Distributed Accelerator Expertise (see Mitchell et al., 2011; Mitchell et al., 2000)	Organized conferences for collaboration  Cross-pollination of practices  Experts volunteering time	“Today... we are also hosting an incubator and an accelerator meet, for all the incubators/ accelerators around the country to actually come here and get to work together more to create a much larger impact on the ecosystem” – Microsoft Ventures ThinkNext Conference Summer, June 2016 (Source: YouTube) “But being in that environment we know that we are not only persons facing that environment, all of us are facing the similar problems whether it is a discussion on say, which is a best known platform to post our applications and getting those feedbacks from people who had already used saying these are the advantages and these are the disadvantages. Always there is some person to whom you can talk on the varied level of subjects.” (Start-up Domlur) “So, what these preparation sessions did was to give us feedback about, what are people perceiving our pitches, what are points of confusion. So, that was great because, not just the people who ran the accelerator but your mock presentations were attended by people from cohort as well. We got very rich feedback about, what’s wrong with our pitch and that we don’t even know and we could fix it.” (Start-up Jayanagar) “There are mentors and there are mentors... and very few of them are willing to roll up their sleeves and help the start-up. So, we make sure whoever is one of our mentors, somebody who has the domain, somebody who has the time, inclination and most importantly who is a believer in the ecosystem and wants to contribute” (Accelerator Y)
<b>Venture Validation (Success or Failure)</b>	Entrepreneurial Team Development (see Clarysse and Moray, 2004; Vanaelst et al., 2006)	Possessing the right connections  Having right people on team  Possessing relevant knowledge	“It’s the networking, it’s the connects. You get connected to the right people, you get connected to the right customers, right mentoring... that’s something we are looking at.” – (Start-up Neelasandra) “We wanted a little more local expertise...we wanted to get some connects and mentor connects for the network primarily, which is why we were here.” – (Start-up Koramangala) “...for my developers who joined me that was a big deal for them [referring to being part of this accelerator]. It also helped in giving moral boost to my employees. So that always helped in attracting and retaining talent.” - (Start-Up HSR Layout) “I think it was interesting to see how different people were in slightly different stages... no one was exactly the same yet there are some common underlying themes in terms of struggle to hire people, [etc.]” – (Start-up Garuda) “Although it was a lot of learning through sessions and stuff...you don’t get time to actually build a business... we also did work on things which weren’t required at that stage....working on numbers and stuff which wasn’t, I think required at that stage. It just wasted a lot of time.” – (Start-Up Frazer Town) “We were exposed to the tools ...for making our start-up fail fast or fail cheap.” – (Start-up Agara)

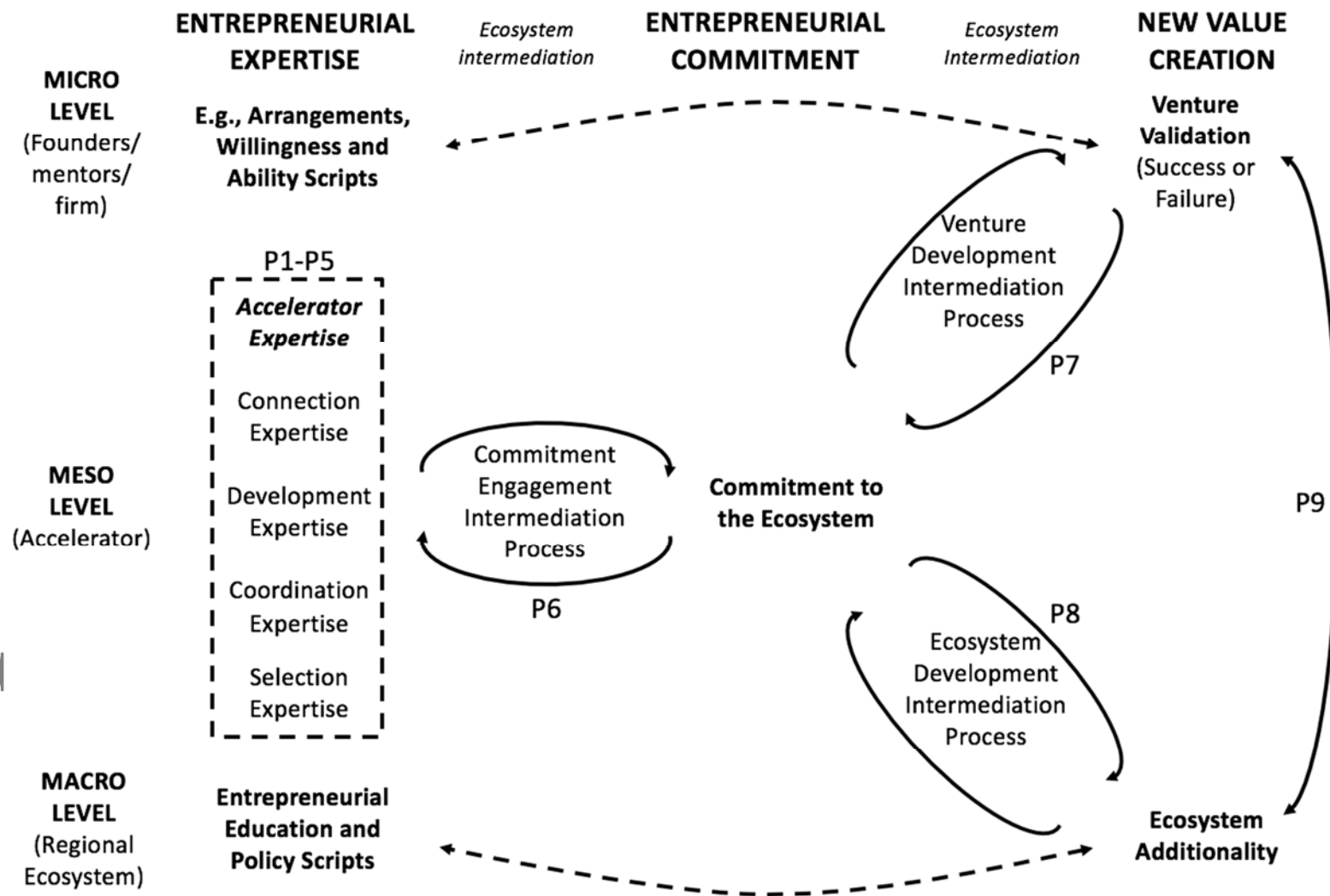
	Opportunity Development (see Ardichvili et al., 2003; De Koning, 2003).	Emphasis on quick feedback  Focus on fast product/ market validation  Sharing about successes and failures	<p>“That was the time when we used to read the user sentiments, launch something immediately, see whether the user is using and how is he using... we learnt a lot in those days” – Start-up Agara</p> <p>“What we were hoping to gain [from our accelerator]...how do we sustainably scale?... we really needed expert guidance on how do we streamline our operations... we were also trying to experiment with various business models” – (Start-up Whitefield)</p> <p>“Essentially [our] accelerator program is designed to help the start-up answer three questions...how do you know you are building something people want? In what form are they willing to consume it? How do you know they are willing to pay” – (Accelerator V)</p> <p>“..we encourage them to meet actual customers in the market. Not necessarily people whom you already have in the board but the new ones...[next]...technology workshop...then the product workshop... about how you manage your product...and what areas of product do you build. Do you solve the entire problems that are there in the ecosystem of your product or do you go surgical?” – (Accelerator X)</p> <p>“The end of the program is like, you have to have a clear picture of what you are doing, why you are doing and for whom are you doing it? And that's when we saw most of the pivots happening.” – (Start-up Cox Town)</p> <p>“That was a wonderful experience...being among other entrepreneurs, understanding their problems, see how they are going ...some of the failures that you face...people are often facing similar problems...getting those feedback” – (Start-up Domlur)</p>
Ecosystem Additionality	Tangible infrastructure of entrepreneurship (see Venkataraman, 2004)	<p>Additional investments by existing actors</p> <p>Additional accelerators being founded</p> <p>Entrepreneurship-focused government policy</p>	<p>“See, I think, first of all, this government for the first time has articulated that entrepreneurship is an important part of economic growth, which has never before been articulated [referring to the Govt of India Start-up India Policy]... While it is not entirely satisfactory, what it has done is that it has introduced the word start-up in the government lexicon... as we know, once something is added onto the government lexicon it is almost impossible to have it removed, so that's a big plus...” (Mentor 3)</p> <p>“Brigade Group Launches India's First Accelerator for Real Estate Start-ups” – CNBC-TV18 (27th Aug 2016)</p> <p>“Technology has revolutionized daily commutes... WRI India Sustainable cities launched the New Mobility Accelerator 2016...[for] early stage shared mobility businesses ... in partnership with Center for Innovation Incubation &amp; Entrepreneurship and supported by Shell Foundation &amp; Hewlett Foundation” – WRI India blog post</p> <p>“The State would invite the private sector including globally and nationally well-known accelerators and incubators to set up world class incubation centers and accelerators or expand existing facility /operations on PPP [Public Private Partnership] basis” - Karnataka Start-up Policy 2015-2020 (Bangalore is capital of the State of Karnataka)</p> <p>“Prime Minister Narendra Modi announced Action Plan for encouraging Start-Ups. Plan [includes]...funding support through fund-of-funds with corpus of Rs. 10,000 crores [Rs. 100 billion]...No tax on profit, inspection for three years...encouragement to incubation centres...” – Start-Up India, Stand-Up India Policy (January 2016)</p> <p>“... a common start-up portal and hotline, which could provide information on...incubators/ accelerators/ co-working space” - Karnataka Start-up Policy 2015-2020 (Bangalore is capital of the State of Karnataka)</p>
	Intangible infrastructure of entrepreneurship (see Venkataraman, 2004)	<p>Niche/ specialist mentors available</p> <p>Network of accelerator graduates</p>	<p>“The reason us joining [niche accelerator] was not money and all but primarily we were into the transportation space and we had strong contacts [through the accelerator] with local governing bodies... that would have been a big plus for us.” (Start-up Ulsoor)</p> <p>“If any start-up wants to join an accelerator, they should first look at alumni start-ups because they help start-ups a lot.... the other reason we should look at alumni is accelerator has itself worked them, so they know a bit of that field and they can further work with you and get you into.” (Start-Up Banasvadi)</p> <p>“When you have 60-64 people alumni, the beauty is that you find all varieties of people.. So the amount of mentoring that these guys have, these people have now seen success. So replicating their path may be a good idea for some of the start-ups or may be learning from mistakes what the other guy did. And we strongly encourage alumni also to sit in our accelerator as much as possible....at any point of time if you go and visit our accelerator, at least 5-10 % of people who are present will be alumnus who have come down to use our office space for something or who have come to meet the other start-up or to help the other guy.” (Accelerator X)</p>



**Figure 1. Data structure: Accelerator expertise**



**Figure 2. Data structure: Ecosystem intermediation outcomes**



Cf. Smith, Mitchell & Mitchell (2009)

**Figure 3. Cross-level, integrative model: The role of accelerators in the development of a regional entrepreneurial ecosystem**