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Paper to be presented at
the DRUID16 20th Anniversary Conference
Copenhagen, June 13-15, 2016

BUSINESS INCUBATION MODELS IN DEVELOPING COUNTRIES: EVIDENCE FROM EGYPT

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Abstract

We draw from resource dependence theory and literature on institutional voids and sponsorship to derive a conceptual framework that is subsequently corroborated on the basis of qualitative methodology, i.e. case studies of an appropriate sample of business incubators in Egypt. We posit that there is a necessity of two different incubation models in developing countries due to more severe institutional voids, and show evidence that they supply and facilitate different needs of entrepreneurs, in different stages of entrepreneurial life cycle. We further argue that the incubation model choice is contingent on the incubator sponsors, i.e. affiliation of the incubator, mainly through available resources and imposed objectives. Finally, we offer implications for policy makers who can use the findings to design the regulations in a way that will stimulate appropriate incubator creation and hence sustain entrepreneurship, as well as for incubator managers who can follow the findings to position their incubation model in line with their resources, capabilities and objectives.

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ABSTRACT

We draw from resource dependence theory and literature on institutional voids and sponsorship to derive a conceptual framework that is subsequently corroborated on the basis of qualitative methodology, i.e. case studies of an appropriate sample of business incubators in Egypt. We posit that there is a necessity of two different incubation models in developing countries due to more severe institutional voids, and show evidence that they supply and facilitate different needs of entrepreneurs, in different stages of entrepreneurial life cycle. We further argue that the incubation model choice is contingent on the incubator sponsors, i.e. affiliation of the incubator, mainly through available resources and imposed objectives. Finally, we offer implications for policy makers who can use the findings to design the regulations in a way that will stimulate appropriate incubator creation and hence sustain entrepreneurship, as well as for incubator managers who can follow the findings to position their incubation model in line with their resources, capabilities and objectives.

Keywords: Business incubators, incubation models, institutional voids, sponsorship, business capability development, market reach development

February 25, 2016

INTRODUCTION

Business incubators are established and diffused organisations, and they have been vastly studied to date. Research community has dwelt into theory of incubators and incubation models, as well as into their success factors (for an overview see Akcomak, 2009; Hackett and Dilts, 2004). One of the streams has focused on the evolution of business incubator models, and there is a wide consensus that incubation models changed over time (e.g. see an overview by Bruneel et al., 2012). Nevertheless, when depicting the evolution, the extant research surprisingly accounted for business incubators as relatively homogenous institution that has similarly developed regardless of the context. They also exclusively based the classification of incubators on data sourced from developed countries (e.g. Barbero et al., 2014; Grimaldi and Grandi, 2005; Pauwels et al., 2015). Although the majority of incubators are located in these countries (the United States and Europe), the authors usually neglected the inherent influence of the institutional environment on incubator dynamics. These trajectory almost deterministically point to only one final stage of evolution, allowing no coexistence of models “at the equilibrium”. Only since recently scholars have analysed business incubators dynamics while accounting for institutional context within which they operate (Dutt et al., 2015). We try to add to these efforts by offering a conceptual framework of business incubation models in developing countries, and argue how that is different from the mainstream view, which is largely based on the analysis conducted in more institutionally developed environments.

We follow approach of Amezcua et al. (2013), who draw on resource dependence theory to pose that business incubators act as *intermediaries* to incubated entrepreneurial ventures in response to the recognition that a *liability of newness* confines new ventures (Baum and Oliver, 1991). Incubators may influence entrepreneurial ventures in two ways. First, they may provide

resources to new ventures and by that buffer their dependency upon their external environment, which is a source of potential liabilities and threats (Lynn, 2005; Thompson, 1967). Second, incubators may bridge new ventures to their environment when needed, by facilitating relational connections (Baum and Oliver, 1991) and normative alignment (Zimmerman and Zeitz, 2002). The bridging role of incubator assists entrepreneurs in reaching resources that they need, but do not control either due to their scarcity or high costs (Azriel and Laric, 2008; Hackett and Dilts, 2004a). In sum, these two mechanisms are strongly dependent on the external environment.

Thereafter, drawing from the literature on institutional voids, we propose that countries characterised by a laggard institutional environment require more complex incubation models.¹ In particular, we contend that public goods such as fundamental knowledge (that is non-rival and non-excludable) or collective goods such as know-how and applied knowledge (that are non-rival and excludable) are critical to the very early stage of entrepreneurial life cycle. While they are taken for granted in many countries, their provision is affected severely by the presence of institutional voids (Boddeyn and Doh, 2011), in the fashion of market or governmental failures (Khanna and Palepu, 1997). These failures imply the need for incubation also in a very early stage of entrepreneurial life cycle, considerably earlier than in a more institutionally advanced context. By following the literature on life cycle stage model of new firms (e.g. McAdam & McAdam, 2008) we address this phase as a *nascent or pre-birth stage*, and argue that one incubator model should be tailored to the specific needs arising in that stage. The next stage of new venture development is defined as a *seed or start-up stage*, and we posit that another incubation model is required to support the new venture during this stage of development. The

¹ As explained by Boddeyn and Doh (2011, page 348), institutional voids are *failures* that refer to non- or sub-performance on account of factors that hamper organizations and individuals from fulfilling their functions. They are present in virtually all countries, yet they are particularly prominent in developing countries.

two proposed models are thought to be complementary to each other. While the latter correspond to the modern incubation model diffused in the developed countries, the former is a model that has sizable value only in institutionally void environments, and hence in most developing countries.

Finally, we consider the impact of incubator sponsorship on the incubation models. The literature suggests that the identity of sponsors will have a tangible and imprinting impact on the nature of incubator activities (Dutt et al., 2015). We posit that governmental, NGO-sponsored and academic incubators will focus on the first incubation model, and support chiefly entrepreneurial ventures in the nascent stage of development. On the other hand, we propose that private incubators will prioritise support to more mature business ventures, which are closer to the market. The differences arise from variation in the motivations and skills of sponsors (Amezcuca et al., 2013; Greenwood and Suddaby, 2006). The former group of institutions typically pursue non-profit objectives and have strong interest in spreading venture creation efforts, while the latter have profit-maximisation strategies and strong interest in fostering only the most promising and relatively advanced new business ventures. In other words, we propose that there will be a certain degree of *sponsorship specialisation*, that is *sponsorship division of labour*, reflected in focus on incubation models and stage of entrepreneurial life cycle.

We use qualitative research methodology in order to refine the theoretically derived conceptual framework and support the set propositions. In particular, we study business incubators in Egypt. Egypt is a developing country with a diverse business incubator industry that represents an appropriate test-bed for the proposed conceptual frame. The variety allows to thoroughly analyse five cases of Egyptian incubators covering all sponsorship types by relying on standard case study techniques.

The rest of the paper is organised as follows. The next section presents review of the relevant literature and develops the propositions. Methodology section elaborates on the analysis approach and the use of cases. We follow by presenting and discussing the main findings of the analysis. The paper is concluded with theoretical and practical implications, and proposed future research opportunities.

THEORETICAL DEVELOPMENT

Business Incubators and the Evolution of Business Incubation Models

The very first business incubator emerged in the late 1950s in the United States, yet it was not before 1980s that the concept diffused.² The initial wave of expansion included developed countries, mainly the United States, the United Kingdom and continental Europe. During the course of the last two decades, the number of incubators has significantly grown worldwide.³

The academic discourse on the topic has developed in parallel.⁴ According to the resource based view, incubators are described as an institution that possesses resources that can be

² According to National Business Incubator Association (NBIA), there were 12 business incubators in the US in 1980.

³ There are more than 7000 incubators worldwide nowadays estimated by NBIA. Some of the specialised incubators have recently developed a new label – *accelerators*. They are characterised by a more intensive and focused programme tailored to launch high-potential business ideas straight to the market in a relatively short and predefined period of time. The first accelerators were [YCombinator](#) and [TechStars](#), and they were founded in 2005 and 2006 in the United States (California and Colorado). Nonetheless, we comprehend them as a subtype of incubators.

⁴ As overviewed by Akcomak (2009), business incubator literature has emerged into two separate research streams. The first set of studies deals with the theory of the incubators and the incubator model, seeking answers to questions such as how incubators are formed, what their aims are, how they are planned, and how they are managed. The second set of studies evaluates performance of incubators based on certain factors that define success indicators. These works mainly focus on whether incubators have achieved their economic and technological goals in supporting entrepreneurs and small companies, and their wider goals in encouraging creation of new firms and jobs

complementary to the resources incubatees possess, and can share them with the incubatees without incurring substantial costs (e.g. Colombo and Delmastro, 2002; McAdam and McAdam, 2008; Rice, 2002). The evolution is described in three phases (Leblebici and Shah, 2004). Incubators in the first phase (1960s-1980s) had a rather simple value proposition of offering infrastructure (e.g. office space and shared resources) and leveraging economies of scale (Barrow, 2001; Lalkaka and Bishop, 1996). The second phase (1980s-1990s) was marked by the introduction of knowledge-based services. Incubators were offering training and coaching that would accelerate the incubatee's learning curve (McAdam and McAdam, 2008). Moreover, incubators became a popular economic development tool used by governments to promote the creation of new technology-based companies (Lewis, 2001). The third and the most recent phase started in the late 1990s, when incubators expanded their services to the systematic provision of links to the external stakeholders and legitimacy. The networking support facilitates access to technological, professional, and financial agents which would otherwise not be within reach of the new ventures (Bruneel et al., 2012).

Today, the literature conceptualises business incubators as intermediaries that stand in between entrepreneurial ventures and their business environments, and that create a context richer in resources through sponsorship aimed to support the new ventures (Amezcuca et al., 2013), relying on the reasoning of "organizational sponsorship" put forward by Flynn (1993). Incubators provide both direct supports by integrating incubatees into their networks, as well as increase legitimacy of the incubatees, which in turn helps new ventures accumulate additional, otherwise

and establishing an entrepreneurial society. Similarly, Hackett and Dilts (2004) examined the literature chronologically, and found five primary research orientations: incubator development studies, incubator configuration studies, incubatee development studies, incubator impact studies, and studies that theorize about incubators-incubation.

unreachable resources from various sources (Aaboen, 2009), and develop internal capabilities (Vohora et al., 2004). Business incubators represent also a buffer mechanism, which may shelter the incubated ventures from potential problems and risks stemming from the environment (Lynn, 2005; Thompson, 1967). This isolation from external threats allows incubatees to focus on development of their firms, whether competences, products, services or even their business model.

Most of the recent studies suggest that the incubation model of the last generation is established (e.g. accelerators) and should prevail in the future (Bruneel et al., 2012; Clarysse and Yusubova, 2014). However, the undertaken analyses were based on developed countries, and commonly draw the conclusions independently of the level of institutional development of the environment. Scholars have criticised this approach in general, showing that different institutional environments hamper replication of good practices (Levie et al., 2014).

Business Incubators in Developing Countries

In the developing world, despite sporadic efforts from governments to create business incubators in the previous decades, the trials typically failed. Only since recently have the business incubation activity started to grow noticeably, adding private incubators (mainly in the form of accelerators) into the arena too. Their success rate is still not great, while the most of the cases are yet to prove their effectiveness and longevity. As objectives and capabilities of business incubator depend on the institutional context (George and Prabhu, 2000), the origin of the laggard development might lie in the institutional slack (Hoskisson et al., 2000), and inappropriateness and inability to replicate models established in the leading developed countries. The literature suggests that a void institutional environment creates more severe challenges (i.e. market failures), which (among other ramifications) undermine and create

barriers to the formation of new companies, whose limits and liabilities are amplified even more in that context (Dutt et al., 2015; North, 1990). Underdevelopment of institutions is characterised by gaps in regulations, human capital, social norms, value chain and other structures in the entrepreneurial ecosystem (North, 1990). Therefore, understanding how incubation models can be better tailored to the institutionally void environment has a great potential for enhancing the entrepreneurship ecosystems.

The literature on incubators in developing countries is still to be consolidated. Apart from a few applied studies (e.g. Adegbite, 2001; Scaramuzzi, 2002), no convincing theoretical framework was suggested. Only very recently have Dutt et al. (2015) conducted a comprehensive study based on the analysis across developing countries and asserted that incubators can fill the institutional voids, while framing them as a type of intermediary between entrepreneurs and their environment. They claim that, depending on the advancement level of commercial institutional environment, incubators focus their services either on business capability development or on market infrastructure development. They show that more severe institutional voids will cause them to prioritise the latter. Unlike Dutt et al., we argue that the sole specialisation of services will not suffice for the sustainable support of entrepreneurs. Instead, we argue that more than one distinct incubation model will be necessary to cope with the severe institutional voids that make the process of new venture creation longer, more challenging and uncertain.

We adopt incubation model structure and boundaries of Smilor (1987), and combine them with the suggestions of InfoDev (2009) on the importance of synchronisation of business incubation model and entrepreneurial life cycle. In particular, following the literature on entrepreneurial life cycle, we recognise two distinctive and significant stages of organisational development (McAdam and McAdam, 2008), which have their own peculiarities and impose different burdens

on entrepreneurs. The first stage of organizational development is *nascent or pre-birth stage*, and it can be roughly described as a period from the decision to become an entrepreneur to the moment when a business idea is developed, a preliminary business plan exists, and ideally an entrepreneurial team is formed. During this stage only antecedent of an organisation exists, which resulted in organizational literature neglecting it (Beverland and Lockshin, 2001; O'Farrell and Hitchens, 1988). What follows is the so-called *seed or start-up stage*, which is characterised by an active engagement of the new venture in the market (introduction of products or services, access to seed capital, establishment of strategic partnerships, etc.). This stage is also more studied, as it represents a dominant stage of entrepreneurial life cycle in institutionally developed countries.

Business Incubation models in Developing Countries and Entrepreneurship Externalities

Relying on the knowledge spillover theory of entrepreneurship (Acs, Braunerhjelm, Audretsch, and Carlsson, 2009), Audretsch, Keilbach, and Lehmann (2006) develop a theory of entrepreneurship externalities valid for developing countries. They propose three major externalities in the case of entrepreneurship: knowledge, failure and demonstration, and network (see also Acs and Virgill, 2010). These market imperfections have different degrees of relevance for entrepreneurs depending on the stage of their venture development. First, institutional voids create a particularly profound gap in terms of knowledge production. Nascent entrepreneurs face the most severe burden is the development of their business capabilities, as they are still far away

from launching their products or services in the market.⁵ In other words, in an institutionally underdeveloped environment, building these know-how is not straightforward for entrepreneurs (Hoskisson et al., 2000). Consequently, the capabilities becomes extremely important as their possession represents competitive advantages for the new ventures (Dutt et al., 2015). This is a notable difference from the developed world, where access to knowledge is considerably higher and enables entrepreneurs to gain skills needed for new venture creation relatively easily. Moreover, during the nascent stage of the new venture development, externalities related to failures and demonstrations of entrepreneurship are extremely relevant too. Entrepreneurs learn from examples, and being surrounded by other new venture at the same stage of development, even if they are failures, is found to be advantageous for entrepreneurs (Audretsch et al., 2006). Likewise, early-stage entrepreneurs profit from controlled physical environment with shared administrative services that can shield them from high risk and liabilities, which are particularly severe when the institutions are not developed. These benefits mainly derive from economies of scale (Audretsch, 2005; Bruneel et al., 2012). Therefore, we propose that one incubation model should be focused on the nascent stage and offer mainly business capability development and infrastructural support, which can try to amend the corresponding market imperfections. Respectively to the name of the stage this model should address, we label it *nascent incubation model (NIM)*.

What follows in the entrepreneurial life cycle is the so-called *seed or start-up stage*, which also suffers from the voids in institutions, yet a specific type – commercial institutions. In particular, at this stage, new ventures need to cope with the rough market conditions where they need to

⁵ Business capabilities roughly comprise general managerial skills such as leadership, project management, and management of human resource (Fortune and Mitchell, 2012), and operational skills in finance, marketing and production (Hall, 1993; Zollo and Winter, 2002).

launch their products or services (Chakrabarti et al., 2011; El-Namaki, 1988). Void commercial institutions amplify the classic barriers to entrepreneurship (Busenitz et al., 2000; Gnyawali and Fogel, 1994). Regulatory conditions are typically not supportive of entrepreneurship. They enforce cumbersome bureaucratic procedures, increase risk for individuals starting new ventures, and impede entrepreneurs' efforts to acquire resources, yielding their increased liability and diminished competitiveness (Dutt et al., 2015; Katz, 2006). Furthermore, there is commonly a deficient access to capital and frail banking system that seriously hinder new ventures operations that have difficulties in raising funding (Aidis and Estrin, 2006). How entrepreneurs will cope with these issues depends strongly on their co-operative networks and social capital (Hansen, 1992). Entrepreneurs networks are, however, limited due to the network externalities caused by the institutional slack (Audretsch et al., 2006). Therefore, another independent incubation model is argued to be necessary. We propose that this model should be relatively similar to the advanced one that emerged in the developed world, often referred to as acceleration model (Clarysse and Yusubova, 2014). It should offer prevalingly market reach development (networking, marketing, sales, funding, etc.), boosting relationship potential of entrepreneurs. In coherence with the name of the stage this model should target, we title it *seed incubation model (SIM)*.

There are several reasons why there is a need for two separate models that will serve entrepreneurs during two different stages of their new venture development in institutionally void contexts (Bøllingtoft and Ulhøi, 2005). First, the two groups of new venture needs and matching supports are sequential – business capabilities are conducive for a successful market reach, and having the former first has a positive impact on the latter. Moreover, focusing on marketing, sales, funding and networking is extremely demanding and hardly allows time for

entrepreneurs to thoroughly work on their own skills. It would be rather challenging and highly inefficient to focus on both at the same time. Second, the two groups of activities differ considerably in their nature and level of impact, and require diverse sorts of supports that are not easy to provide simultaneously. For instance, support for business capability development is inherently focused on individual entrepreneurs, while the goal of market reach development is to improve business ventures and launch products or services to the market. The former is fairly internal activity and represent a kind of buffering mechanism (even though it can be provided by an incubator's external network). On the other hand, the latter requires exposure to external resources and stakeholders, and embodies a bridging mechanism. While we do not claim that there will be no overlaps between the two incubation models, it is hard to expect that a single one will be able to adequately account for different needs that occur along the entrepreneurial life cycle (Bøllingtoft and Ulhøi, 2005).

An additional remark should be made that, for a sustainable entrepreneurial ecosystem, the two incubation models and respective sponsors should coexist in a harmonised way. As Miller and Bound (2011) point out that accelerators create a pipeline of entrepreneurs for business angels and VC firms, incubators with nascent incubation model can create the pipeline for more advanced seed model programmes. Graduation from the nascent incubation model does not necessarily have to lead or prepare their startups for the market, but it can make them ready for a seed stage of their business development in another incubator. Accordingly, one could not expect the same success rate of incubated firms within this incubation model, and the metric for measuring these incubators' performance should be appropriate (e.g. a number of graduated firms that found got admitted to a later-stage incubator, i.e. accelerator).

Sponsorship of Business Incubators

Related to that, the sponsorship literature states that incubators' sponsors have different objectives, as well as access to diverse resources (Amezcuca et al., 2013; Greenwood and Suddaby, 2006). We propose that these differences in the nature of sponsors will result in their focus on separate incubation models. We single out two broad groups of incubator sponsors: non-profit and for-profit. The for-profit group consists of mainly private sponsors such as venture capital firms, private corporations and individual investors. The non-profit group of sponsors, in our perspective, includes governments and NGOs. Furthermore university sponsors may be a part of both groups, yet they typically belong to the non-profit one (Grimaldi and Grandi, 2005).

We outline here the main characteristics of each of the sponsors. Governments have interest in assisting entrepreneurship because new venture creation is considered an engine of job creation, new technological development and economic growth (Baumol, 1993; Carree and Roy Thurik, 2003; Haltiwagner et al., 2013). Nevertheless, due to limited expertise and misaligned motivations, they usually fail to provide meaningful support to incubated firms in terms of market reach development (Acemoglu and Verdier, 2000; Lerner, 2002). What they are better at is providing training and administrative support to entrepreneurs. Governments, even in developing countries, commonly have solid networks of specialists and experts, who can provide the necessary know-how, while they are also in position to offer publicly owned working space to entrepreneurs (Dutt et al., 2015).

NGOs, whose principal mission is the support of the socioeconomic development, have alike incentives to support entrepreneurship too. They usually have limited resources though, which restricts their capability to provide financial or market-related supports. Due to their knowledge

of and high degree of engagement with the local context, they can rather complement entrepreneurs in their efforts to design viable business ideas which are tailored to the local needs (Webb et al., 2010). Moreover, NGOs have relatively established identify and brand, which can be used to attract experts driven by the same causes. By involving the experts in different forms of training and mentoring, they may help new ventures in developing their knowledge (Dahan et al., 2010).

Academic institutions are motivated by dissemination of the knowledge created in order to spur economic development, and one of direct channels is support of entrepreneurs through sponsorship of incubator (Di Gregorio and Shane, 2003). Universities are cradles of knowledge creation and can clearly support entrepreneurs in developing their skills (Lockett and Wright, 2005). Moreover, they have facilities such as laboratories and workspace that can be shared between students, faculty and entrepreneurs (Bringle and Hatcher, 1996). On the other hand, university sponsors might lack financial capital and seldom are in position to provide funding for the new ventures (Dutt et al., 2015). Universities also emphasise theoretical research and academic teaching that are beneficial for strengthening fundamental skills, but that are not necessarily sufficient for dealing with the ongoing business reality. They are fairly disconnected from the surrounding business world dynamics, which limits their ability to help entrepreneurs in terms of market reach.

What is clearly common for governments, NGOs and academic sponsors is their mission. They are jointly interested in the economic development of their community, and not primarily in the profit generation. For that reasons, and in combination with their capabilities and resources, we argue that non-profit sponsors of business incubators will opt for the incubation model that is focused on the nascent stage and business capability development.

On the other hand, private sponsors such as venture capital firms or corporations by definition have profit maximisation as their main objective of operations. According to the nature of private investing industry and respective laws, private sponsors can appropriate their investments only through the invested firms, by taking an equity stake or a portion of revenues from them. However, there is a clear knowledge spillover type of market failure in supporting development of business capabilities, which are a sort of non-rival public good (Acs and Virgill, 2010, page 491). Investing in entrepreneurs and their skills does benefit the invested venture, but can also be easily misappropriated by opportunistic behaviour (for instance, entrepreneur may leave the current venture and start a new one) as there is no strict legal binding between the two agents, which leads to considerable underinvest (based on the transaction cost economics theory proposed by Williamson, 1979). Instead, private sponsors typically have a strict selection of already knowledgeable entrepreneurs, who are fairly equipped and skilled to develop their business ventures. Moreover, private sponsors are inherently connected to the market and essential resources for doing business. They are an integral part of the business networks, which allows them to provide support that is vital in the process of launching a new venture into the market (Bøllingtoft and Ulhøi, 2005). Therefore, we posit that for-profit sponsors of business incubators will opt for the incubation model that is focused on the seed stage and market reach development.

We depict the conceptual framework of incubator model development in Figure 1 for developed countries, and in Figure 2 the same for developing countries. While the former is well diffused and confirmed in the literature, the latter represents the novelty of this paper.

*** Insert Figure 1 and Figure 2 about here ***

METHODOLOGY

The Case of Egypt

We chose Egypt as an adequate case for the analysis for several reasons. First, it is a developing country with a slack institutional environment—both general and commercial institutional dimensions are underdeveloped—whose entrepreneurial ecosystem is emerging. Second, Egypt has a huge market coupled with a plethora of place-specific assets that can be used in creating new innovative businesses represents a great potential. Third, business incubator universe is still in an infant stage, while different types of sponsorship are present. There are NGO-, university- and private-sponsored incubators currently operating in the country. That allows holistic perspective on the business incubation activities and appropriate test-bed for the proposed conceptual frame.

As a concept, entrepreneurship is certainly not new in Egypt, yet it is a phenomenon that has recently taken on a new dimension, similarly to the majority of developing countries, particularly after the 2011 revolution. The percentage of individuals with an interest of becoming an entrepreneurs is rising (Lunani, 2013). Nevertheless, the local institutional environment is still not sufficiently developed to support sustainable high rate of entrepreneurship. Egypt ranks 131 out of 189 countries on the World Bank's Doing Business 2016 list. Legitimacy of being an entrepreneur is still fairly low, educational system and content are fairly traditional and do not empower youth to engage in entrepreneurial activities, while obtaining capital for the risky entrepreneurial activities is also a huge burden (Hattab, 2012). The unstable geopolitical situation is not encouraging either (Malik and Awadallah, 2013). Therefore, the need for business incubators, as an intermediary and a focused and relatively quicker remedy for the voids, has

been evident. Most of the early governmental efforts, which can be tracked back to 1990's, have not been successful.⁶ However, since recently more stakeholders have entered the arena, and there are multiple cases of both non-profit and for-profit business incubators that are proving to be viable. We focus on studying them to understand the role they play in the ecosystem, how they mend the gaps in the environment and support entrepreneurs in their endeavours.

Case Study Approach

In order to refine, adopt and corroborate the developed conceptual framework, we opt for a qualitative approach in the empirical analysis. The main reason for the choice stems from the fact that the universe of the investigation is rather limited, that is, the total number of business incubators in the country of interest is fairly low (no more than 10). We chose multiple case studies approach, a methodology also used in similar analyses of business incubators (e.g. Bruneel et al., 2012; Grimaldi and Grandi, 2005), which facilitates collection of detailed and rich data that enables in-depth insights into the complex phenomena (Yin, 2003). Moreover, this method is appropriate when attempting to externally validate the concept with a cross-case comparison (Eisenhardt and Graebner, 2007).

Sample

In particular, we examine five case studies of business incubators and their activities in Egypt. Given the size of the interest group and the aim of the analysis, we use an intentional, non-random approach in the sampling of the cases that included most of the relevant incubators in the

⁶ Global Entrepreneurship Monitor 2012 survey in Egypt reveals that the experts deem (at the time dominantly governmental) business incubators (and science parks) as ineffective support for new and growing firms. However, the experts also point that establishment of more (more efficient) business incubators is needed for the empowerment of local entrepreneurship ecosystem (Hattab, 2012).

country. Most importantly, we built the sample of incubators that comprises different sponsors (NGOs, universities and private firms or individuals), which is vital for understanding how different incubation models are contingent on sponsorship.⁷ Furthermore, the cases have heterogeneous features on the other levels significant for the analysis too (see *infra*). For instance, the portfolios of services they offer to their incubatees and the stage of development at which they admit new incubatees are varied in the sample. This allowed us to disentangle and carefully refine the archetypes of incubation models. We provide a brief overview of incubators included in the study in Table 1, which includes neutral facts that were preliminary available.

*** Insert Table 1 about here ***

Cases Study Protocol

Finally, we created a rigorous case study protocol and a structured database of the empirical evidence in order to increase the reliability of the study, that included data categorisation and contextualisation techniques (Miles and Huberman, 1999). We used this systematic procedure for data collection and analysis to improve the reliability of the research, always following suggestions of Yin (2003).

We followed introductions of the network of partners or direct contacts to get in touch with the incubators, and we implemented a two-step process in the study that included on average a 3-hour long visit to each incubator, but in one case when the interviewed person asked to meet the researcher out of the incubator. First, we had incubator managers fill in a specifically designed questionnaire with a broad range of covered topics, designed in line with the literature

⁷ We also tried to include a governmental business incubator in the study, however all the efforts to conduct the interviews were unsuccessful.

suggestions (Bryman and Bell, 2015; Fink, 2003). The questionnaire included seven sections and more than 100 relevant closed-ended questions that query about incubator activities and the environment. The questions asked about incubator business model and mission, internal organisation and relationship with external stakeholders, selection and graduation criteria, provided services, and local entrepreneurship ecosystem. Second, we organised follow-up semi-structured interviews directly with the general managers (and when possible with one other member of the incubator management), which were used to discuss in depth particular and the most interesting topics, such as motivations and strategies. We selected to interact with the managers because of their direct involvement in the strategy and operations of the incubators. During the interviews we followed a designed interview protocol, which allows consistent comparison of the findings across the cases.⁸

We also collected alternative data points from online press releases, social media (e.g. Twitter and Facebook), grey literature (official and unofficial report), interviews with non-affiliated yet knowledgeable experts (local academics, representatives of intergovernmental institutions, investors, etc.) and personal observations during the visits to triangulate the information. The triangulation process was used to diminish personal interpretation biases and afterward rationalization from the interviewed people, and by that to increase reliability of the findings (Yin, 2003). We decided to consider as reliable a piece of information only if we found confirmation in the data collected through secondary sources, as suggested by Miles and Huberman (1999).

⁸ The interviews were tape recorded, if not explicitly disagreed by the interviewee (in which case notes were taken).

We analysed the cases in two steps. First, we focused on each case separately in order to carry out within-case investigation. Second, we executed a cross-case comparison and interpreted the observed differences in light of the incubation models that were used.

In order to better understand the underlying patterns, the key aspect of each incubation model—services provided by incubators—were operationalized by assigning a set of distinctive features that characterise each of them. The list of these characteristics and criteria based on the relevant literature is provided in Table 2, and it was used extensively in the analysis of interviews. The codes were also mapped in the questionnaire, which was virtually straightforward, yet substantially helped in the process of cross-case comparison. In particular, following the broad literature we divide services intended to support incubated firms in three broad categories: infrastructure support, business capability development, and market reach development (Bergek and Norrman, 2008; Bruneel et al., 2012).

*** Insert Table 2 about here ***

Prior to studying the Egyptian cases, we executed two pilot studies in Italy to perfect the questionnaire and improve the interview protocol. We had visited one academic and one governmental incubator, and run the preliminary study with them. The process served in providing consistency (assuring the questions are precise and non-ambiguous) and validity (including all important aspects) to the main study. Additionally, we used the acquired knowledge about the cases from institutionally developed environment to refine the study framework.

In the further text, we complement the argumentations with quotes taken from the interviews and secondary data that were collected. Nevertheless, conducive to keep the reasonable length of the section, we do not put forward evidence of all the information sources that were used to support

each argument. Last but not least, we remark that the goal is not to statistically generalize results, but rather make critical observations and explanations of the phenomenon that will push forward the body of knowledge on the archetypes of incubation models and their development in emerging countries.

FINDINGS AND DISCUSSION

We use the described methodology to corroborate the theoretical propositions, and analyse incubation models of the incubators. The models determine the firms and entrepreneurs they chose to incubate, the type of services they provide to them and the approach they take to deliver them. We break down and elaborate the findings of the research in three groups that we enucleated as the most relevant: stage of intervention, services provided and the role of sponsors.

Stage of Intervention

The stage of intervention at which incubators chose to incubate new firms is an important and determining feature of an incubation model. We enquired about the stage explicitly in the questionnaire and during the interviews, yet incubators typically declare to be flexible in this respect, and they state not to have *a priori* set formal restrictions on who they will incubate. Nevertheless, a more telling way to assess which the stage of new venture development incubators are looking to support is to observe the details of their selection criteria: if an incubator emphasises market conditions and market opportunity in the selection process, it is putting focus on the seed stage, during which the goal is help the incubated firms reach their markets. On the contrary, if an incubator prioritises quality of entrepreneurs and entrepreneurial teams in their choice of new ventures, it is rather focusing on the very early stage of new venture development, that is, entrepreneurs themselves. During that nascent stage, an incubator supports

the incubated entrepreneurs in the advancement of relevant business skills. We share the findings in Table 3.

*** Insert Table 3 about here ***

Provided Services

The main goal of a business incubator, as a type of intermediary, is to provide incubated firms with a bridge to and a buffer from the surrounding environment, so the new firms can establish themselves and start serving the market with their products and services. As previously explained, the support is manifested in the form of services the incubators provide. We follow the predefined codes laid out in Table 2 to extract the precise information from the questionnaire and interviews on the services classified in coherent groups. The detailed results are presented in Table 4.

*** Insert Table 4 about here ***

The Role of Sponsorship

Two key aspects of sponsorship are determinant of the incubation model that is to be chosen by an incubator: sponsor's objectives and resources. First, each sponsor supports an incubator following its motivation and goals. Sponsors allocate their resources to accomplish a mission. The main difference emerges between sponsors that are trying to draw profits from the investments they make into the incubator, and the ones that are not driven by the financial gains. This difference can be again observed directly through the questions on the importance of incubator profits in their activities, but can be additionally determined by the portion of equity that the incubator takes from the incubated firms. The collected information on these two points is provided in Table 5.

*** Insert Table 5 about here ***

Sponsors also provide to incubators key resources, essential for incubator operations, i.e. for meeting the specific needs of the incubated firms. Those resources are typically financial, but sponsors could also provide infrastructure, administrative services, human capital, connections and so on. The resources supplied by the sponsors are translated to the services offered by the incubators, and we observe accordingly (see Table 4).

Discussion

The analysis of the case studies has led to interesting findings concerning incubation models, what features constitute each of them, and how and why they are different depending on the sponsorship. The empirical evidence presented in Table 3-Table 5 enrich the propositions drawn from the theory that the institutionally void environment of developing countries results in a need for more than one incubation model. As noted by the manager of Incubator A: *“Having an acceleration (seed incubation) model is not sufficient to meet the needs of all entrepreneurs.”* In particular, two distinct models can be differentiated based on the stage of intervention and services provided by the incubators.

The first, nascent incubation model, employed by Incubators A, B and C, is characterised by the focus on entrepreneurial teams and development of founders.⁹ This support is mainly target at developing their business-related capabilities through business training and mentoring, as well as a link to knowledge sources such as universities (see Table 4). As the manager of Incubator C pointed out, *“(.) technical and ICT skills of the entrepreneurs are typically not an issue, while*

⁹ Even though we did not succeed in having a governmental incubator included in the study, we believe it would emerge to have similar characteristics to Incubators A, B and C.

they most commonly lack business skills and need systematic support to develop them. (...) Everybody can benefit of the business training, no matter the background, which makes it the most important part of incubation.” Different forms of training are offered to the incubated entrepreneurs. Incubators A, B and C organise boot camps, which are intensive workshops covering various topics essential for running a new business. Incubator A is particularly keen of this activity, organising more than a 2-month long programme for very early stage entrepreneurs where they can learn how to design a business strategy and create a formal business plan. Its manager states that “*(...) aspiring entrepreneurs are not business literate, and they need basic training in many different business-related topics. Boot camps offer exactly that, and that’s why they are an essential part of the incubator.*” Mentoring is another important aspect of this incubation model, as nascent entrepreneurs need particular guidance throughout the uncertain endeavour of new business creation. In the nascent incubation model, mentors take a more assertive role - they typically have regular meetings (e.g. weekly) with the incubated entrepreneurs or they even approach them proactively. For instance, Incubator A has a vast network of potential mentors of around 12.000 experts, out of which close to 300 are weekly active in the community. On average, Incubators A, B and C provide around 20 hours per month of training and mentoring per for each incubated firm (unlike the other studied incubators, which provide around 10 hours). Infrastructural support is also an integral part of the services these incubators provide (see *infra*).

On the other hand, the seed incubation model, integrated by Incubators D and E, is characterised by the focus on business ventures and ideas (see Table 3), and facilitation of launching products or services to the markets (see Table 4). The support is reflected in the provision of pre-seed and seed funding, and links to important stakeholders from the market such as investors, strategic

partners, potential suppliers and clients, etc. Incubators of this type offer the seed financing, which is essential when a venture needs to engage in the market. Moreover, the networking support is a key at this stage, as the manager of incubator D states: *“One of the key the reasons why we (Incubator D) are successful is a proper network that is constantly being built around the (incubator) ecosystem through entrepreneurs, new investors, partners, etc.”* Entrepreneurs need to interact with the environment to effectively place their products on the market. The incubators that deploy the seed incubation model bridge them to the right agents from their environment, to which the new ventures would have no access to otherwise. As manager of Incubator E points out, *“(.) linking the entrepreneurs with the key external stakeholders is the most important role we (Incubator E) have.”*

Infrastructure support is present in all incubators and represents a foundation for both incubation models (see Table 4). Most of the incubators (except Incubator E) provide physical incubation (e.g. co-working space and facilities), while they all deliver administrative (e.g. legal, accounting, etc.) support. Provision of infrastructure is, however, shown to play a more prominent role in the nascent incubation model, as incubated entrepreneurial ventures and entrepreneurial teams benefit more from being close to other early-stage entrepreneurs and having the cumbersome and sometimes expensive administrative issues solved.

The evidence also suggests that the two incubation models are bound to sequentially co-exist. They are focused on the provision of different services, and they have different goals at the core of their mission. Naturally, the incubators with nascent incubation model precede the ones with seed incubation model, and this was remarked by the managers of Incubator A: *“(.) an early-stage (nascent) incubation model is complementary to accelerator (seed incubation) model.”* and Incubator D: *“(.) there is a space for an early-stage (nascent) incubation model before (our)*

acceleration (seed) programme (..)”. Even an external expert (a president of an entrepreneurship-focused NGO from Egypt), who we interviewed during the study, pointed to necessity of different incubation models: *“Acceleration (seed) model is great, yet it is only for a very narrow group of entrepreneurs who are already relatively advanced phase of their ventures’ development. The entrepreneurs, though, need assistance to get to that point.”*

Finally, the empirical evidence emerged to be in line with the theoretically based proposition of sponsorship specialisation. Non-profit sponsors (NGOs and universities, in this case) opted for the nascent incubation model. They do not take equity from the incubated ventures (see Table 5), as they do not have profits of the incubator as a goal. The interviewed manager of Incubator B states: *“We are sponsored by the NGO that has a clear non-profit mission. That mission does not allow to charge for the services we provide, neither to take equity from the incubated firms.”*

The fact that they do not have incubator profits as a priority, they can afford to invest in the development of entrepreneurs, and not necessarily of ventures themselves. The investment in business capabilities of entrepreneurs, as non-rival goods, would otherwise be non-existent (i.e. there would be an underinvestment) and would leave the gap created by the institutional voids untapped.¹⁰

For-profit, on the other hand, opt to support mainly market reach of ventures that are already in the seed stage of development, i.e. new ventures that are relatively close to the market (see Table 5), and they do that through the seed incubation model. For instance, Incubator D is looking to

¹⁰ Some of the incubator managers remark though that non-profit mission limits the incubator to have efficient launch of the venture to the market. The incubated ventures should be profitable by definition, and the misalignment of theirs with the incubator’s mission could potentially be an issue. Incubator C managers states: *“We hope to start taking equity soon, as we see that as the path to long-sustainability of the incubators, but also as a key change in the philosophy and approach to support.”*, while the manager of Incubator B says: *“We are trying to turn our incubator into a for-profit organisation and by taking equity stakes from the incubated firms, create a more business-like strategy for the incubator. That should boost the performance.”*

incubate scalable startups that already have a proof of concept or market traction. The market side of the business idea and its growth rate emerge to be critical for the choice, as market information is a major indication of potential revenues for the new firms. Incubator E managers states: *“We value the current size and growth rate of the market targeted by the venture as two of the most important aspects for the admission.”* Both Incubator D and E take equity from the incubated firms, and they see that not only as a way to sustain the operations, but also as the right mindset and philosophy. As reported by the manager of Incubator D: *“The for-profit approach is the only feasible one, i.e. the only approach not destined to fail, as it also includes the right mindset and philosophy for nurturing businesses. Charity rarely works in this industry.”* For-profit sponsors also have resources and capabilities to support the market reach. Incubators D and E are privately sponsored by groups of professional investors, who have vast business experience throughout which they have built extensive social networks. The social networks and connections are leveraged in the incubation process to bridge the new ventures with the right agents of the ecosystem. Incubator E manager states: *“We assist firms to enter the value chain, mainly by connecting them to the potential suppliers and partners, which we draw from our existing networks.”*, while the interviewed manager of Incubator D reports: *“We involve a lot of investors for follow-up investments, which are critical for the further growth of the new firms.”*

CONCLUSIONS

This paper deals with incubators and their incubation models in institutionally void environment of developing countries. First, based on the theoretical foundation of resource dependence theory and the literature on institutional voids, we developed a framework of incubation models in developing countries. Relying on the multiple case study methodology, we corroborated the need

of two substantively different incubation models, which emerges due to the institutional voids. The two incubation models (nascent and seed) are differentiated dominantly by the stage of intervention in terms of incubated firms' development stage and by the services they provide. The former model is an early-stage programme focused on the development of business capabilities of entrepreneurs and provision of infrastructural support. By that, it copes with knowledge and failure and demonstration externalities. The latter model is a seed-stage programme focused on the facilitation of market needs of the new ventures, and taps the gap caused by network externality. We further posited, grounding on the sponsorship theory, that the incubator sponsors plays a role in the choice of the incubation model. Different types of sponsors, due to differences in their missions and resources, systematically opt for different models. Non-profit ones were argued to be more prone to implement the nascent incubation model, while the for-profit ones are proposed to realise the seed incubation model.

The empirical findings speak in favour of the developed conceptual framework. They add to the recent works of Bruneel et al. (2012) and Grimaldi and Grandi (2005), yet point to a different evolution of incubation models in developing countries, where general institutions that support entrepreneurs are underdeveloped. The gap created by the institutional voids is illuminated and conceptual arguments that explain the roots of the differences are developed. The findings also add to the literature on sponsorship in the context of intermediaries (Amezcuca et al., 2013). We comply with Dutt et al. (2015), who posit that the distribution of resources, as well as other decisions of incubators, are dependent on the type of sponsorship the incubator have. Nonetheless, conversely to them, we find that more severe institutional voids do not only change distribution of provided services, but require two separate incubation models to be able to react to the more heterogenous needs of entrepreneurs, caused by different externalities. Additionally,

non- vs. for-profit objectives of the sponsors are asserted to have a substantial role in the choice of incubation model. Furthermore, the findings are in line with the principal assumption of contingency theory that the configuration of an organization (in this case, business incubator and its incubation model) and the external environment must achieve *fit* in order to obtain success (Ketchen et al., 1993). Even though we do not test for the performance, we argue conceptually how the incubator can be tailored to meet needs of new ventures contingent to the immediate environment (Hackett and Dilts, 2004b). It is our hope that these results will spur forthcoming theoretical and empirical research on the diffusion and further development of incubation models, and particularly so in developing countries, where the need for the intermediaries of this type is urgent as entrepreneurship systematically suffers from the lack of support.

The paper also has several limitations that remain to be address in future research. First, as previously remarked, the results cannot be statistically generalised to any other group of incubators or countries. Instead, the results are aimed at setting an initial conceptual framework that will allow future studies to elaborate further on the influence of institutional voids on the incubators role in entrepreneurship ecosystems. Moreover, the findings should facilitate future rigorous analysis and a comprehensive understanding of the incubation models in developing countries – a topic understudied in the hitherto literature. Second, the paper uses one country analysis to refine the theoretical framework. This is a caveat, but also an opportunity. Future research endeavours could implement a cross-country qualitative analysis, in which developed (i.e. institutionally developed) and developing (i.e. institutionally underdeveloped) countries would be opposed for a more clear comparison. In the same vein, a quantitative analysis on a statistically significant sample could shed even more light onto the issue. Finally, the paper does not touch on the effectiveness of each incubation model. Hence, explicitly studying performance

of different models based on a valid metrics is an imperative for the near future and ranks high in our research agenda.

Last but not least, the paper offers implications for policy makers in developing countries. Particularly, it draws attention to the point that not all incubators are nor they should be built and configured in the same way. Governments should, most importantly, try to understand and carefully pinpoint the flaws and bottlenecks of the support systems in the current institutional setting and channel the support for intermediaries (i.e. business incubators) accordingly. They should ponder on the incubation models they want to spur, as they target different gaps in the institutional system. If the voids are such that they leave individuals without sufficient level of business capabilities to engage in entrepreneurial activity, designed policies should put emphasis on the creation of incubators with the nascent incubation model. On the other hand, if the entrepreneurs are, relying on the existing institutions, able to develop business capabilities and get new ventures started on their own, the government should facilitate operations of incubators with the seed incubation model. In doing so, policy makers can opt for direct (by organising governmental incubators) or indirect (assisting other incubators by means of regulations) support. In the former case, the more appropriate model for governmental incubators appears to be the nascent one, addressing the very early stage of new venture development. In the latter case, the policy makers should incentives sponsors to match their characteristics (mission, objectives and resources) with the impact they want to make on the entrepreneurial ecosystem. Non-profit sponsors are more suitable for the nascent incubation model, and hence support for the nascent stage of new venture development, while for-profit (private) sponsors are more suitable for the seed incubation model and the corresponding stage of new venture development support. Governments should particularly recognise the need for synchronising incubators with these two

incubation models and encouraging their collaboration, as only then a sustainable pipeline of new ventures can function on a large scale.

The findings also have implications for practitioners. Managers of incubators should be urged to clearly set their objectives and understand the resources they can offer to the potential entrepreneurs, so they can decide on the right incubation model. When the appropriate model is chosen, they can follow the findings to design services, admission and graduation criteria, and assessment of incubator's performance. On the other hand, entrepreneurs should critically evaluate their needs and barriers they are facing due to the existing entrepreneurial ecosystem, and opt for an incubation programme that can effectively assist in addressing them.

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FIGURES AND TABLES

Figure 1.
Development of incubation models in developed countries (e.g. see Bruneel et al., 2012).

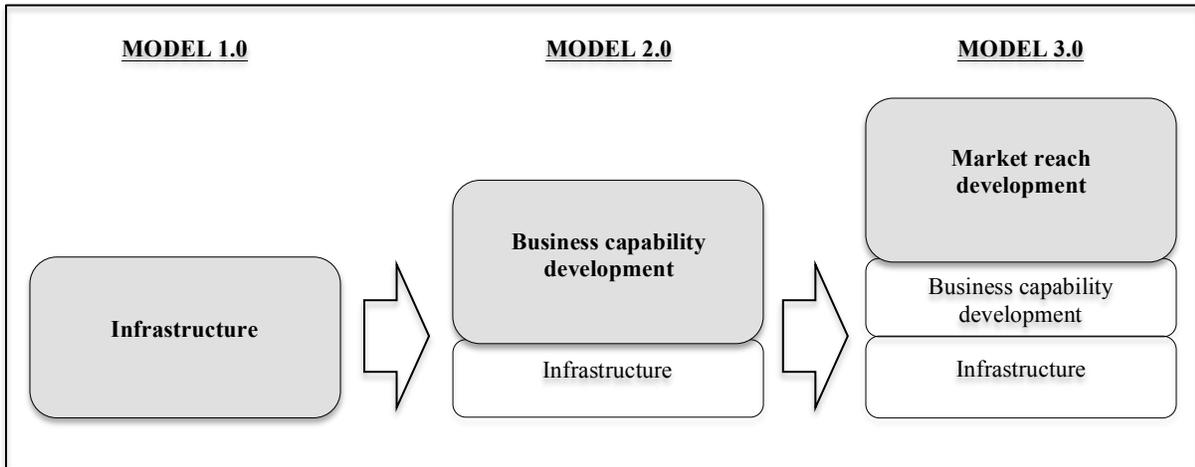


Figure 2.
Development of incubation models in developing countries.

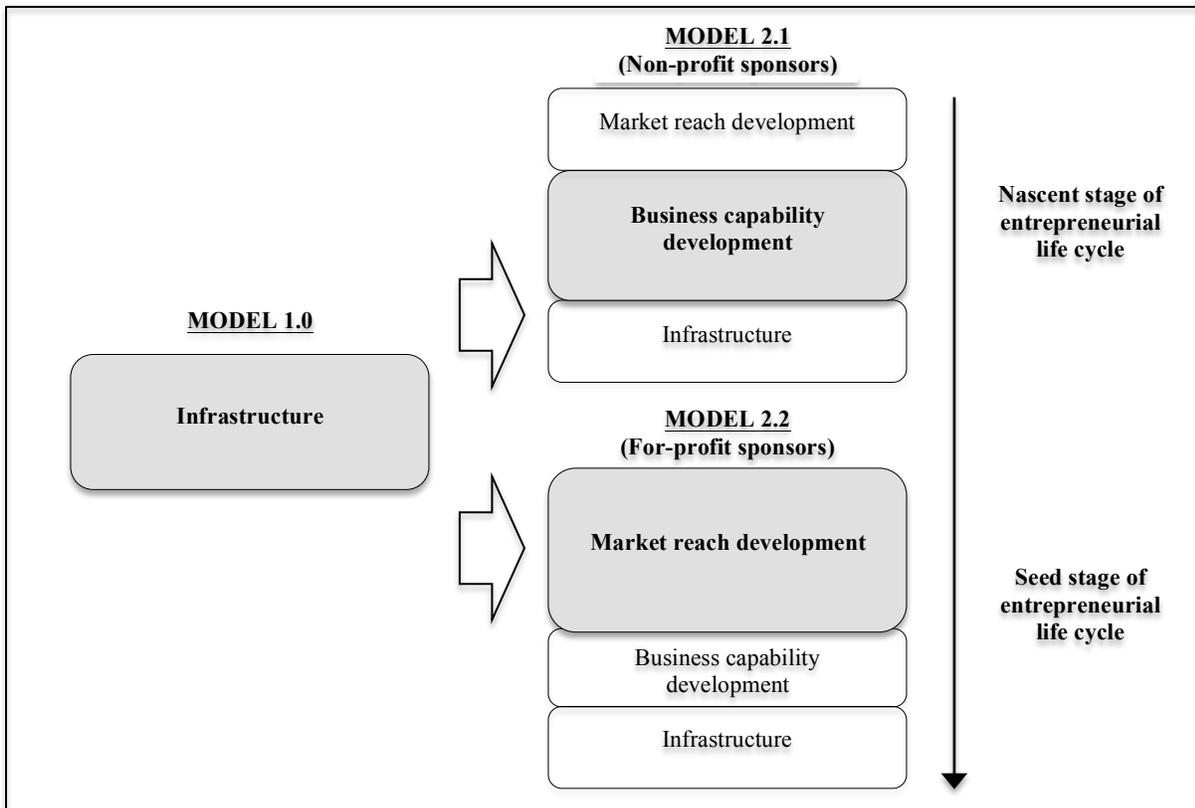


Table 1.
Details about the incubators included in the empirical analysis.

Incubator	Sponsor	Mission	Scope	Found. year	Incubation length	Applications per year (Total no. of graduates)
Incubator A	NGO	Non-profit	Social	2003	Long	370+ (15)
Incubator B	NGO	Non-profit	Social / Tech	2015	Medium	180+ (9)
Incubator C	University	Non-profit	General	2013	Medium	300+ (18)
Incubator D	Private	For-profit	Tech	2011	Short	800+ (20)
Incubator E	Private	For-profit	Tech/ Social	2012	Short	60+ (9)

Notes: Short (<6 months), Medium (6-12 months), Long (>12 months).

Table 2.
Operationalization of the incubator services.

Support type	Brief description	Code	Basic routines for identification
Infrastructure	Providing infrastructural support for basic business operations (e.g. co-working space, access to internet, laboratories for developing prototypes, etc.)	1.1	Co-working space
		1.2	ICT services
		1.3	Access to laboratories
		1.4	Administrative support
Business capability development	Providing support in developing business skills of incubated firms and entrepreneurs.	2.1	Business training
		2.2	Business mentoring
		2.3	Link to knowledge sources (e.g. universities)
Market reach development	Providing support in launching products or services to the market, linking the incubated firms to the other relevant stakeholders in the market (e.g. investors, universities, etc.), inclusion into the value chain (e.g. domestic and international suppliers, and clients), and other supports that support market reach of the incubated firms.	3.1	Pre-seed financial support (<=US\$ 10.000)
		3.2	Seed funding (>US\$ 10.000)
		3.3	Link to investors
		3.3	Link to value chain (e.g. suppliers and clients)
		3.4	Link to potential strategic partners

Table 3.
Stage of intervention assessment based on the admission criteria.

Main admission criteria	Nascent incubation model			Seed incubation model	
	Incubator A	Incubator B	Incubator C	Incubator D	Incubator E
Entrepreneurial team	✓*	✓*	✓*		
Market potential of the idea	✓			✓*	✓*

Notes: ✓ stands for the importance of the criteria, while * stands for the higher priority of the criteria relatively to the other one (which came out of the triangulation of all available data).

Table 4.
Overview of services provided with respect to the most important groups.

Provided services by code		Nascent incubation model			Seed incubation model	
		Incubator A	Incubator B	Incubator C	Incubator D	Incubator E
Infrastructure	1.1	✓	✓	✓	✓	
	1.2	✓	✓	✓	✓	
	1.3	✓*		✓		
	1.4	✓	✓	✓	✓	✓
Business capability development	2.1	✓*	✓*	✓*	✓	✓
	2.2	✓	✓*	✓*	✓	✓
	2.3	✓*	✓	✓*	✓	✓
Market reach development	3.1	✓*	✓	✓		
	3.2	✓			✓*	✓
	3.3			✓	✓*	✓*
	3.3				✓*	✓*
	3.4	✓	✓	✓	✓	✓*

Notes: ✓ stands for the provision of the services, while * stands for the higher priority of the service relatively to the other services (which came out of the triangulation of all available data).

Table 5.
Overview of incubators' mission and acquisition strategy with respect to the incubated ventures.

Incubator mission/acquisition strategy	Nascent incubation model			Seed incubation model	
	Incubator A	Incubator B	Incubator C	Incubator D	Incubator E
For-profit mission				✓	✓
Equity stake acquisition				✓	✓