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## **New firm emergence: the significance of social embeddedness and resource bootstrapping to the process of nascent firm emergence**

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NEW FIRM EMERGENCE: THE SIGNIFICANCE OF SOCIAL EMBEDDEDNESS  
AND RESOURCE BOOTSTRAPPING  
TO THE PROCESS OF NASCENT FIRM EMERGENCE

A Dissertation

Submitted to the Graduate Faculty of the  
Louisiana State University and  
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in partial fulfillment of the  
requirements of the degree of  
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in

The William W. and Catherine M. Rucks Department of Management  
E.J. Ourso College of Business

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## **LIST OF ABBREVIATIONS**

PSED	Panel Study of Entrepreneurial Dynamics
GEM	Global Entrepreneurship Monitor
SRP	Study Response Project at Syracuse University
PTE	Progress to Emergence
GAP	Gestation Activities Performance

## **ABSTRACT**

Firm founding is an evolutionary process. Part of this process involves undertaking a series of gestation activities. Start-ups undertaking these activities are referred to as firms in gestation and the process is termed nascent entrepreneurship. Empirical evidence shows that more than half of firms in gestation do not survive the first eighteen months. One of the reasons given for this high failure rate is that firms in gestation are subject to what Stinchcombe (1965) called liability of newness because, as new creations, they lack evaluative performance history. One of the consequences of this liability of newness is that new firms are faced with institutional barriers to the human, social, and financial capital resources necessary to progress to emergence. This study proposed that in the face of these barriers, successful emergence will be identified with (a) social embeddedness, i.e., efforts to endear the new venture in its organizational field to those who will determine the venture's socio-political legitimacy – and with that legitimacy comes resources and markets and/or (b) creative resource bootstrapping, i.e., creativity in locating resources where there are none. The sample for the study was taken from a bank of volunteer panelists maintained by SurveyResponse, a project at Syracuse University that serves as a medium for facilitating academic online research. The data collection instrument was a web based questionnaire.

The study found that both social embeddedness and resource bootstrapping are significant predictors of gestation activities performance which, in turn, mediates the relationship of these variables with progress to emergence. The study recommends that more attention needs to be given to the importance of social embeddedness in entrepreneurial idea exploitation models. Past research has focused more on resource bootstrapping at the expense of social relations.

## **CHAPTER 1: INTRODUCTION AND BACKGROUND TO THE STUDY**

### **1.1 Introduction**

Entrepreneurs do not found new firms instantly (Freeman, 1982). Rather, firm founding is an evolutionary process characterized by a series of organizing gestation activities (Carter, Gartner, & Reynolds, 1996; Delmar & Shane, 2002; Aldrich & Ruef, 2006). Successful performance of these activities is influenced, among other factors, by the nascent firm's ability to acquire the necessary resources to complete the activities. That ability is the subject of this study. This chapter provides a conceptual background to the proposition that successful firm emergence is contingent upon the resourcefulness and social embeddedness of nascent firms as they perform the gestation activities. This proposition, and the study as a whole, is premised on (a) Stinchcombe (1965) and Hannan and Freeman's (1984) assertion that access to formal resource channels critical to firm performance is compromised by newness, and (b) Pfeffer and Salancik's (1978) prediction that firms cornered into dependence on external resource suppliers will seek ways to reduce this dependence.

### **1.2 Background to the Study**

Ordinarily, the entrepreneurship process starts with a discovery process (identifying and evaluating a business opportunity, also called conceptual development or idea exploration stage) and progresses through an exploitation process (a reference to tangible actions taken to realize the opportunity identified in the discovery process) which, if successful, results in an established firm (Carter, et al. 1996; Samuelson, 2001; Delmar & Shane, 2002). Firms going through this process are referred to as firms in gestation or nascent firms until they emerge or fail to emerge as fully established firms. The time span of this process is referred to as the gestation period.

It is instructive to clarify at this early stage that nascent entrepreneurship research has yet to definitively demarcate the start or end points of the gestation period. Founders spend time,

consciously or unconsciously thinking about the prospect of starting a business and what kind of business they would like to form before making the decision to start a business. These cognitive processes are part of the start-up process. Since such processes are largely unstructured, their contribution to the conceptual reconstruction of the entrepreneurial process has only recently started to emerge (Shane & Ventakaraman, 2000; Hills & Singh, 2004). Cognitive processes aside, the demarcation between the discovery or exploration stage on one hand and the exploitation stage on the other hand, is not always clear. For example, some studies (e.g. Choi, Lévesque, & Shepherd, 2007) regard business planning as an exploration activity, while others (e.g. Delmar & Shane, 2003, 2004) include it among post-discovery processes. Choi et al. (2007) regard the entire gestation period as part of the exploration process. This is conceptually different from Davidsson (2006), while others view that the gestation period is composed of both the discovery (exploration) and the exploitation processes.

This study shared Davidsson's (2006) view, using the performance of at least one tangible gestation activity as the starting point for the exploitation process. The emphasis on tangible activity was to preclude less tangible cognitive activities that precede the exploitation stage. By definition, the exploitation stage calls for tangible actions to be performed (Davidsson, 2006). The demarcation does not discount the importance of the intangible actions to the business formation process but rather acknowledges that the cognitive synthesis of entrepreneurial ideas and the subsequent decision to start a business, rightly belong to the discovery stage of the founding process.

The upper boundary of nascent entrepreneurship is equally nebulous. The literature is not definitive about when a firm in gestation makes the transition into a fully established firm (Carter, Gartner, & Reynolds, 2004). One reason for this ambiguity is that some of the activities involved in the start-up process are multilevel phenomena. For example, making the first sale is

used in some studies (e.g., Carter, Gartner, & Reynolds, 1996) as a gestation activity and in other studies (e.g., Newbert, 2005) as an indicator of firm founding (Gartner et al., 2004). Other studies have used the accumulation of stocks of goods, generation of positive cash flows, filing for taxes, and registration with Dun & Bradstreet as indicators of emergence (Gartner et al., 2004; Davidsson, 2006). The present study measured progress to eventual emergence as the dependent variable, rather than consider an actual event to be an indicator of emergence. The study followed Ruef's (2001) view that firm emergence is a process in which the nascent firm must demonstrate resource mobilization, legal establishment, social organization, and operations start-up before considering itself established. Wherever the boundaries of the gestation period lie, each nascent effort in this stage of firm founding performs a host of initial activities that help to create an established firm.

Recent research in nascent entrepreneurship has helped to identify an array of initial activities (e.g., Carter, et al., 1996) that include events, behaviors, and all accomplishments undertaken or performed by founders to different degrees, in different order, and at different points in time (Delmar & Shane, 2002; 2003b), that lead to the emergence of new businesses (Gartner et al., 2004). Performance of these activities is critical to the emergence of new firms as there are consequences, not only for the firms' operational success, but also for the socio-political legitimacy of the new entities in the eyes of resource holders, potential customers, and other stakeholders. These two – socio-political legitimacy and operational success – are bound together in a reciprocal relationship. On one hand, a higher degree of legitimacy offers better access to resources and markets for the nascent firm (Suchman, 1995). On the other hand, successful operations provide the nascent firm with a visibility that enhances its socio-political legitimacy.

The literature (e.g., Delmar & Shane, 2002; Newport, 2005; Davidsson, 2006) subdivides

these organizing activities into three categories. In the first category are planning activities, essentially aimed at courting legitimacy. Examples include such activities as firm incorporation, business planning, opening a business bank account, and applying for a copyright, patent, trademark, permits, or licenses.

The second category includes operational activities or resource transforming activities whose aim is to “make the business tangible to others” (Weick, 1979; Delmar & Shane, 2002), but that also prepares the ground for production or service delivery. Examples of activities in this category are inclusive of a) hiring a personnel team, b) putting funds together, c) acquiring facilities, equipment, tools, and machinery, d) purchasing raw materials and supplies, and e) developing prototypes.

The third category involves marketing, related to activities aimed at increasing the visibility of the new firm’s output in potential markets. Examples of marketing-related activities used in the present study include identification of target markets, engagement in promotional activities, and making the first sale.

An overriding assumption in nascent entrepreneurship literature is that the higher the rate of internal organizing, i.e., successful completion of initial activities, the higher the likelihood that a new firm will emerge (Carter et al., 1996; Lichtenstein, Carter, Dooley, & Gartner, 2007). However, it is important to appreciate that the level of organizing is not only about the quantum of activities completed. It is also about the timing, sequencing, and combining (or simultaneously undertaking) of activities (Delmar & Shane, 2002).

The number of activities completed is important, because a minimum number may be necessary to create a threshold for firm formation (Lichtenstein, Carter, Dooley, & Gartner, 2004). The timing and sequencing of activities are also important because some activities may only be attempted after others have been completed. Combinations are equally important,

because activities are interrelated to the degree that performance of some will affect the progress of others. Besides, a combination of activities may be necessary to create a “tipping point” for firm emergence (see Lichtenstein, et al., 2004).

The point this study makes is that many of these founding activities, particularly search and discovery, operational, and marketing activities, require human, social, and financial resources to be successfully completed. Often, nascent firms do not possess these resources in adequate amounts and must rely on external sources to fill in the gaps (Stinchcombe, 1965; Hannan & Freeman, 1989). In agreement with theory, the study contends that access to critical resources is constrained by institutional rigidities or what Stinchcombe (1965, p.148) called the “liability of newness,” for new firms lacking in performance evaluation criteria. In his frequently cited seminal work, Stinchcombe posited that there will be high rates of failure among nascent firms because [among other reasons] they lack (a) trust among potential employees and suppliers, (b) embeddedness in other organizations, (c) ties to customers and support organizations, and (d) capacity to learn and create new roles. Similarly, Hannan and Freeman (1989) contended that new organizational forms will falter until relevant populations perceive them as reliable and accountable. To be considered reliable and accountable, new firms must first establish routines, control systems, and institutionalized roles (Hager, Galaskiewicz, & Larson, 2004). The paradox is that in order to organize they need to muster resources from the populations that control them. These populations, which Stinchcombe (1965) and Hannan and Freeman (1989) also make reference to, constitute current and potential employees, customers, suppliers, and support organizations, as well as already-established, counterpart businesses. These various groups are all potential stakeholders in the nascent firm, because they harbor the capital resources (human, social, and financial) that nascent firms require to get off the ground and to earn themselves a reputation. Stakeholders will, however, not invest their resources,



including time to learn more about a specific organization, unless they have some assurance of the focal organization's good standing. This presents a paradoxical scenario for nascent firms – no access to resources or market unless the firm is established; yet no firm gets established unless it masters access to resources and markets.

This study argues, therefore, that for firms to successfully emerge while operating under circumstances of resource paucity they need do one, or both, of two things: (1) earn acceptance by becoming socially embedded in their populations, and/or (2) rely on the ingenuity and creativity of their founders or founding teams to mobilize, often in unconventional ways, the resources necessary to perform the start-up activities.

The present study focused on external factors as constraints to the prospects of successful emergence. However, it was also cognizant of the fact that there are a host of internal factors that may equally stunt a nascent venture. For example, Penrose (1959) and Nelson and Winter (1982) argued that managerial time spent on putting routines in place places a limit on firm growth and may cause firms to fall victim to another potentially progress-stunting phenomenon: the liability of smallness. Similarly, the strategic management of available resources and the firms' strategic responses to environmental dynamics are both germane issues in assessing the performance of any firm. That said, the study assumed that the entrepreneurial firms would find it easier to deal with internal weaknesses than with externally induced threats. In light of this, the background of the study lay in the threat to progress posed by insufficient sociopolitical legitimacy. It focused on the potential remedies to this threat; specifically: social embeddedness and resource bootstrapping.

Social embeddedness may be described as a counter-argument to new firms' isolation, created by lack of legitimacy. The embeddedness argument, derived from social capital theory, is that [new] firms improve their chances of survival by connecting more with the population in

which they operate (Deepphouse, 1996; Uzzi, 2000; Hager, et al., 2004). The argument is that social connections with higher status firms, resource suppliers, state agencies, and customers will help to overcome many of the problems associated with newness and accord the new firms the legitimacy needed to operate (Burt, 1992). This viewpoint is supported by Larson (1992) who argues that resource-poor firms will improve their chances of survival by “building network exchange structures with [stakeholders] identified as critical resource suppliers” (p. 100). Obviously, potential network partners will be attracted by reciprocal benefits. This means that the onus is on the nascent firms to present themselves in forms that portend return benefits to individuals and firms in the organizational field targeted for network relationships.

The second option referred to above, i.e., resource bootstrapping or resource ingenuity, relates to actions of resource-saving or resource-creation. Nascent firms apply these actions in order to circumvent institutional and newness traps which constrain access to resources. The argument here is that resource ingenuity and creativity will enable nascent firms to put together supplementary or substitutional bundles of human, social, and financial resources to facilitate progress toward emergence (Bhidde, 1992; Baker, 2006), when traditional sources are not forthcoming. The study used the term *resource bootstrapping* as a catch-all expression for all ingenuous efforts at resource creation. The verb ‘to bootstrap’ is defined in Merriam-Webster’s Collegiate Dictionary as “to promote or develop by initiative and effort with little or no assistance” (2003, p.143). In this study, the term was used to embrace the host of unconventional ways in which enterprising nascent firms strategically circumvent resource constraints.

This cluster of resource creation strategies includes, among others, improvisation (Miner, Bassoff & Moorman, 2001), cooptation (Starr & MacMillan, 1990), bricolage (Baker et al., 2003; Garud & Karnoe, 2003; Baker & Nelson, 2005; Baker, 2006; 2007), effectuation

(Sarasvathy, 2001), and alliance formation (Lee et al., 2001). The individual strategies are discussed in more detail in Chapter 2.

### **1.3 Research Question**

Findings from the Panel Study of Entrepreneurial Dynamics (PSED) and the Global Entrepreneurship Monitor (GEM) suggest that subject to spatial and temporal variations, between one third and one half of start-up endeavors will be “up and running” 12-18 months after initiating activities (Carter, et al. 1996: 48%; Wagner, 2004: 22-62%; Davidsson, 2006: 33-50%; see also Aldrich, 1999; Johnson, Parker & Wijbenga, 2006). While this statistic indicates that a larger percentage of nascent start-ups do not result in viable businesses, it also says that there is a respectable number that do. It seems unlikely that success or failure in nascent firm endeavors is altogether a chance event. There is an implied suggestion in the performance numbers that there are some things successful attempts do that their unsuccessful counterparts fail at or are unable to do. In this regard, this study contends that differences in the ability to complete initial gestation activities may provide part of the explanation for the differences in success rates and that this ability is a function of the nascent firm’s capacity to generate the required resources.

Research aimed at explaining differences in the success/failure rates of business start-ups is not new. Explanations for the variation available in the literature range from social and personal characteristics of the founders (e.g., Brush & Manolova, 2004), to the more complex issues of resource dependence (Pfeffer & Salancik, 1978; Hennan & Freeman, 1989; Baker, 2006) and institutional constraints (Stinchcombe, 1965; Suchman, 1995; Delmar & Shane, 2002; de Clercq, 2003). None of the explanations in the literature is considered as the *de facto* source of nascent firm success or failure, probably due to disparities in research findings and the limited generalizability of the studies. There are also differences in industry, geographical location, and

time that render generalizations ineffectual. However, there is one common characteristic – and particularly among first time entrepreneurs – that may uniformly impede the success of start-ups. This is the lack of collateral reference or what institutional theory has termed lack of sociopolitical legitimacy (Baum & Powell, 1995; Suchman, 1995; Scott, 2001; Aldrich & Martinez, 2003). The lack of sociopolitical legitimacy translates into an inability by potential resource and revenue controllers – employees, suppliers, distributors, regulators, and customers – to assess the risk associated with exchange relationships with the new entity. In other words, no references are available upon which resource controllers can evaluate the reliability and trustworthiness of the new entity. Understandably, resource holders become skeptical and tend to hold back on investing their resources.

Nascent firms must therefore strive to survive, succeed, and create visibility for themselves in unfriendly environments by using the limited resources and revenues available. How they do this, is an issue that nascent entrepreneurship research has yet to answer adequately (Baker, 2006). Therefore, the present study investigated the resource creation behaviors of nascent firms and the predilection of these behaviors and actions toward influencing the emergence process of these firms.

#### **1.4 Justification for the Study**

The view that new firm formation is critical to sustained economic growth (Schumpeter, 1934; Penrose, 1959; Baumol, 1993) is probably ubiquitous. This importance notwithstanding, firm formation is also known to be an unpredictable, evolutionary process that succeeds and fails with almost equal regularity (Aldrich, 1999; Aldrich and Ruef, 2006). If these two statements are true, then factors that make or break the firm foundation process right from its inception should be of interest to theorists and policy makers alike. One of the critical milestones in a nascent firm's life cycle is the assembly and organization of the necessary resources to start it off

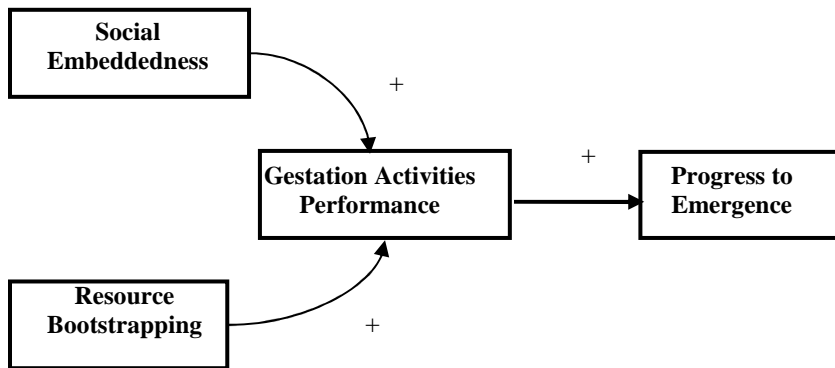
(Delmar & Shane, 2002). Existing research on initial entrepreneurship stages concentrated on the identification and conceptual development of entrepreneurial opportunities (e.g., Shane & Venkataraman, 2000; Keh, Foo, & Lim, 2002; Clausen, 2006) at the expense of behaviors and actions that account for the successful exploitation of these opportunities (Clausen, 2006). The exploitation phase of the start-up process refers to tangible actions undertaken to realize the opportunities identified by the founder. The acquisition of requisite human, social, and financial resources and the creation visibility for the nascent firm are part of this process (Davidsson, 2006). Currently, how nascent entrepreneurs put together the resources necessary to accomplish the gestation process amidst institutional constraints is a subject that still demands closer study. Support for this observation comes from Stouder and Kirchhoff (2004), who opined that “... meaningful research has yet to be done to really understand the actual funding activities of [nascent] entrepreneurs” (p. 370). These researchers applied PSED data to analyze actions related to funding the first year of business.

The present study is a contribution toward a better understanding of the entrepreneurial behaviors and actions that improve the availability of requisite resources to nascent firms performing gestation activities. Additionally, and in concert with current trends, any study of nascent entrepreneurial activities shifts the focus of entrepreneurship research away from individual entrepreneurial characteristics, inconclusive in nature, to behaviors that explain the process of entrepreneurship (Gartner & Carter, 2003; Davidsson, 2006), and responds to Gartner’s (1988) call to make this transition.

Academic argument aside, the enormity of nascent entrepreneurship alone signifies the importance of studying the phenomenon. GEM research estimated that in 2004, 500 million people around the world were simultaneously involved in nascent or recent entrepreneurial activity (Reynolds, Bosma, Autio, & Hunt, 2005) and that at the time of their report, 40% of the

adult population in the United States had at some time in their lives engaged in independent start-ups (see also Delmar & Davidsson, 2000). There are, as Reynolds et al. (2005) suggested, extensive implications for both scholars and policy makers in studies like this one, because of the obvious impact the nascent entrepreneurship phenomenon has on macro-economic parameters such as employment, standards of living, and growth and development.

### 1.5 Theoretical Framework



**Figure 1.1:** Conceptual Model of the Social Embeddedness and Resource Bootstrapping on Gestation Activities Performance and Progress to Firm Emergence

The major premises on which this research was based are that for nascent firms to assume an established status, a) they need to perform a number of initial activities; b) these activities require human, social, and financial resources to be performed; c) as starters, these nascent firms are faced with resource constraints, principally due to a lack of necessary testimonials to gain the trust of controllers of resource; d) despite these constraints, some new start-ups emerge successfully; and e) as a corollary to d), there are ingenious ways (including social embeddedness and resource bootstrapping), not common to all start-ups, through which the successful nascent entrepreneurial firms circumvent the resource constraints in c). Furthermore, this study proceeded on the presumption that by improving their resource availability status, nascent firms are better able to complete enough gestation activities to attain what Lichtenstein,

et al. (2004) called a “tipping point.” The tipping point is the threshold that propels the nascent firm into an established, up-and-running business.

With the above assumptions in mind, the major proposition of the study was that socially embedded nascent firms and/or those that engaged in resource creation activities through bootstrapping were more likely to make progress to emergence than those that did not. The justification for the proposition was that the two practices enable the nascent firms to perform the gestation activities necessary to arrive at the tipping point.

The study model implicitly acknowledges that apart from social embeddedness and resource bootstrapping, such issues as a) differences in the opportunity being exploited; b) the industry in which the nascent firm planned to compete; and c) the founders’ entrepreneurial experience would also affect the rate at which initial activities are completed, as well as the type and number of initial activities necessary to gain the tipping point. Opportunities were assumed to lie on a continuum running from new products introduced in new markets to imitations of existing products or services sold in existing markets. The study used the term *idea novelty* to capture the variation along the continuum. Owing to novelty, new products and/or new markets were deemed to pose greater challenges to legitimacy, and therefore were likely to take longer or require more activities to become established, when compared to nascent firms based on imitations or run-of-the-mill business ideas in proven markets (Samuelsson, 2001). Similarly, firms compete in fast-, standard-, or slow-market cycle industries.

Fast-market cycle industries, deemed more attractive to enter, also required more unique resources to complete activities (especially prototypes), since the dynamism in such industries calls for constant innovation.

On the other hand, slow-cycle industries, characterized by mature firms, were expected to require quantitatively more resources to get off the ground because of the economies of scale

such industries typically require to break-even. Standard-cycle markets are deemed to occupy the middle ground.

Lastly, this study utilized founder entrepreneurial experience to refer to the number of times a founder or group of founders had engaged in the start-up process

. First timers were characterized as “novice” and repeated efforts as “serial” founders or entrepreneurs. The presumption was that, compared to their serial counterparts, novice founders would be more challenged in acquiring requisite resources to attain emergence. For the purpose of this study, parallel entrepreneurs, described as founders attempting to concurrently initiate two or more businesses, were classified as serial founders.

In conceptualizing the study, it was assumed that these factors – type of industry, idea novelty, and founding experience – have the potential to influence the performance of gestation activities and hence the need to control for this influence, together with demographic differences, in statistical analyses.

## **1.6 Organization of the Dissertation Report**

This dissertation report is presented in five chapters. The introduction chapter is followed by a review of the existing literature and the development of research hypotheses, tested by the study. The chapter begins with a review of nascent entrepreneurship research to date, followed by a review of selected sociological and organizational theories related to the subject under study. This is followed by a review of existing literature on resource bootstrapping and social embeddedness and how they relate to nascent entrepreneurship. In each of these sections, relevant hypotheses are developed and posed.

Chapter Three presents details of the measurement and the collection of data on the research variables. The chapter also discusses the development of the data collection instrument, the selection of the sample, and the administration of the instrument. Details of how each of



variables in the study was operationalized are presented. The chapter concludes with a table of all variables and their measurements.

In Chapter Four, the report presents the findings from the study. The chapter starts with presentation of means, standard deviations, and zero-order correlations for all variables. This is followed by results of specific tests of the study hypotheses. It concludes with a summary table of the results of the hypothesis tests.

Chapter Five presents a more detailed discussion of the findings and how they relate to current knowledge. The chapter draws a number of conclusions from the study and their implications for theory and practice. The chapter concludes with suggestions for future research.

### **1.7 Definitions of Key Terms**

In the following section, some of the key terms used in the study and the report are defined for purposes of clarity.

- **Resource Bootstrapping**

In the study, the term resource bootstrapping was used generically to embrace nascent firm strategies to overcome resource constraints. The activities symbolizing these strategies include new resource creation, reconfiguration of existing resources into new combinations, and/or resource saving through the sharing of available resources. Terms frequently used in entrepreneurship literature to describe these activities are: a) bricolage and effectuation (recombination of available resources), b) improvisation (making up the venture extemporaneously), and c) cooptation and alliances (i.e., taking advantage of under-utilized resources and sharing available resources with other firms).

- **Social Embeddedness**

The term social embeddedness refers to the extent to which a focal nascent firm counts on dyadic relationships with individuals and organizations in the organizational field for access

to resources and markets. As a concept, embeddedness may refer to relational ties (relational embeddedness) or to the physical structure that embodies these relationships (structural embeddedness). In contrast to the extent of network connections captured by structural embeddedness, relational embeddedness refers to the quality and depth of single dyadic ties (Granovetter, 1992; Marx & Lechner, 2002; Uzzi & Lancaster, 2003; Moran, 2005). This study did not measure structural embeddedness but focused on the more conceptual relational embeddedness.

- **Gestation Activities/Gestation Period**

The initial activities that build an organization are referred to as gestation activities. In the study, these initial activities were subdivided into three categories: legitimating, operational (or resource transforming), and marketing related activities. The legitimating activities were seen as all activities aimed at building a unique identity for the nascent firm, e.g., formal registration. The operational activities include tangible actions taken in preparation for production or service delivery, e.g., building a prototype or purchasing machinery. The marketing-related activities include actions intended to prepare or test the potential market for the forthcoming product or service.

The time period necessary to perform these activities is called the gestation period. Thus, the embryonic start-up may also be called a firm in gestation.

- **Nascent Entrepreneurship / Nascent Entrepreneur / Nascent Firm**

The term nascent entrepreneurship is defined as the process of organizing activities that take place before a firm becomes a fully fledged organization (Carter, Gartner, & Reynolds, 1996; Johnson, Parker, & Wijbenga, 2006; Davidsson, 2006). The nascent entrepreneur is the individual, who, alone or with others, initiates the process of creating a business (Gartner et al., 2004). The term nascent firm refers to the embryonic start-up that subsequently develops into an

organization or fails to do so. Nascent entrepreneurship starts with the very first activity that is undertaken with a view to starting a business (this is the same lower boundary used in the PSED survey) and culminates with firm emergence. In this paper, a firm is considered to have emerged when it has successfully performed resource mobilization, legal establishment, social organization, and initial operational activities, although not necessarily in this order (Ruef, 2001).

- **Exploitation Process**

The start-up process is broadly divided into two phases – the discovery and the exploitation phases. The discovery phase refers to the identification and conceptualization of a business idea, also referred to in sections of the literature as the exploration phase. The exploitation stage is concerned with tangible actions taken by a nascent firm to realize an idea identified and evaluated in the preceding phase. The term is used differently from the more common exploitation/exploration dichotomy found in learning literature which distinguishes exploitation and exploration by the allocation of resources between “old certainties,” and “new possibilities” (March, 1991).

## **CHAPTER 2: REVIEW OF RELATED LITERATURE AND HYPOTHESES DEVELOPMENT**

This chapter presents a summary of recent conceptual and empirical literature relating to the emergence of entrepreneurial firms. Coverage is divided into three major areas, namely 1) nascent entrepreneurship research, 2) selected theories that relate to the environment of firm founding and which drive hypothesized relationships in the study, and 3) research on resource bootstrapping and social embeddedness strategies. Hypotheses pertinent to the research question are developed in the course of the review of the literature.

### **2.1 Nascent Entrepreneurship Research**

One frequently cited weakness of literature on nascent entrepreneurship is that many of the published articles on the subject are not driven by theoretical insight (Davidsson, 2006). This, however, is beginning to change with the development and use of longitudinal data bases like the ground breaking US PSED (1999 – 2004) and its subsequent replications in Canada, Sweden, Belgium, and Australia (see for example, work by Delmar & Shane, 2002, 2003; Davidsson & Honig, 2003; Delmar & Shane, 2004; Newbert, 2005). Evidently, there is growing interest in a deeper understanding of behaviors, actions, and events surrounding entrepreneurial firm emergence or what is called nascent entrepreneurship.

Carter, et al. (1996) and Johnson et al. (2006) define nascent entrepreneurship as the process of organization creation and nascent entrepreneurial activities as “those events that take place before an organization becomes an organization” (Carter et al., 1996: p.152). According to Davidsson (2006), the terms nascent entrepreneur and nascent venture appear to have been first used in academic literature fifteen years ago by Reynolds and co-authors (Reynolds & White, 1992; Reynolds & Miller, 1992). However it has only been in the last seven years or so that there has been heightened research interest in nascent entrepreneurship as a distinct stage of the broader entrepreneurial process. The increased interest coincides with the coming into use of the

PSED longitudinal survey and repeated cross-sectional GEM studies data bases. The two survey projects (PSED and GEM) and their satellites in several countries have helped to fill a gap in the understanding of enterprise founding. Before these pioneer efforts, there was a noticeable dearth of empirical literature on the early stages of the entrepreneurial process.

Today, there is a stronger drive for a better understanding of behaviors and events associated with opportunity identification and the emergence of a firm or what is commonly called the gestation period (Gartner et al., 2004). In the past, many entrepreneurship models and much of the literature adopted a “just do it” preconception as though new firms are founded instantly (Delmar & Shane, 2002: 7; Freeman, 1982). Moreover, much of the earlier research on entrepreneurship is criticized for being confounded by survival, selection, and hindsight bias because more often than not, the research was based on samples of already established firms (Gartner et al., 2004; Johnson et al., 2006; Davidsson, 2006). The PSED and GEM projects were designed with a view to overcome many of these weaknesses.

Perhaps not by coincidence, many entrepreneurship scholars in the last decade have heeded calls by Gartner (1988) to reorient research focus toward behaviors in the process of emergence (Gartner & Carter, 2003; Davidsson, 2006). Two scholarly efforts, a special edition of *Small Business Economics* (2006: volume 27) and Davidsson’s (2006) monograph on developments in the study of nascent entrepreneurs provide excellent summaries of the studies undertaken up to 2006.

Some of these recent studies focused broadly on the antecedents and outcomes of nascent entrepreneurship (e.g., Wagner, 2004; Davidsson, 2005) while others have explored specific issues such as the discovery and exploitation processes (e.g., Samuelson, 2001; Hills & Singh, 2004; Smith, 2005). Other specific areas researched have included person-based factors linked to nascent entrepreneurship (Kim, Aldrich, & Keister, 2003; Davidsson & Honig, 2003; Wagner,

2004), gender and ethnicity influences (Delmar & Davidsson, 2000; Diochon et al., 2003; Parker & Belghitar, 2004; Newbert, 2005) as well as growth aspirations (Human & Matthews, 2004; Schoett & Bager, 2004). The present study was developed to supplement earlier research efforts that focused singularly on the exploitation process of firm founding.

Studies on the exploitation process have in general focused on antecedent factors associated with successful exploitation, process characteristics, and outcomes. Although antecedent factors included the availability of resources, the research emphasized the influence of resource possession at the point of entry into the entrepreneurship process. Only a few studies have specifically addressed the question of resource availability during the exploitation process; particularly, as informed by theory, when nascent firms are encumbered by the burden of liability of newness.

To compound this weakness, findings from the studies so far undertaken have been conflicting (e.g., Davidsson & Honig (2003) versus Diochon, Menzies, & Gasse (2003) and Delmar & Gunnarsson (2000); Parker & Belghitar (2006) and Gelderen et al. (2003) versus Ebben & Johnson (2005) and Shane & Cable (2002)). This is not surprising though, since the discipline remains in the early stages of theory development.

The small number of empirical studies and the lack of consistent findings in those few studies that focused on the relationship between resource availability and successful exploitation of entrepreneurial ideas leaves a knowledge gap that is critical not only to theory development but also to practitioners, given the high rate of nascent entrepreneurship failures.

The exploitation process differs from the more researched discovery process, in the sense that while the discovery process refers to identification and conceptual development of an idea for a new venture, the exploitation process is concerned with tangible actions taken in order to realize the idea (Davidsson & Honig, 2003; Davidsson, 2006). By implication, resource

requirements present a more constraining factor than at the discovery stage, or, at the entry point, when the decision to start a business is made.

Ongoing research efforts on the exploitation process are focused on providing answers to questions regarding successful emergence rates as the outcome variable and the number, timing, and sequencing of gestation activities as predictors. What has been assumed, or perhaps overlooked, is the question of access, by nascent firms, to human, social, and financial resources that are necessary to get the nascent ventures “up and running.” Implicit reference is often made to Stevenson and Jarillo (1990: p.23), who define entrepreneurship as the “... pursuit of opportunities without regard to resources [entrepreneurial firms] currently control.” This definition suggests that entrepreneurial firms tend to be confident that they will overcome liabilities of newness to access resources necessary to pursue opportunities. Indeed, between one-third and one-half of those who start, do overcome this liability. However, how the entrepreneurs actually acquire these resources is a question that remains unanswered, definitively (Baker, 2006). Many of the studies touching on the issue of human, social, and financial capital requirements, *vis-à-vis* the founding process (e.g., Kim, et al., 2003; Davidsson & Honig, 2003; Wagner, 2004) have explored the link between resources and entry into nascent entrepreneurship. Their findings, largely mixed, shed no light on resource adequacy issues in the subsequent stages of the founding process. For instance, findings suggesting that access to financial capital has little relationship with the entrance into nascent entrepreneurship (Davidsson, 2006: 15) do not address the questions posed by the present study. At the exploitation stage, the decision to start a new venture has been taken. New decisions have to be made about more practical matters like product design, acquisition of key inputs, and market entry. The challenge, at this time, is to move the venture along. Besides, while it may be true that access to financial capital is not the factor that makes or breaks business start-ups (van Gelderen,

Thurik, & Bosma, 2003; Kim, Aldrich, & Keister, 2003; Davidsson, 2006), this study argues that lack of ownership of, or access to, financial capital must be substituted by some other form of capital – human or social – in order to forward the founding process.

To return to exploitation process research questions, Carter et al. (1996) found that about 48% of nascent ventures are up and running after 18 months. Wagner (2004), using US PSED data, put the figure at 45% after 12 months. All in all, Davidsson (2006) concluded that between 33% and 50% of new attempts emerge from the puberty stage. Probably owing to the complexity and idiosyncratic nature of the founding process, no discipline (management, economics or organizational ecology) has found a pervasive theory that adequately explains the variations in firm formation. Nevertheless, testing of partial predictors of personal, behavioral, and contextual dimensions continues (Gartner, et al., 2004).

Among the factors previously tested for their predictive influence on successful exploitation, Dahlqvist, Davidsson and Wiklund (2000) found a positive effect for general human capital factors, e.g., business, education, and previous work experience, and a positive effect for previous start-up experience; this finding was confirmed by Delmar and Shane (2003). Alsos and Kolvereid (1998) in making a distinction among novice founders (founding a firm for the very first time), serial founders (continued attempts at founding), and parallel founders (simultaneously founding a new venture with another or other ongoing efforts), noted that parallel founders were more likely to form teams, use government funding, and engage in sales promotion. Parallel founders were also more adept at making other people and their resources work for the start-up. Davidsson and Honig (2003) found positive effects for social capital – specifically, that for purposes of moving the process to another level, linking the nascent firm to a business network had strong, positive effects. Conversely, Delmar and Gunnarsson (2000) using Swedish PSED data, found stronger support for human capital compared to social capital,



while Diochon, Menzies, and Gasse (2003), using Canadian data, found no human capital differences between abandoned and ongoing nascent ventures. Additionally, social capital showed a positive relationship for close relatives only in the Diochon, et al. (2003) study. Regarding financial capital, van Gelderen et al. (2003: Dutch PSED), Diochon et al. (2003: Canadian PSED), and Parker and Belghitar (2004: Dutch PSED) argued that while access to financial capital may be extremely important for certain types of high potential ventures, it is not the factor that makes or breaks the majority of young business efforts.

On the role of innovation and firm size as contextual factors, Diochon et al. (2003) found that new firms, when focused on “doing things better,” were more likely to continue than counterparts intent on “doing things differently.” Presumably the latter, being more radical, aroused more skepticism among investors and customers. Furthermore, the authors found that those firms that focused on a manageable size had higher chances of survival, compared to others intent on growing as large as possible. However, Liao and Welsch (2003), Samuelsson (2004), and Newbert (2005) argued that innovative and imitative ventures have different explanatory models that account for outcomes. Samuelsson (2004), for example, argues that instrumental social capital is relatively more important for imitative ventures, while emotional social capital carries an effect only for innovative ventures in their early stages. Finally, Newbert (2005) argued that different factors explain outcomes in low as opposed to high tech start-ups and Liao and Welsch (2003) found differences in gestation periods and the number of start-up activities for tech versus non-tech nascent ventures. Although the literature is not altogether uniform, the general trend seems to be that exploitation outcomes will differ relative to the extent to which the entrepreneurial idea is innovative.

Specific personal factors such as gender (e.g. Diochon et al., 2003; Parker & Belghitar, 2004; Newbert, 2005), ethnicity (e.g. Delmar & Davidsson, 2000; Kim et al., 2003), and growth

aspirations (e.g. Human & Matthews, 2004; Schoett & Bager, 2004) are also discussed as factors that influence the exploitation process. By and large, researchers found no gender effects on nascent entrepreneurship outcomes (Diochon et al., 2003; Parker & Belghitar, 2004; Newbert, 2005; Davidsson, 2006). However, gender differences have been noted in entry (Acs, Arenious, Hay, & Minniti, 2005) and to a lesser degree in the discovery process (Alsos & Ljunggren, 1998). There seems to be general agreement that ethnicity introduces sociological dimensions in firm founding (Kim et al., 2003; Green, Carter, & Reynolds, 2003; Green & Owen, 2004), but there is sparse analysis on ethnicity implications for exploitation or other nascent entrepreneurship processes (Davidsson, 2006). Researchers have reported concern over sample under representation of some ethnic groups, but the PSED project took measures to address this imbalance (Gartner et al., 2004). As for growth aspirations, sections of the literature, perhaps not surprisingly, posit that individuals with high growth dreams are more likely to found new firms (Diochon et al. 2003). Other than this, the bulk of findings suggest that growth aspirations do not substantially explain differences in firm founding success rates (Delmar & Davidsson, 1999; Matthews & Human, 2000).

## **2.2 Gap in Nascent Entrepreneurship Literature Addressed by the Study**

Gartner (1985) identified four dimensions that account for organizational start-up: 1) individuals involved in the creation of the new venture, 2) activities undertaken by those individuals during the venture creation process, 3) organizational structure and strategy of the new venture, and (4) the environmental context of the new venture. As Johnson, Parker, and Wijbenga (2006) opined, current research efforts focus on “discover[ing] the individual and environmental characteristics of those individuals who are attracted to becoming entrepreneurs and who subsequently succeed or fail in this role.” (p. 3). Extant research has also clearly established that nascent entrepreneurship is a process; that certain tangible activities must be

successfully accomplished for a firm to be established (Gartner & Carter, 2003; Gartner et al., 2004); and that a host of contextual factors moderate the achievement of this goal. What seems to be missing from current research efforts is the structure and strategy dimension. Although it is known, for example, that individuals do not need to possess immense financial or cultural capital to *decide* to become entrepreneurs (Kim et al., 2006; emphasis added), the strategies they employ or the structures that facilitate access to resources, once the exploitation process gets underway, remain largely under-researched. Needless to say, all new firms require resources to accomplish activities that legitimize them, and provide them with a tangible presence in the market.

Additionally, although there is some work emanating from PSED data on the entrepreneurial development process (Reynolds, 2004; Matthews & Human, 2004; Carter et al., 2004), there is little indication of how the Gartner dimensions combine (e.g., strategy with activities performed) to influence the performance of a firm in gestation.

Available research on strategy formulation in nascent firms (e.g., Stearns & Carter, 2004) has focused on competitive strategic intent and appears to assume that marketable outputs are already in place. What is missing is the Miles and Snow (1978) kind of emphasis that addresses strategies formulated to overcome the debilitating influences of environmental dynamics that nascent firms must navigate. For example, it would be interesting to know whether legitimacy requirements condemn nascent firms to mimetic isomorphism, as Aldrich and Rueff (2006) seem to suggest, or whether the firms can strategically circumvent the normative restrictions.

### **2.3 Research on Gestation Activities and Development of Related Hypotheses**

Gartner et al. (2004) defined gestation activities as “events, behaviors, and other accomplishments of individuals [including founders and their start-up teams] that lead to the emergence of a new business” (p. 285). There is however, much variation among lists of gestation activities by researchers in terms of the number of activities listed, the order in which

the activities are expected to occur, and the classification of these activities (see for example, Reynolds & Miller, 1992; Gatewood et al., 1995; Carter et al., 1996; PSED questionnaire, 2004). Some of the variation is driven by researchers' different conceptions about the distinction between gestation activities and founding indicators and the multilevel nature of some of the gestation activities. For example, going by the definition of a gestation activity (see above), making a first sale qualifies as gestation activity because it is an accomplishment by individuals in the nascent firm. At the same time it is a firm level indicator that an organization exists (e.g. in Gatewood et al., 1995), thereby making the activity a) both a predictor nascent activity and an outcome indicator of firm emergence, and b) investigable as both an individual level and a firm level behavior.

The fact that researchers have investigated a different range of start-up activities places a limitation on the generalizability of the findings. The PSED project, the most recent extensive study on nascent entrepreneurship, presented a total of 44 questions covering 25 gestation activities compared to Carter, et al. (1996) with 27 activities, and Reynolds and Miller (1992) who had 15 activities.

By and large, the large number of activities can be reduced to a few dimensions, such as Kutz and Gartner (1988; four dimensions), Ruef (2001; five dimensions), and Delmar and Shane (2004; three dimensions).

This study adopted 18 activities from both Carter et al. (1996) and PSED, and used Delmar and Shane (2004) to categorize the activities into three related dimensions, labeled in this study as legitimating, operational, and marketing activities.

Apart from the total number of activities that nascent firms initiate, existing research on gestation activities has centered on three other areas: how many of these activities need to be completed before emergence (e.g., Carter et al., 1996; Gartner, Carter, & Reynolds, 2004); the

sequencing of activities (e.g., Delmar & Shane, 2003b, 2004; Newbert, 2005); and the pace and timing of activities (e.g., Samuelson, 2001; Lichtenstein et al., 2004).

There seems to be no magic number of activities that must be completed before emergence (Gartner et al., 2004). Expecting to find such a number is perhaps not realistic, given that the number of requisite activities will vary by the nature of the industry in which the firm aspires to compete, the type of opportunity being pursued (Liao & Welsch, 2003; Newbert, 2005), and the experience of the founding team (Alsos & Kolvereid, 1998).

On sequencing of activities, Vesper (1990) and Carter et al. (1996) concluded that start-up processes can follow any sequence. This position was supported by Newbert (2005), who found idiosyncratic variation among respondents with respect to start-up activities. Delmar and Shane (2003b), however, made a contrary observation following a study that investigated the existence of a normative sequence of start-up activities and whether failure to follow this sequence would lead to inferior results (e.g., going off-course or getting lower than expected sales). Delmar and Shane (2003b) found evidence to suggest that there is indeed a 'best sequence' or a normatively recommendable order of organizing activities. In another study, Delmar and Shane (2004) found that undertaking legitimating activities early in the process reduced the likelihood of abandonment and recommended that planning activities should precede marketing efforts. This complemented their earlier finding (Delmar and Shane, 2003a) that business planning, which is a legitimizing activity, led to favorable results in the formation process. Tying sequence and number of activities, Delmar and Shane (2003b) found that the more activities a nascent entrepreneur undertook, the more adverse became the consequences of deviating from the normative sequence.

On the pace and timing of activities, Lichtenstein et al., (2004) found that the prospects of emergence were enhanced when the pace of execution of activities was slower and when the

process took a longer period of time. They also found that there was often a flurry of activities at the beginning and towards the end of the process. Consequently, Lichtenstein et al. (2006) advocated for developing several activities to near completion and then simultaneously completing them to build a momentum which they called a 'tipping point.'

- **Hypotheses 1a and 1b: The Sequencing of Gestation Activities**

The literature is not definitive about the significance of sequencing gestation activities. Whereas Delmar and Shane (2003b, 2004) argue that there is indeed a normative order in which activities should be performed, Newbert (2005) and Carter et al. (1996) assert that founding activities can follow any sequence without significant impact on outcomes. Cheng and Van de Ven (1996) for their part, asserted that the initial stages of firm development follow a chaotic pattern and Gartner et al. (2004) developed a case for the process of enactment in which an advanced activity, like making a first sale, can precede more preparatory activities and is then followed by sense making (see also Weick, 1979).

It would certainly be of great import to practitioners, policy makers, and academicians alike to know with an acceptable degree of certainty whether the sequencing of gestation activities, such as performing legitimating activities ahead of all others, has a significant impact on founding outcomes. By their nature and purpose, legitimating activities give identity to the nascent firm and serve as a signal to the stakeholders, not only to acknowledge the firm's impending existence, but also to distinguish it from competing entities or near entities. Going by institutional theory, this should be a stepping stone to recognition and more objective comparative evaluation. This should enable stakeholders to make an informed decision about engaging in exchange with the new entity. It seems intuitive that commencing with legitimating activities gives the nascent firm leverage to access resources for operational and marketing activities. Therefore, to get a better understanding of the importance of the sequencing of

gestation activities and to add to the collection of empirical evidence on the subject, the following hypotheses were tested:

**Hypothesis 1a (H1a): Performing legitimating activities ahead of resource transforming and market oriented activities will be positively associated with overall gestation activities performance.**

**Hypothesis 1b (H1b): Performing legitimating activities ahead of resource transforming and market oriented activities will be positively associated with progress toward emergence.**

- **Hypothesis 2: The Pace of Gestation Activities Performance**

Delmar and Davidsson (1999) introduced notions of duration (time lapsed since first gestation activity) and efficiency (average time between activities) in performing gestation activities that have not been actively pursued by subsequent research. It seems logical to intimate that progress to emergence is not merely a function of the number of gestation activities performed, but also of the manner in which these activities are performed. Nascent entrepreneurship literature does not authoritatively assign the direction taken in the relationship between elapsed time and progress to emergence. Lichtenstein et al. (2004) found that progress was associated with a slow pace of activities performance over a long period of time. However in a later study, Lichtenstein, Dooley, and Lumpkin (2006) suggested that developing several activities concurrently creates a tipping point to emergence. Since performance of gestation activities builds legitimacy, develops production processes, and creates demand for the firm's outputs, one would expect that a shorter duration and a higher rate of efficiency should be positively related to faster progress to emergence. This supposition was tested by the following hypothesis:

**Hypothesis 2 (H2): Performing more gestation activities over a shorter time period will be positively associated with progress to emergence.**

The next section highlights literature on a selection of theories that explain the environment in which nascent ventures are likely to be found. The theories selected provide the background in which antecedents to the variables of interest (and the relationships and interactions among them) are conceptualized.

## **2.4 Selected Theories with a Bearing on Nascent Entrepreneurship**

Many sociological, economic, and organizational theories have a bearing on firm formation. Examples include neo-institutional theory, social capital theory, resource dependence theory, the resource-based view of the firm, and learning theory. Others include the theory of the firm in economics, ecological theory, evolutionary theory, and chaos theory. However, as Davidsson (2006) noted, “the process of emergence is a combination of two issues [organizational emergence and evolutionary organizational processes] on which few extant theories in any discipline [do] a particularly good job” (p. 37).

A selection from the above theories and their bearing on the questions under study is explored in the following review.

### **2.4.1 Institutional Theory and Conformity to Social Pressure**

Economist and sociologist Max Weber (1864–1920) introduced the world to ways in which bureaucracy and institutionalism were beginning to dominate society with his notion of the “iron cage” that rampant institutionalization created.

New institutional theory or neo-institutionalism (DiMaggio & Powell, 1983, 1991; North, 1990; Scott, 2001) has since added to Weber’s initial thoughts. Scott (2001) defined institutions as “social structures composed of cultural-cognitive, normative, and regulative elements that, together with associated activities and resources, provide stability and meaning to social life.” (p.48). Institutionalism, or more strictly normative institutionalism, is the manner in which the institutions are developed and enacted or scripted into the social rubric (Scott, 2001).



With its origin in sociology, institutional theory recognizes that institutions operate in an environment (called the institutional environment) consisting of other players whose behaviors and actions impact the performance of the focal institution. According to the theory, every institution is influenced by the broader social environment in such a way that to survive, it has to succumb to social pressure and conform to institutional expectations (Aldrich & Martinez, 2003; Aldrich & Rueff, 2006).

The theory suggests that the social structures that act as guidelines for societal behavior are “created, diffused, adopted, and adapted over space and time (Scott, 2004: 408). The merits of the theory notwithstanding, such normative expectations and playing by the rules are frequently at odds with entrepreneurial behavior.

Entrepreneurship is a process of creation (Gartner, 1988; Jansson, 2004) that, like other institutions, takes place in a social environment. This act of creation requires access to resources held by, and markets constituted of, societal members. These societal members are inclusive of individuals, groups, firms, and state institutions. According to institutional theory, entrepreneur behaviors, intended use of sought resources, and outputs derived from the resources used must conform to norms, values, rules, and conceptions acceptable to relevant publics in the institutional environment (Meyer & Rowan, 1977; DiMaggio & Powell, 1983; Japperson, 1991). Other publics such as regulatory authorities, opinion leaders, and consensus shapers also enter the mix that, consciously or unconsciously, mandates what is acceptable.

What is acceptable is frequently modeled from institutionalized guidelines on what is known or what consequences can be adequately evaluated. Institutional theory maintains that succumbing to acceptable norms and behaviors grants the focal organization legitimacy in the eyes of the relevant publics (Suchman, 1995; Aldrich & Martinez, 2003) and, with legitimacy, access to resources and markets.

For the nascent entrepreneurial firm, especially an innovative one, this is a stifling scenario from two perspectives. One, it is uncharacteristic of innovative entrepreneurship to mimic existing forms. Two, being new, nascent entrepreneurial organizations are short on historical evaluative criteria. As such, potential stakeholders will be understandably skeptical about engaging in exchange relationships with the nascent firms because the chances of success of their ventures cannot be reasonably estimated. What this means is that access to essential resources and consequently success, is constrained by their newness and novelty. New ventures need resources and markets to succeed and become established, but they first must be established to gain access to resources and markets. The resource owner's position is understandable, since resources are dispensed on the basis of implicit trust that outcomes will be favorable. Since outcomes are known only after resources have been expended, resource owners need to carefully evaluate requisitions for their resources. In the same vein, customers want some assurance of value before spending their dollars. Rational evaluations are based on information available at the time and place of evaluation. A positive match between this information and socially constructed evaluative benchmarks (Aldrich & Martinez, 2003) accords the new firm legitimacy and with it, resources and markets. Unfortunately for nascent entrepreneurial firms, information about them is often scanty and inadequate; and if they happen to be innovative, their ventures will rarely conform to the established standards used in evaluation which, going by theory, denies them resources and markets.

In short, much of the research in institutional theory deals with the pervasive influence of institutions on human behavior through rules, norms, and other social frameworks. Three forms of influence – regulative (rules), normative (obligation), and cognitive (conception) are believed to drive behavior (Suchman, 1995; Scott, 2001). For example, in nascent entrepreneurship research, Honig and Karlsson (2004) argued that new ventures prepare business plans because of

mimetic and coercive pressures, rather than implicit belief that business plans will elicit better outcomes. In other words, choices are made because they mimic what is expected by others or for fear of retribution, such as denial of access to resources or markets.

As already alluded to, mimetic isomorphism is antithetic to the spirit of entrepreneurship. Entrepreneurship would not be so named if it were based on what is expected or on actions that are, as Suchman (1995, p 574) expressed it, “desirable, proper or appropriate” within some socially constructed system of norms, values and definitions. Entrepreneurship is, instead, defined by new ideas and new combinations or what is commonly called innovation (Schumpeter, 1934; Drucker, 1985). Innovation introduces ideas, processes, and concepts that do not conform to existing evaluation standards. It is often discontinuous and chaotic, operating in the unknown. This departure from established knowledge and known systems makes new entrepreneurial organizations vulnerable to resource paucity and heightens the risk of early failure. Unfortunately for nascent entrepreneurial firms, as is the case for other organizations, many institutional conditions are beyond the scope of any single firm (Meyer & Scott, 1983; Zucker, 1987; DiMaggio and Powell, 1991; Meyer and Rowan, 1991), let alone one in formative stages.

The challenge for the new firm is to find ways of circumventing these institutional restrictions and to survive without being intimidated into mimicking existing forms. Mimetic isomorphism means forgoing the very quality by which entrepreneurial firms are identified – distinctiveness. Conceptually, entrepreneurs tend to bend more towards exploration than mere imitation, although some sections of nascent entrepreneurship literature have suggested otherwise. For example, Diochon, et al. (2003) found that new firms enhance their chances of survival by “doing things better” than by “doing things differently” and Samuelsson (2001), found that imitative attempts were more likely to succeed than radical innovations. This dispute

notwithstanding, sustainable market success for any entrepreneur will lie more in innovation than in the reproduction of existing forms. Only then can a firm claim to have a competitive advantage that is rare, valuable, costly to imitate, and non-substitutable, all at the same time (Hitt, Ireland, Camp, & Sexton, 2001).

In summary, institutional theory predicts restricted access to requisite resources for nascent firms. This may lead to early failure unless something is done to counteract the negative forces. Indeed, newer voices in institutional theory reject the rational actor models and acknowledge the input of institutions as independent agents in determining their fate (Powell & DiMaggio, 1991). Nascent firms have a number of options to choose from. The first option is to succumb to mimetic and coercive isomorphism (DiMaggio & Powell, 1983; Oliver, 1991). Going with this option subjects the firm to loss of distinctiveness. The second option is to ally the nascent firm to a network that hosts established organizations (Baum & Oliver, 1996; de Clercq & Arenius, 2003). The presumption here is that the established organizations' legitimacy will rub off on the nascent venture (discussed later under social capital theory). This may very well happen, but the option is often accompanied by loss of independence. The third option is to brazen it out, relying on creative improvisation to fill resource gaps (Baker, Miner, & Eesley, 2001; Hmieleski & Corbett, 2006). Selecting this option subjects the firm to the risk of rejection by stakeholders whose evaluation is guided only by established norms. To borrow from risk theory, given an uncertain environmental state and a riskier decision, it is probable that firms taking the last option will take longer to get established, and will also be more prone to the hazard of failure. However, if successful, the rewards are likely to be greater (Novosyolov, 2001).

A combination of several of the above options would probably be the most pragmatic choice. Indeed, the present research focused on a combination of the second and third options:

operationalized in the study as social embeddedness and resource bootstrapping, respectively.

#### **2.4.2 Social Exchange Theory and Embeddedness**

Conclusions of young firms becoming isolated in their organizational fields emanate from theories that take little or no cognizance of the impact of social relations on economic behavior. Social exchange and neo-institutional theorists (Levine & White, 1961; DiMaggio & Powell, 1983; Granovetter, 1985; Williamson, 1994; Scott, 2001) acknowledge the role played by the social environment in economic decisions, pointing to the potential for a somewhat different set of outcomes than the rational economic behavior or under-socialized models would elicit. Social exchange and social network theories and the concept of embeddedness emanate from this thinking. They all introduce social relations in the evaluation and execution of economic exchanges (Granovetter, 1985). The concepts are modeled to capture situations in which social relations shape economic actions in contradistinction to neoclassical economics models that emphasize atomized market-oriented exchange systems (Williamson, 1994; Uzzi, 1996).

The gist of the social exchange argument is that embedding economic actions in social behavior improves firm outcomes through inter-firm resource pooling, cooperation, and coordinated adaptation. Having and minding social relations changes the dispositions of exchange partners in the actions they take, in ways that neo-institutional theory does not address (Uzzi, 1996). As Powell (1990) put it, embeddedness modifies actors' motivations to embrace long term benefits of mutual trust and reciprocity, rather than the pursuit of immediate economic gains. Such social relations and the shift in disposition constitute advantages to the nascent firm in the sense that they reduce potential partners' skepticism about exchange relationships and play a critical role in building the new firm's market reputation. The literature expresses these

advantages through a number of social exchange theory-derived concepts, some of which may appear to overlap. The contrasts among these concepts are discussed in the next section.

First, embeddedness arises out of social exchange theory and is inextricably entwined with social capital. However, whereas social capital refers to the outcome of social relations, embeddedness is the mechanism or the conduit through which these outcomes are achieved (Granovetter, 1985; Uzzi, 1996; Adler & Kwon, 2002). To appreciate the distinction, one needs to understand how social exchange theory is applied to economic transactions. Social exchange theory, which grew out of interrelating economics, psychology, and social concepts, views economic exchange relationships between specific actors as determined by one another's expectations. The theory posits that partners in the exchange will modify their resources contingent upon the mutual long-term benefits expected from the relationship. The theory was later expanded from dyadic models to network models through social network theory. In this theory, individual agency is subordinated to the broader structure of relationships and ties or lack of ties with other actors. Social network theory views relationships in terms of nodes (actors) and ties (relationships between actors). It is this social network and its maze of interrelationships among actors in the network that is used to determine the social capital of an individual actor (Granovetter, 1973; 1982; Burt, 1992; Scott, 2000).

Social capital, the outcome of the relationships, is the object that attracts firms to be embedded in their environment. The definitions of social capital in the literature draw a distinction between social capital and the structure that generates it. Three examples are cited here. Adler and Kwon (2002) defined social capital as the goodwill available to an actor (individual or firm), emanating from the structure and content of social relations enjoyed by the actor. Similarly, Nahapiet and Ghoshal (1998) defined social capital as the "sum of the actual and potential resources embedded within, available through and derived from the network of

relationships possessed by an individual or social unit” (p. 243). From a slightly different perspective, Knoke (1999) regarded social capital as a process “by which social actors create and mobilize their network connections within and between organizations to gain access to other social actors’ resources” (p. 18). Even when defined as a process rather than a distinct output, the separation of the mechanism (embeddedness) from the goal (social capital) is still clear.

In summary, social exchange and social capital theories emphasize that actors engaged in social relationships gain a valuable resource (Adler & Kwon, 2002; Burt, 1992), accessed through the structures that constitute the relationships or ties. The structures bond people with similar interests to generate what has been called bonding social capital, but may also bridge gaps between people with diverse interests to create what is known as bridging social capital. Notably, Granovetter’s (1973) weak and strong ties concept, and Burt’s (1992) structural holes theory, mirror these two types of social capital.

It seems logical to assume that access to the social capital resource would enable nascent firms to reduce the odds imposed by liability of newness, since the resource comes with a wide range of benefits related to social recognition and material support (Aldrich, 1999). Accordingly, this study argued that to the extent that nascent firms can initiate the development of social relations and exploit their value, the firms may be able to overcome the constraining institutional theory problem of lack of legitimacy and enhance their prospects of successful emergence. As Burt (1992) and Lin (2002) argued, network ties are critical to enabling a firm to access resources that others control, and according to Moran (2005: 1129), “social capital may well prove to be the firm’s most enduring source of advantage.” Besides, the strategy eases the problem that Hager et al. (2004) described as one of the primary conditions that threaten new firms’ ability to function: that new firms are not as well embedded in their populations as older

firms are. Nascent firms would be even more threatened and more inclined to benefit from embeddedness.

In nascent entrepreneurship literature, Davidsson and Honig, (2003) and Delmar and Davidsson (2000) found evidence that social capital is important for the nascent entrepreneurship *decision*. This is also supported by GEM data (Arenius & Minniti, 2005; Wagner 2004; de Clercq & Arenius, 2003). Similarly, Aldrich and Zimmers (1986) posited that stronger ties to resource providers facilitate the acquisition of resources and hasten the opportunity exploitation process. Kim, Aldrich, and Keister (2003), Aldrich and Cliff (2003), and Gartner et al. (2004) also suggest that it is important for nascent firms to have already established entrepreneurial firms in their networks. The latter's competence serving as capital that nascent ventures can draw upon to exploit their own opportunities.

Evidently, the more embedded a firm is, the greater its ability to exploit social capital. In general the extent to which any firm benefits from embeddedness will depend on the structure and quality of social ties among network members and the position of the individual firm in the broad network (Granovetter, 1985; Burt, 1992). The more close-knit the groups of firms are, and the more central the position of a firm in the structure, the higher will be the benefits. This statement holds generally true whether one is discussing structural, relational or social embeddedness (although there is an equally compelling argument for weak ties and structural holes (Granovetter, 1973; Burt, 1992)).

Relational embeddedness refers to the quality of a single dyadic relationship (Moran, 2005). In contrast, structural embeddedness refers to the extent to which the mutual contacts of the dyad are interconnected (Granovetter, 1992). In other words, structural embeddedness is impersonal; representing the aggregate configuration of the network ties and/or lack of ties (Nahapiet & Ghoshal, 1998; Moran, 2005), whereas relational embeddedness represents pair-



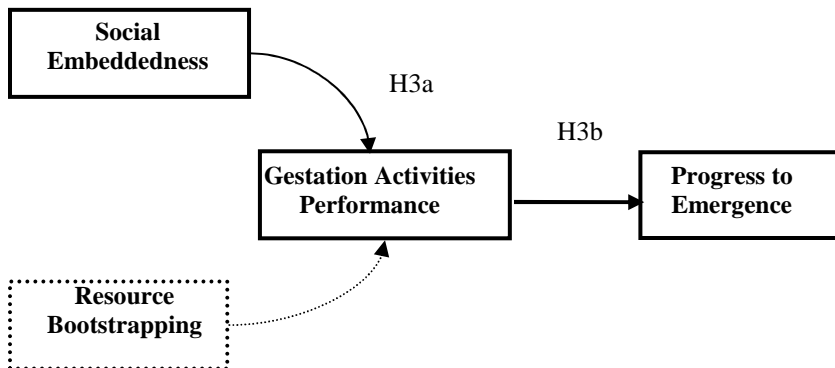
wise connections that have been developed over time (Nahapiet & Ghoshal, 1998; see also Granovetter, 1985). The focus of this research was on relational embeddedness and, similar to the approach used by Uzzi (1996) and Moran (2005), investigated the inclination of selected units and individuals to avail resources to nascent firms, based on the quality of the dyadic relationship between them. Related to relational embeddedness, Edmonds (1999) and McGinn and Keros (2002), defined social embeddedness as the extent to which understanding the behavior of an actor requires the inclusion of other actors as individuals rather than as an undifferentiated whole. The focus of the present study is not about how an entrepreneurial firm's behavior is affected by characteristics of the broader social network in which it is situated. Rather, the focus was on how the firm's behavior is affected by the social behavior of other individual units with which the focal firm has exchanged relationships. Examining the relationships in this manner enables the assessment of the actions of the partners, viewed as the consequences of self-driven or constructivist initiatives, rather than passive reflections of socially constructed reality (Edmonds, 1999). Using the personal relationships perspective permits inclusion of individual behaviors like haggling, opening up, and working together as forms of improvising for resources (e.g. in McGinn & Keros, 2002). This is important since entrepreneurship is modeled as a cognitive science in which phenomena, such as embeddedness, emerge from proactive and original individual behavior (Shaver, 2004).

- **Hypotheses 3a and 3b: The Significance of Social Embeddedness**

Social embedding gives nascent entrepreneurs the opportunity to access and exploit resources possessed or controlled by others. In spite of this, few studies in the entrepreneurship literature link the concept of embeddedness to the exploitation stage of firm development. The following two hypotheses were intended to underscore the significance of this social phenomenon to the process of firm emergence.

**Hypothesis 3a (H3a):** Manifestation of embedded ties with relevant publics in the organizational environment will be associated with higher gestation activities performance.

**Hypothesis 3b (H3b):** Gestation activities performance will mediate the relationship between social embeddedness and progress to emergence.



† Dotted lines and boxes represent relationships not specific to social embeddedness hypotheses  
**Figure 2.1:** Social Embeddedness Hypotheses

### 2.4.3 Resource Dependency Theory, Bootstrapping and Related Strategies

Despite its popularity with practitioners and popular press, academic entrepreneurship researchers have been slow on developing an understanding of resource bootstrapping and how it relates to firm development (Winborg & Landström, 2000; Harrison, Mason & Girling, 2004; Ebben & Johnson, 2005). As Harnish (2002) noted, resource bootstrapping is discussed extensively in the popular press but the enthusiasm does not extend to academic literature in the form of theoretical development, qualitative studies, or empirical analyses. What academic research is available on bootstrapping has centered mainly on financial practices through which resource constrained businesses finance required assets, obtain working capital, or delay payment of obligations to boost short-term liquidity (e.g., Winborg & Landström, 2000; Ebben & Johnson, 2005).

Winborg and Landström (2000), perhaps the most frequently cited work on financial

bootstrapping in small businesses, provides among other things, a catalog of financial bootstrapping techniques that have been replicated in other studies. There are, however, other forms of “promoting or developing a venture by initiative and effort” (see earlier definition of bootstrapping) focused on the reconfiguration of the limited resources available to the nascent firm, with a view to getting more or different outputs from them. The review below looks first at literature on financial resource bootstrapping and follows this up with other forms of resource creation or resource-saving.

Shane and Cable (2002), Carpenter and Peterson (2002), and Ebben and Johnson (2006) all affirm that young firms have difficulty in obtaining financing from traditional sources. For some, this may be because of information asymmetry (Carpenter and Peterson, 2002) and for others, because of higher transaction costs that increase the cost of borrowing (Jurik, 1998; Shane and Cable, 2002). These findings are in agreement with Stinchcombe’s (1965) liability of newness viewpoint and Pfeffer and Salancik’s (1978) resource dependence theory. Stinchcombe (1965) posited that due to lack of established reputation and operating experience, new firms are at the mercy of outside players – or at least more so than more established firms. Firms respond to these constraints by bootstrapping or finding creative ways to avoid the external need for financing (Ebben & Johnson, 2006). In many ways, the behavior of such firms resonates with Pfeffer and Salancik’s (1978) resource dependence theory. Firms faced with situations in which they have little leverage in obtaining requisite resources respond by bootstrapping as a means of reducing their dependence on others. In so doing, they enhance their chances of survival and success.

Winborg and Landström (2000) and Ebben and Johnson (2006) identified six broad categories of financial bootstrapping. These include: (1) the owner providing financial and other resources, (2) management of accounts receivable, (3) sharing resources with or borrowing the

same from other firms (relationship-oriented bootstrapping), (4) delaying payments, (5) minimizing resources invested in inventory, and (6) using subsidies from government. Harrison, et al. (2004) narrowed the categories to three: (1) reliance on internal funding, (2) low cost acquisition of financial resources (e.g., rotating credit associations), and (3) low cost acquisition of other start up resources (e.g., billeting workshop accommodation or conducting initial operations at home). The Winborg and Landström (2000) categorization is quite comprehensive and as such, has been frequently adopted by other studies, including this one.

Major findings of financial bootstrapping research are that bootstrapping techniques are extensively used (Winberg & Landström, 2000; Harrison et al., 2004); that there is considerable variation in the use and value of these techniques among high and low value businesses (Harrison et al., 2004); that smaller firms are more likely to use and value cost-reducing bootstrapping than exploitation of value-chain related relationships (Harrison et al., 2004); and that different types of bootstrapping are utilized at different periods of the emergence process (Ebben & Johnson, 2006). Findings also reveal that the methods coincide to some extent with organization theory predictions in general, and resource dependence theory (Ebben & Johnson, 2006) and learning theory (Miner, Bassoff, & Moorman, 2001) in particular. These findings are important in the sense that they open business founders' eyes to resources that lie beyond market oriented solutions to the problem of initial resource paucity (Winberg & Landström, 2000). The review of literature now turns to literature on other forms of resource bootstrapping techniques.

In addition to financial resources, nascent firms require human and social capital to perform the initial activities necessary for firm emergence. Exploitation of any social capital at their disposal will enhance their progress to emergence as will the knowledge, skills, and experience of their founders or founding teams. In terms of resource bootstrapping (and overlapping with social capital theory discussed earlier), Starr and MacMillan (1990) built a case

for what they termed resource cooptation through social contracting. The authors defined social contracting as “a process [in which entrepreneurs] exploit social assets they possess.” (p. 85) They argue that social contracting is critical in co-opting legitimacy and in co-opting underutilized resources. The social assets they refer to include friendship, trust, obligation, and gratitude, all of which can be used to secure resources for a new venture. Besides these resources, a nascent entrepreneur can look to previous working relationships, community ties, kinships, and voluntary connections for initial resources and support (Starr & MacMillan, 1990). Very importantly, social contracting can act as a solution to the new entrepreneurial firm’s credibility crisis through co-opting legitimacy. This earns the new venture stakeholder acceptance and with it, resources, customers, and potential revenue streams. At the same time, the nascent firm can co-opt underutilized resources held by friends and acquaintances. Starr and MacMillan (1990) identified four major sources of co-opting strategies including borrowing, scavenging, begging, and amplifying. Nascent firms may use borrowing strategies to secure, on a temporary basis, the use of assets or other resources owned by others; begging strategies to appeal to the goodwill or charitable nature of the resource owners; scavenging strategies to extract value from assets other firms have discarded; and/or amplifying strategies to lever more value out of an asset than that perceived by the original owner (Starr & MacMillan, 1990; Baker, 2003; Baker & Nelson, 2005). These bootstrapping strategies are similar to those investigated by Baker and Nelson (2005) in an ethnographic study of 25 resource-constrained firms. Baker and Nelson’s study found that small firms were “able to create something from nothing by exploiting physical, social, or institutional inputs that other firms *had rejected or ignored*” (p.325; emphasis added). Cooptation has in fact been long acknowledged as a flexible and simple mechanism for establishing legitimacy, gaining access to resources, and exchanging information (see, for example, Pfeffer & Salancik, 1978). Cooptation is related to, but distinguishable from alliances,

another social environment-related activity that equally enhances access to legitimacy and resources. While cooptation exploits the social assets one possesses, alliances may be formed with any organization where advantages such as visibility, contacts, synergies, experiences, or excess resources can be exploited to the advantage of the nascent firm (Eisenhardt & Schoonhoven, 1996; Shane & Cable, 2002; de Clercq & Arenius, 2003). The benefits to be gained from alliances can be explained by game theory (also known as the theory of social situations). Game theory encompasses organizational decisions made in situations where two or more players interact strategically to optimize outcomes (Amaldoss, Meyer, Raju, & Rapoport, 2000). Although the strategy is not peculiar to nascent firms, alliances are an important bootstrapping mechanism through which the nascent firms may access resources and gain legitimacy.

There are other bootstrapping techniques explored in literature. Garud and Karnoe (2003), Baker, Miner, and Eesley (2003), Baker and Nelson (2005), and Baker (2006, 2007), discuss *bricolage* as creatively “making do” with re-combinations of resources at hand as a strategy. Baker (2003:6) identified four possible outcomes of bricolage including: 1) imbuing resources that might otherwise be ignored or abandoned with new value; 2) calling forth hidden or seemingly unrelated resources; 3) the creation of novel and sometimes innovative products and processes in the absence of prior designs; and 4) providing goods and services not otherwise available. In another paper, Baker (2006) noted that because of contemporary norms, bricolage may be viewed negatively “as something one does, even shamefully, only when one has to.”

Bricolage appears to encompass Sarasvarthy’s (2001) *effectuation*, defined as taking the set of available resources as given and concentrating efforts on the most beneficial combination that can be created from the set. In other words, outcomes become dependent on only those

resources at the firm's disposal. However, similar to bricolage, creatively recombining existing resources may create value, up till then, unrealized.

Weick (1998), Miner, Bassoff, and Moorman (2001), and Hmieleski and Corbett (2006) discuss *improvisation* as the simultaneous design and execution of venture activities, i.e., as an extemporaneous, but deliberate strategy in which entrepreneurial firms revise their structures, content and direction as they go (Baker, Miner, & Eesley, 2001). Miner et al. (2001) were able to establish a positive short-term link between improvisation and organizational learning and observed that skilled improvisers are able to recombine existing practices into novel actions. Improvisation, which is an entrepreneurial characteristic, borrows from chaos and learning theories. This theory acknowledges the non-linearity and dynamism of certain systems (Gleick, 1987; Thompson, 2002). Given the resource access restrictions imposed on nascent firms by the liability of newness, it would be illogical to expect the path of emergence to be smooth and always predictable. Presumably, the practice of improvisation as a bootstrapping technique imposes order on some of the erratic consequences of resource and other sources of environmental unpredictability. Moreover, improvisation introduces flexibility in nascent firm decision-making that enables firms to respond to changes and to react to the unpredictability of their environment (Levy, 1994; Thietart & Forgues, 1995). As a reflection of learning theory, improvisers use the present to link the past and the future in circumstances surrounded by uncertainty. Such circumstances mirror those in which nascent firms often find themselves.

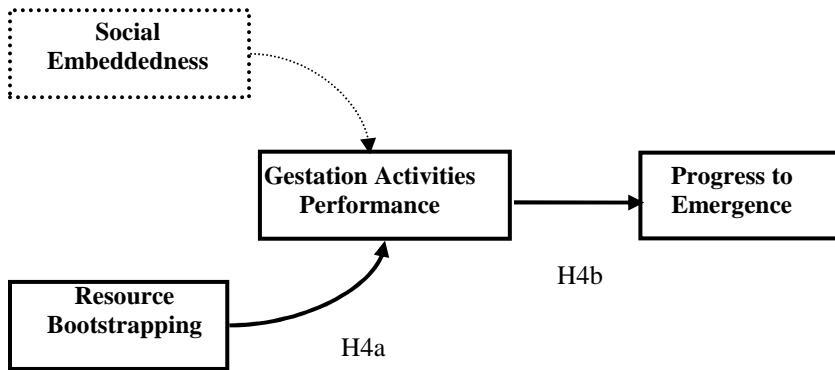
- **Hypotheses 4a and 4b: The Importance of Resource Bootstrapping**

It makes sense to assume that given nascent firms' peculiar resource constraints, bootstrapping is a logical strategy to move ventures along. Bootstrapping is taken here to encompass all efforts by nascent entrepreneurs to create new resources, to recombine existing resources, to co-opt underutilized resources, and to share resources with other firms in order to

overcome inherent resource disadvantages. Therefore in concert with the objectives of this study, the following hypothesis will be tested:

**Hypothesis 4a (H4a):** Manifestation of the use of bootstrapping techniques will be positively associated with higher gestation activities performance.

**Hypothesis 4b (H4b):** Gestation activities performance will mediate the relationship between bootstrapping and progress to emergence.



† Dotted lines and boxes represent relationships not specific to resource bootstrapping hypotheses

**Figure 2.2:** Bootstrapping Hypotheses

#### 2.4.4 The Resource Based View and Learning

Neo-institutional theory, Stinchcombe's liability of newness perspective, and resource dependency theory are all based on the undisputed premise that firms cannot exist, let alone prosper, in isolation. Consequently, they emphasize external relations and external resource bases. However all firms, new or old, also have internal resource bases. There is no legitimacy constraint attached to the use for the tangible or intangible resources held by the nascent firm. The onus is on the firm management to nurture, harness, and deploy them as advantageously as possible. Apart from the more obvious tangible assets, such resources also include knowledge (both acquirable and tacit) held by the firm's employees (Itami & Roehl, 1987), information from external social networks (Lee, Lee, & Penning, 2001), learning ability (March, 1998; Autio,



Sapienza & Almeida, 2000), ability to identify opportunities from the environment (Shane & Venkataraman, 2000), as well as internal exchange relationships that are as imbued with knowledge and learning opportunities as the external networks. Strategic management literature posits that firms will out-compete their rivals by building unique combinations of resource that are rare, valuable, costly to imitate, and non-substitutable (Ireland, et al., 2003). It seems logical that the most prudent route to performance advantage is through a dexterous exploitation of available internal resources, especially for firms that are disadvantaged in terms of accumulated external resources or access to resources. Moreover, even when abundant external resources are available, they can only be valuable if the firm has the internal capacity to utilize them (Lee, Lee, & Penning, 2001). One of the less obvious internal sources of performance advantage, also linked to improvisation activity, lies in applying lessons learned from previous experiences of both the focal firm and other competing firms. This is explained by sections of learning theory.

Learning theories hold that organizations have experienced learning when change in behavior is informed by prior experiences (Cyert & March, 1963; Levitt & March, 1988). Experience, whether it is of success or failure, is part of the human capital resource of the organization. This is widely acknowledged in the literature. What is not as frequently discussed is that apart from their own experiences, organizations may also learn from the experiences of other organizations in their population. Among other issues, Baum and Ingram (1998) discuss the significance of firms having a capacity for survival-enhancing learning from the experiences of other organizations and the importance of being affected by the experiences of other organizations at the time of their founding. Their work supports Levinthal and March's (1993) earlier assertion that organizations are likely to benefit from emphasizing exploitation of the successful explorations of others. Cases of failure also have knowledge value for founding entrepreneurs. As Baum and Ingram (1998) asserted, "[e]ven recklessly innovative organizations

that quickly fail can generate new knowledge that adds to the experience of the population.” (p.999) To use Baum and Ingram’s terminology, there are opportunities for both congenital (acquired during the process of development) and vicarious (realized through imagination or sympathetic participation in the experience of others) learning as a resource in the process of nascent entrepreneurship.

- **Hypotheses 5a and 5b: Learning**

Learning is an internal firm capability that may be exploited to move new ventures along, to consolidate the use of bootstrapping techniques, and to reduce dependence on external resources. Learning is evidenced by the use of past experiences to shape current decisions. One can surmise, therefore, that if resource bootstrapping and social embedding are indeed avenues that improve gestation activities performance and consequently aid progress to emergence, then evidence should show that repeat entrepreneurs deploy these strategies more than novel entrepreneurs as a result of lessons learned from previous usage. Hence the following hypotheses:

**Hypothesis 5a (H5a): Firms associated with serial entrepreneurs will be more likely to use bootstrapping techniques than those associated with novice entrepreneurs.**

**Hypothesis 5b (H5b): Firms associated with serial entrepreneurs will be more likely to exhibit a higher level of social embeddedness than those associated with novice entrepreneurs.**

## **CHAPTER 3: DATA AND MEASUREMENT**

This chapter explains how data for the study were collected and how the various variables in the study were measured. The chapter starts with an explanation of how the data collection instrument was developed, followed by details of sample selection and instrument administration. The next section gives details of how the variables in the study were operationalized. The chapter ends with a summary of all variables and their measurement.

### **3.1 Development of Data Collection Instrument**

Data were collected using an online questionnaire. The development of the questionnaire followed guidelines by Clark and Watson (1995) and Hayes, Richard, and Kabany (1995) regarding conceptualization, creation of items, and basic principles of item writing and instrument structuring. There are several recommendations in these guidelines. First, development of questionnaire items was preceded by an extensive literature search in the area of nascent entrepreneurship for similar studies. This included a review of constructs previously used, together with items used to assess these constructs. It was important to clearly delineate the domain and dimensions of nascent entrepreneurship, because entrepreneurship is not a uniformly defined concept and nascent entrepreneurship represents a relatively new concept in academic research. Second, the literature search ensured competent generation of instrument items. This was important because of the effect selected items have on measurement validity. As much as possible, the process of generating survey items took advantage of items previously used in empirical studies.

Where it was necessary to generate new items, this emanated from consultation with officers of small business development agencies. These individuals are regarded as experts on the dynamics of business start-up. Furthermore, during the process of pilot testing, suggestions from small business practitioners were incorporated in item rewording and the structuring of the

survey. To further ensure face validity of the instrument, I elicited comments from five academicians with experience in scale development and survey administration to check the proposed instrument for consistency, specificity, clarity of wording, appropriateness of the structure, and topology of items in the instrument, as well as instructions to participants. As previously indicated, the instrument was subjected to a pilot study. Four of the pilot study respondents were asked in face-to-face interviews for their reactions to the clarity, specificity, and appropriateness of the questions they had just answered. Their comments were incorporated in the process of improving the instrument.

Once developed, the instrument was adapted to an online format, using pre-designed software hosted by the Louisiana State University's computer department. The web page for the survey was <http://cvoc.bus.lsu/ss2/wsb.dll/wbyabashaija/NEStudy.htm>.

### **3.1.1 SurveyResponse Project at Syracuse University**

The study used the services of the SurveyResponse Project (SRP) at the School of Information Studies at Syracuse University to recruit a sample and administer the survey instrument. SRP is an academic research project that serves as a medium for facilitating online research for behavioral, social, and organizational science research by connecting researchers with individuals (called panelists) willing to participate in online surveys. (See project webpage: <http://studyresponse.syr.edu>). The project has hosted a wide variety of research projects from many universities in the United States, United Kingdom, Canada, and Australia. SRP uses volunteer panelists who are registered with the project. As of 2005, the overall number of panelists was 95,574 distributed over 40 occupations (source: project webpage, accessed 5/24/07).

For this particular study, the sample recruitment exercise started with the sending of a pre-survey screening inquiry intended to establish eligibility and willingness of panelists to

participate in the study.

The screening question was “Have you, alone or with others, engaged in the process of starting a business in the last 18 months, irrespective of outcome?” The choice of this question was guided by the most commonly used definition of nascent entrepreneurship in existing literature. As indicated in earlier chapters, this study adopted the definition of Gartner et al. (2004) regarding nascent entrepreneurs, which includes all individuals or groups of individuals engaged in performing activities considered as gestational in the process of developing a new business. Past research on nascent entrepreneurship (e.g., researchers using PSED data, Delmar & Shane, 2002, 2003, 2004; Diochon, et al, 2003) have used gestation periods ranging from 12 to 30 months. The 18 month time period selected for this study lies somewhere in between and is the most frequently used in recent empirical studies on nascent entrepreneurship.

There were a number of boilerplate questions to accompany the screening question. The questions were focused on panelist willingness to participate in the subsequent study and included such items as: “Are you agreeable to further contact about this study?” (Yes/no/depends on length/need more information) and “How frequently do you check your e-mail?” (Response categories ranged from 0 = rarely to 4 = at least once a day).

### **3.1.2 Concerns About Internet Data Collection**

Internet data collection often saves time because of its nature of rapid deployment, response, and readily tabulated data. However, Internet data collection also raises a number of legitimate data quality concerns. Stanton (2006) addressed researcher concerns about internet surveys and proposed several measures to overcome these concerns. Prominent among the concerns was selection of a representative sample, ensuring adequate response rates, and ensuring integrity of the data collected. Critics argue that the lack of direct contact with participants and the researcher’s inability to check the eligibility of respondents compromises the

integrity of the data. Additionally, internet data collection is beset by missing data and inadvertent or even malicious multiple responses. However since these weaknesses are known, they can be controlled. In agreement with the proposals of Stanton (2006), the design and administration of this study engaged in a deliberate effort to control for known and controllable sources of error. Measures taken included pre-notification to participants, attractive physical design of the survey instrument, a fairly short time required to complete the survey (no more than 20 minutes), reminders after one week to convert passive non-responders, completion incentives (a draw for six \$50 coupons to Home Depot), and most importantly, diligent post-collection screening and cleaning. The survey design, reminders, and incentives were focused on improving the response rate and diligent screening and cleaning controlled for data quality.

### **3.2 Survey Population, Sample, and Sampling Method**

The screening survey was sent to 10000 panelists. By deliberate design and on the assumption that minorities have less favorable access to resources, choice of panelists in the screening survey included all 1733 ethnic black American panelists registered with the project. Selection of the remaining 8267 panelists was random. The StudyResponse database generates random seeds (i.e., a number generated by random probability) that permit the same chance for all panelists to be selected into the sample. There are separate seeds for males and females to create a 50/50 percent gender balance. This generated a proportionate, gender-stratified sample. The response rate to the screening survey was 13.5%.

Of the 1352 individuals who responded to the prescreening survey, 627 satisfied the nascent entrepreneurship criteria. Respondents eliminated indicated that they had not engaged in nascent entrepreneurial activities in the prescribed time. Another 26 were eliminated because they did not wish to participate any further in the study. Consequently, the survey population consisted of 601 individuals.

### **3.2.1 Distribution of the Survey Population**

Demographic characteristics of the panelists to whom the survey instrument was sent are presented in Table 3.1 below, together with the characteristics of those who responded.

### **3.2.2 Response Rate and Sample Size**

Recruitment letters (see appendix) and the web link to the survey instrument were sent out on July 5, followed by reminders on July 12, 2007 to the 601 panelists in the survey population. There were 259 responses (43%) to the first call and a further 60 responses after the reminders were sent. This brought the total response to 319 with a satisfactory response rate of 53%. All responses were directly entered in a pre-designed SPSS worksheet.

In conformity with previous research (see Davidsson, 2006), to be a nascent entrepreneur, an individual or group of individuals had to have performed at least one gestation activity, even if this had not yet been completed. Consequently, responses that did not have at least one gestation activity performed were removed. There were 15 such submissions. Similarly, six responses appeared to be duplicate submissions. These six submissions contained similar information and were submitted at more or less the same time. This seemed to be a case of either unintentional or malicious multiple clicking of the “submit” button. Five of these responses were eliminated. Another five cases that had too few responses to constitute meaningful submissions were also deleted. In all, twenty four responses were weeded out. Case number 319 is also not included in analyses, because it was submitted after the analysis process had started. The eliminations reduced the final response rate to 49%.

Usable survey responses were 294 or 48.9% of the survey population. Based on the number of observations versus number of variables rule of thumb (according to Knapp, 1996, 10:1 is the most common ratio cited in research literature), the sample size was adequate for the number of variables in the study. Additionally, estimation using Cohen’s (1992; p.158) default dimensions

(medium effect size, 0.80 power, and  $\alpha = 0.05$ ), a sample size of 294 is considerably above the minimum recommended 147 observations for up to eight independent variables with multiple regression as the primary analysis method.

**TABLE 3.1:  
Demographic Distribution of Survey Population**

Demographic	Survey Population N = 601		Final Response n = 294*	
	Number	Valid %	Number	Valid %
Gender				
• Male	284	47.3	150	51.5
• Female	317	52.6	141	48.5
Race				
• Caucasian	360	59.9	176	62.4
• African American	89	15.0	37	13.1
• Hispanic	32	5.4	11	3.9
• Native American	11	1.8	2	1.7
• Asian/Pacific Islander	85	14.2	47	18.7
• supplementary	22	3.7	9	
				3.2
Age distribution				
• 20 or under	20	3.3	5	1.7
• 21-30	198	32.9	71	24.3
• 31-40	175	29.2	88	30.0
• 41-50	132	22.0	70	23.9
• Over 50	76	12.6	59	20.1
Employment status				
• Working full time	359	60.1	180	61.2
• Working part time	161	27.0	114	38.8
• Temporarily unemployed	10	1.7	-	-
• Retired or unemployed by choice	29	4.9	-	-
• Other	38	6.3	-	-
Education level				
• High school or less	116	19.4	32	11.0
• Associate degree	60	10.0	46	15.7
• Some college (no degree)	138	23.1	71	24.2
• College degree or higher	284	47.5	144	49.1

† Totals may not tally to n = 294 because of system missing items.



### 3.2.3 Respondent Characteristics and Non-Response Bias

Non-response bias occurs when the individuals responding to a survey differ from non-responders on variables relevant to the study (Rogelberg & Luong, 1998). The problem though, is that there is no data on variables of interest for non-responders. Consequently response bias is estimated using archival data on demographic characteristics, or by doing wave analysis, which compares early responders to those that respond after a reminder or reminders. The argument in the latter technique is that if the first deadline had been observed, then the late responders would have been in the non-response category (Rogelberg & Luong, 1998)

The demographic characteristics of the respondents, compared to the survey population to whom the survey instrument was sent, are presented in Table 3.1 above. Generally, the respondents have similar demographic characteristics to the survey population, except for the age distribution, which peaks in the 21-30 age group for the population, but in the 31-40 age group for the sample. In both the survey population and the respondents' demographics, about half of the subjects have a four year college degree or higher. There are about 60% white Caucasians, with 15% African Americans in both the sample and the survey population, but the number of Asian/Pacific Islanders was higher by three percentage points in the sample.

A Wilcoxon signed-rank test, performed on the percentage distributions of the sample demographic characteristics and the survey population, shows equal positive and negative differences with a significance value of .935 ( $>> .05$ ). This indicates that one cannot conclude that the sample and the survey population have different distributions.

Additionally, the correlation coefficient between paired demographic categories of the two distributions is .971 with a significance value less than .001 – a further indication that observed differences are more a product of chance than systematic differences in the sample and the population from which it was drawn.

Using wave analysis, the first 50 respondents were compared to the last 50 on current state of business venture – the dependent variable. The 95% confidence intervals of means of the two groups on this variable are comparable (2.5 - 3.4 for the first group, and 2.5 – 3.6 for the second group) and their coefficients of variation are not too different (25% for the first group and 33% for the second group). This analysis supported the surmise that there was minimal response bias.

### **3.3 Measurement of Variables**

The ultimate response variable in this study was progress to emergence (PTE) and the primary predictor variables were bootstrapping and social embeddedness. Apart from these, the theoretical model hypothesized the presence of a mediating influence, gestation activities performance (GAP). Consequently, GAP was investigated simultaneously as a response variable to bootstrapping and social embeddedness and a predictor variable to PTE.

Furthermore, the study acknowledged and controlled for three potentially confounding influences: namely, type of industry in which the new venture competed; the novelty of the business idea; and the founding experience of the individual initiating the venture.

All the data used in the measurement of these variables were collected in the online survey as previously indicated. Details of how these data were metrically treated to represent the variables in the study are reported below.

The account starts with the dependent variable (progress to emergence), followed by the mediator (gestation activities performance), the independent variables (resource bootstrapping and social embeddedness), and finally the control variables. Many of these variables have been used before in nascent entrepreneurship research (see Davidsson, 2006) and their metric treatment in this study does not differ substantially from their previous operationalizations. The following sections elaborate how the variables were measured in this study.

### 3.3.1 Progress to Emergence

Progress to emergence is the response variable of the study. This is a frequently used dependent variable in nascent entrepreneurship research (e.g., Davidsson and Honig, 2001; Samuelsson, 2003; Delmar and Shane, 2003; Diochon et al., 2003; Newbert, 2005). Even so, different studies have used different approaches in operationalizing the variable. This study followed Diochon et al. (2003), who measured progress to emergence using a self-reported assessment of the status of the venture. Similar measures, some with collapsed response categories, were also used by Carter et al. (1996), Hills, Lumpkin, & Baltrusaityte (2004), and Baltrusaityte, Acs, & Hills (2005). Diochon et al.'s (2003) instrument restricted the responses to a four point scale with 'abandoned,' 'dormant,' 'still trying,' and 'up and running' as anchors. My study introduced a slight modification of the last anchor to distinguish between 'fast emerging' and 'slowly emerging' attempts (see item 19 on the survey instrument). The purpose of expanding the anchors was to induce increased variation in the responses. The responses were coded 1 to 5, with one representing the 'abandoned' and five representing the 'fast emerging' status. The distribution of the variable displayed a mean of 3.47, SD = 0.94 and skewness = -0.53.

Apart from the current state of the venture, the survey asked two other questions relating to progress to emergence. Item 9 on the survey inquired, "In your opinion, how much of the start-up process have you completed?" The response categories were 1) close to 0%, 2) close to 25%, 3) close to 50%, 4) close to 75%, 5) close to 100%, and 6) 100%. In subsequent analysis, categories 5) and 6) were collapsed into one and coded 5. Item 10 asked, "In your opinion, how soon will you complete the start-up process?" The response categories were 1) 12 months or more, 2) 9 – 11 months, 3) 6 – 8 months, 4) 3 – 5 months, 5) less than 3 months, and 6) already completed. As in item 9, the last two categories were collapsed into one and coded 5. The two

variables were used as robustness checks of findings generated in regression analyses, in which the 'current state of the venture,' was used as the dependent variable.

### **3.3.2 Gestation Activities Performance**

Davidsson (2006) describes the gestation activities performance variable as central in research on the nascent entrepreneurship exploitation process. The prominence given to the variable is in agreement with the typology of Gartner (1985) regarding the dimensions that account for organizational start-up in which performance of gestation activities features as the second dimension. Similar emphasis on gestation activities is evident in publications that have come after the release of the PSED longitudinal data (e.g., Carter et al., 2004; Delmar & Shane, 2003; 2004; Samuelsson, 2001). The present study centered on the performance of gestation activities, with a view to integrating the findings with other ongoing nascent entrepreneurship research efforts. The study asked respondents to indicate which of the listed 18 gestation activities they had attempted on a Yes =1 and No = 0 scale (see item 2 on the survey instrument). Of the 18 activities on the list, the first five were categorized as legitimating activities. The next ten were operational activities, and the last three were marketing activities (see table 3.2 below). All the items on this list of gestation activities were adopted from Carter et al. (1996), Gartner and Carter (2003), and Gartner et al. (2004). However, items on these authors' lists which appear to overlap with the social embeddedness variable (e.g., developing associations with other business people or developing links with business development agencies) were omitted from this study's gestation activities list.

Many of the activities in Table 3.2 (e.g., preparing a business plan or developing a prototype of the product) involve a number of progressive steps from inception of the activity to its completion. Consequently, to obtain a more meaningful performance measure, respondents were asked to indicate the extent of completion of these activities on a percentage scale (see item

5). The latter item was then recoded into an ascending five-point scale with 0 (for activity not yet started); 0.25, 0.5, and 0.75 for activities underway to denote initial stages, middle stages and advanced stages of completion, respectively; and 1 for fully completed activities. Single step activities (e.g., registering a business trade name or making a first sale) were given a value of 1 if the respondent said they had performed them and 0 otherwise.

**TABLE 3.2:  
Categorization of Gestation Activities**

Category	Activity
Legitimizing activities	2A: Prepared a business plan
	2B: Registered a business trade name
	2C: Opened a business bank account
	2D: Applied for licenses/permits
	2E: Applied for patent/trademark/copyright
	2F: Devoted full time to business
Operational activities	2G: Hired employees
	2H: Invested own money in business
	2I: Requested financial support
	2J: Purchased equipment/machinery
	2K: Rented/leased facilities/equipment/machinery
	2L: Purchased operating supplies or merchandise for resale
	2M: Purchased raw materials
Marketing activities	2N: Developed prototype of product
	2O: Produces goods/services
	2P: Identified target market(s) for products/services
	2Q: Promoted products/services
	2R: Made first sale

The product of the activities performed measure (item 2) and the recoded stage of completion measure (item R5) constituted the raw gestation activities performance (GAP) score for each respondent (i.e.,  $GAP = \text{activity performed times (recoded) stage of completion}$ ). For each activity, therefore, there were five alternative behavioral steps.

### **3.3.3 Factor Analysis of Gestation Activities Performance (GAP)**

Existing literature (e.g., Delmar & Shane, 2003; Gartner et al., 2004; Davidsson, 2006) proposes that gestation activities can be subdivided into distinct dimensions, namely legitimating

activities, operational activities, and marketing related activities or labels to this effect. Consequently, the data on gestation activities performance in this study was subjected to factor analysis, not only to affirm the existence of these three dimensions, but also to reduce the number of items entered in subsequent analyses. The results of the factor analysis are presented in Table 3.3 below.

**TABLE 3.3:**  
**Exploratory Factor Analysis of Gestation Activities**  
**Performance Pattern Matrix<sup>a</sup>**

Q#	Item classification	Factor		
		1	2	3
V2WA:	Legitimizing activity	<b>.631</b>	.052	-.217
V2WB:	Legitimizing activity	<b>.646</b>	-.068	.029
V2WC:	Legitimizing activity	<b>.643</b>	.029	-.025
V2WD:	Legitimizing activity	<b>.641</b>	-.106	.093
V2WM:	Operational activity	.027	.005	<b>.740</b>
V2WN:	Operational activity	-.041	.007	<b>.601</b>
V2WO:	Operational activity	.183	.195	.353
V2WP:	Marketing activity	.252	.335	.070
V2WQ:	Marketing activity	-.115	<b>.990</b>	.102
V2WR:	Marketing activity	-.038	<b>.580</b>	.080

Extraction Method: Principal Axis Factoring; Rotation Method: Oblimin with Kaiser Normalization (delta = .2); <sup>a</sup> Rotation converged in 5 iterations

As the table above shows, four items (2A, 2B, 2C, and 2D; see gestation activities list on table 3.2, page 60) loaded squarely on one factor, i.e., the legitimating activities dimension, three items (2M, 2N, and 2O) loaded on a second factor, i.e., operational activities dimension, and three items (2P, 2Q, and 2R) loaded on a third factor, i.e., marketing oriented activities dimension. It is this reduced number of items and their loadings converted into scores that are used in subsequent analyses.

According to Gorsuch (1974), the “main reason for computing factor scores is to put the results of factor analysis to work by providing interesting new variables to be used in research

without including all the original variables” (p. 237). There are two options for using the loadings of the salient items (or variables in Gorsuch’s terminology). One is to use all loadings, big or small, cross-loaded or not, to compute a factor score for each subject. The alternative is to place each item on only one factor on which it has the strongest relationship and treat its loadings on other factors as non-salient. If the loadings on other factors are significant, the item is eliminated from measuring any factor. This study used the latter option because, as Gorsuch (1974) argued, it results in a set of scores that (a) are experimentally independent and (b) avoid spurious correlations among factor scores.

Once the items had been identified with the three different factors (dimensions), the next question was how to weight them. The options were either to use unit weights, i.e., give each salient item a value of one and the rest zero, or to use differential weights for each item. The study opted for the latter, using respective loadings as the weights. This way, scores for each subject are more dependent on those items that correlate highly with the factor (although Gorsuch argues that the method produces results that are almost similar to the zero-one weights). Another argument in favor of differential weighting using loadings is that when the sample size is large ( $n > 200$ ), the weights are considered to be generalizable (Gorsuch, 1974).

The selected items account for 41% of the variation in the legitimating activities dimension, 45% in the operational activities dimension, and 66% in the marketing oriented activities dimension.

### **3.3.4 Sequencing of Gestation Activities**

The study measured two other issues related to gestation activities. Respondents were asked which of the 18 activities was performed first (item 3) and the time span within which the activities were performed (item 4). There is an ongoing debate about whether the sequence in which gestation activities are performed is associated with progress to emergence. Carter, et al.

(1996), Liao and Welsch (2002), and Newbert (2005) found no significant relationship, but Delmar and Shane's (2003b, 2004) studies concluded that sequence matters. As a contribution to this debate, this study sought to determine whether starting with legitimizing activities rather than operational or marketing oriented activities made a difference to progress to emergence. The premise for assuming that this order should lead to superior results stems from the belief that legitimacy earns the nascent firm acceptance in the organizational field and with it, access to resources for operations and also to markets to dispose of outputs. To operationalized the variable, responses to the "Which was your first activity" question (item 3 on the survey instrument) were recoded into a dichotomous variable with "legitimizing activities" = 1 and "all else" = 0.

### **3.3.5 Pace of Gestation Activities Performance**

The study used duration as a measure of proficiency in activities performance. Duration was defined by Delmar and Davidsson (1999) as the length of time elapsed since the first activity was undertaken. Dividing the number of activities performed by duration produced the pace of gestation activities performance. A similar measure was used by Honig, Davidsson, and Karlson (2005), using Swedish PSED. The interest of the study was to determine whether the pace at which activities are undertaken had a bearing on progress to emergence. Lichtenstein, et al. (2004) found that chances of emergence were enhanced by a slower pace of execution. One would however assume that logic dictates the opposite. Consequently, the study sought to pit activities per unit time against progress to emergence. The pace variable was metrically expressed as: number of activities performed/time period since first activity (i.e., duration).

Examination of the histogram of the pace variable showed four observations (one each with a score of 14 and 13 and two with a score of 9; a total of 1% of all observations) that appeared to be very large and different from the majority of the cases in the data set (Median



score is 2.0). Further inspection of the data set suggested that these were cases of misreporting. Since it was not possible to correct them without reference to the respondents concerned, all the four cases were deemed to be outliers and removed. The resulting distribution for the variable was as follows: Mean = 2.07, SD = 1.30, Skewness = .725 (SE of skewness = .14), and n = 286.

### **3.3.6 Social Embeddedness**

As indicated in earlier sections of this report, this study regarded embeddedness as an antecedent to legitimacy. The interest of the study in legitimacy lay in whether the new venture was sufficiently embedded in its environment to garner access to resources needed to perform gestation activities as well as access to markets for its outputs as necessary first steps to becoming a fully fledged business organization. In accordance with literature (Stinchcombe, 1965; DiMaggio & Powell, 1983; Suchman, 1995; Delmar & Shane, 2004; Hager & Galaskiewicz, (2004), the study assumed that lack of embeddedness compromises acceptability by relevant business partners and consequently diminishes access to requisite resources and markets.

The degree to which a nascent firm is embedded in its organizational field was measured by self-reported assessment of the firm's relationship with bankers, suppliers, skilled workers, friends and acquaintances, established businesses, contractors, distributors, and local, state, or federal agencies. Respondents were asked to indicate on a five point scale (Item 17 on the survey) the extent to which they could count on each of the above categories of business correspondents for support. Although operationalized somewhat differently, empirical research on strong ties (e.g., Uzzi, 1996; Singh, 2000) lends support to the expectation that such relationships are associated with firm performance, particularly when they are characterized by reciprocity and trust. According to Singh (2000), strong ties [with relevant publics] are not only significant sources of information; they are also sources of emotional support for nascent

entrepreneurs. Similarly, ability to count on institutional agencies provides access, if not to requisite physical resources, to non-redundant information about exploitation of opportunities as suggested by Granovetter (1973), Kirzner (1997), and Singh (2000) in their discussions on the importance of weak ties.

This study used a total of 17 items as listed in table 3.4 below to assess the extent of trust and support from relevant publics as perceived by the respondent. As expected, not all the 17 items measured different concepts. Therefore, using factor analysis, the items were subsequently grouped into three dimensions which were named familial embeddedness, supply chain embeddedness, and institutional embeddedness in accordance with the content of the items that clustered together. As Steven (2002) pointed out, such reduction in the number of items reduces the sample size to number of variables ratio ( $n/k$ ) and makes available more degree of freedom for more robust analyses. Similar to the case developed for gestation activities performance factor analysis, the factor loading on each of the salient factors was used as a weight for calculating a score for each subject on each dimension. The embeddedness variable is therefore represented by three dimensions subtitled familial, supply chain, and institutional embeddedness, each with a set of indicators (i.e., the salient items; see Table 3.5). Where called for (e.g., in hypothesis 3b), the three dimensions were linearly combined into one composite variable – social embeddedness.

### **3.3.7 Bootstrapping**

The second independent variable in the study was resource bootstrapping, i.e., improvisation for resources not readily available to the nascent firm. This was measured using three sets of bootstrapping practices, totaling 27 items in all. All these items were adapted from Winborg and Landström (2000), Baker, Miner, and Eesley (2001), Baker and Nelson (2003), Garud and Karnoe (2003), Harrison, Mason and Girling (2004), and Baker (2006).

**TABLE 3.4:**  
**Initial Embeddedness Items List**

Q #	Item
17A	Can count on family members for financial support
17B	Can count on family members to work for free or at below market wages
17C	Can count on friends and/or acquaintances to work for free or at below market rates
17D	Can count on financial support from other business people
17E	Can count on resource support (e.g., tools and equipment) from other business people
17F	Can count on network support (e.g., connections to suppliers, distributors, bankers, etc.) from other business people
17G	Can count on other business people for business information (e.g., about pricing, sources of materials)
17H	Have good mutual working relationship with bankers
17I	Have good mutual working relationship with suppliers of raw materials and supplies
17J	Have good mutual working relationship with suppliers of machinery and equipment
17K	Have good mutual working relationship with leasers of work space
17L	Have good mutual working relationship with skilled worker (working for you)
17M	Have good mutual working relationship with independent contractors
17N	Have good mutual working relationship with distributors of products
17O	Can count on local/state/federal agencies for financial support
17P	Can count on support of local/state departments for trade information
17Q	Can count on support of local/state/federal agencies for business advice and training

**TABLE 3.5:**  
**Factor Analysis of Social Embeddedness Items**

Q#	Item Classification	Factor		
		1	2	3
V17A:	familial embeddedness	.186	.147	<b>.604</b>
V17B:	familial embeddedness	.197	.006	<b>.899</b>
V17C:	familial embeddedness	.120	.156	<b>.673</b>
V17I:	supply chain embeddedness	<b>.800</b>	.048	.142
V17J:	supply chain embeddedness	<b>.822</b>	.133	.112
V17L:	supply chain embeddedness	<b>.741</b>	.152	.099
V17M:	supply chain embeddedness	<b>.725</b>	.100	.033
V17N:	supply chain embeddedness	<b>.816</b>	.154	.086
V17O:	institutional embeddedness	.239	<b>.799</b>	.091
V17P:	institutional embeddedness	.294	<b>.874</b>	.107
V17Q:	institutional embeddedness	.252	<b>.741</b>	.197

Extraction Method: Principal Axis Factoring. Rotation Method: Quartimax with Kaiser Normalization; <sup>a</sup> Rotation converged in 4 iterations.

For each item, respondents were asked whether they had used the strategy on a yes/no scale (items 11, 12, and 13). The responses were later coded 1 and 0, respectively, for analysis. Respondents were also asked about the frequency of use of these bootstrapping practices on a three point scale – “only a few times,” “intermittently,” and “routinely” (items 14, 15, and 16). These were coded 1, 2, and 3 respectively for analysis. The product of the coded responses to the two questions was used as raw data for the three dimensions of bootstrapping. As in the case of social embeddedness and for the same reasons, the number of items was later reduced from 27 to 9, using exploratory factor analysis.

Generic terms used in nascent entrepreneurship literature for resource creativity include bricolage (Baker & Nelson, 2003), improvisation (Baker, Miner, & Eesley, 2001; Hmieleski & Corbett, 2006), financial bootstrapping (Winborg & Landström, 2000; Harrison, Mason &

Girling, 2004; Ebben & Johnson, 2006), alliances (Shane & Cable, 2002; De Clercq, 2003; Kim et al., 2006), and effectuation (Sarasvathy, 2001). These terms were defined in chapter two of this report. This study did not intend to test any one of these practices specifically but at the time of instrument development, the initial 27 items were subdivided into three resource creativity categories – new resources, reconfiguration of existing resources, and resource sharing.

New resources category items were about the respondent's attempts to improve resource availability by taking new partners, using financial instruments like credit cards, obtaining grants, and saving on resources by obtaining below market rates from resource providers.

Reconfiguration of resources included items leaning toward attempts to obtain increased leverage by recombining existing resources or through using leased materials rather than outright purchases. The third category, sharing resources, was about using existing networks to co-deploy machines, equipment, labor, and information.

The three categories are closely related to topical constructs in current research. The new resources category maps directly onto financial bootstrapping. Reconfiguration of new resources is an overlap of bricolage, improvisation, and effectuation, while resource sharing is related to, yet broader than, alliances. Table 3.6 below shows lists the original 27 items in the three categories and Table 3.7 portrays the truncated lists after factor analysis.

Apart from item V12WJ, all the other items load independently on different factors. However the third hypothesized resource bootstrapping dimension – new resources (V11) – did not show significant loadings, save for item V11J (obtained grants from local, state, or federal agencies), which loaded on the resource configuration dimension. The item was added to the other salient items under resource reconfiguration to create the first dimension, renamed financial bootstrapping. The ten items under the resource sharing dimension split into two factors that distinguished between tangible and intangible resource sharing. These were so named in

**TABLE 3.6:**  
**The Initial 27 Resource Bootstrapping Items**

Q#	New resources	Q#	Resource reconfiguration	Q#	Resource sharing
11A	Took in new partners	12A	Hired temporary rather than permanent employees	13A	Shared work space with another firm or firms
11B	Used credit card to finance business	12B	Used barter to get machines, materials, and/or services	13B	Shared employees with another firm or firms
11C	Obtained loans from family and/or friends	12C	Negotiated credit or deferred payments for resources	13C	Share equipment with another firm or firms
11D	Used money from your other businesses	12D	Leased rather than purchased equipment	13D	Borrowed equipment from another firm or firms
11E	Obtained advance payments from customers	12E	Purchased used rather than new equipment	13E	Outsourced part of my operations
11F	Used unpaid family members and/or friends	12F	Deliberately delayed payments to creditors	13F	Shared business information with another firm or firms
11G	Obtained resources from friends or associates at below market: rates	12G	Stripped resources from other projects	13G	Shared business connections with another firm or firms
11H	Used network connections to access resources you were previously unaware of	12H	Worked from home to save rent payments		
11I	Negotiated professional services at below market rates	12I	Enticed credit customers to pay sooner		
11J	Obtained grants from local, state, or federal agencies	12J	Received deferred payment terms from suppliers		

subsequent analysis. As in previous cases, factor loadings of the most salient items were used as weights to create new variables. The resource bootstrapping variable was represented in analysis by three dimensions: financial bootstrapping, tangible resource sharing and intangible resource sharing. Variance explained by each of these dimensions was 57%, 67%, and 82%, respectively.

### 3.3.8 Reliability Analysis

Table 3.8 below shows the internal reliability tests of the items used as independent and mediator variables. All the measures for the independent variables are above the recommended threshold of Cronbach  $\alpha = .70$ . Given these results, and based on their similarity to previous empirical research, all the items were used in subsequent regression analyses.

For the mediator variable, gestation activities performance, Cronbach's  $\alpha$  was .71 for legitimating activities, .65 for operational activities, and .68 for marketing activities. Although the last two are slightly lower than the nominal  $\alpha = .70$ , all the items were retained for subsequent analysis, due to a similarity to previous nascent entrepreneurship research efforts.

**TABLE 3.7:**  
**Factor Analysis of Bootstrapping Items: Rotated Factor Matrix<sup>a</sup>**

Q#	Item classification	Factor		
		1	2	3
V11WJ	financial bootstrapping	<b>.657</b>	.160	-.014
V12WC:	financial bootstrapping	<b>.750</b>	.192	.028
V12WD:	financial bootstrapping	<b>.655</b>	.082	-.063
V12WJ:	financial bootstrapping	<b>.921</b>	-.121	.460
V13WA:	tangible resource sharing	-.144	-.132	<b>.623</b>
V13WB:	tangible resource sharing	-.116	.096	<b>.980</b>
V13WC:	tangible resource sharing	-.136	.087	<b>.983</b>
V13WD	tangible resource sharing	.258	.132	<b>.600</b>
V13WF:	intangible resource sharing	-.190	<b>.835</b>	.170
V13WG:	intangible resource sharing	-.080	<b>.976</b>	.058

Extraction Method: Principal Axis Factoring; Rotation Method: Oblimin (delta = .5) with Kaiser Normalization; <sup>a</sup> Rotation converged in 7 iterations.

**TABLE 3.8:**  
**Reliability Analysis**

Measure	No. of Items	Cronbach $\alpha$
Financial bootstrapping	4	.72
Intangible resources sharing	2	.82
Tangible resources sharing	4	.87
Familial embeddedness	3	.79
Supply chain embeddedness	5	.89
Institutional embeddedness	3	.89
Legitimizing activities performance	4	.71
Operational activities performance	3	.65
Marketing activities performance	3	.68

### 3.4 Control Variables

The study acknowledged that performance of gestation activities and venture resource requirements may be influenced by the type of opportunity being exploited, the specific industry, and nascent entrepreneurial experience. Consequently, the study sought to control for the degree of novelty in the idea being pursued (item 18), the industry in which the venture will compete (item 1), and the founding experience of the nascent (item 22).

#### 3.4.1 Idea Novelty

Idea novelty is one of the indicators of entrepreneurial innovation (the other being successful commercialization of the idea). Sections of entrepreneurship literature regard innovation as the identifying characteristic of entrepreneurship (e.g., Schumpeter, 1934; Drucker, 1994). Innovation may, however, mean different things to different people. There is a considerable amount of literature that discusses, to varying degrees, the distinction between invention, innovation, and imitation as entrepreneurial activities (e.g., Ahuja, 2000; Greve, 2003; McDaniel, 2005). In this study, idea novelty was used as the proxy for innovativeness and was measured along Schumpeter (1934) and Drucker's (1994) characterization of innovative firms. In



this characterization, innovative firms are identified by activity that is new and different from what is currently available or practiced in the respective industry. Innovative activities that satisfy this qualification include: 1) new product or service, 2) new sources of raw materials, 3) new production processes, 4) new technology, and 5) new organization (see also Table 3.9 below). In line with this characterization, item 18 on the study's survey instrument provided five options to choose from. Four of these options were from the above list. "New organization" was left out because it was considered to be common to all nascent firms. All of the four options included in the survey present an element of novelty, and therefore partially satisfy the Schumpeterian definition of innovation. These four were later coded 1. One option did not satisfy the idea novelty requirement (i.e., offering goods or services already on the market). Accordingly, responses that selected this option were later coded 0. Respondents were required to select only one of the five options.

### **3.4.2 Type of Industry**

The responses to the type of industry in which ventures hoped to compete were categorical in nature. The categories used in the instrument followed a compressed classification similar to that used in data forms from SBDC pre-venture workshops.

The five options on this item, namely, manufacturing, construction, wholesale, retail, and services were nominally coded 1 to 5. However, the study conjectured that if indeed there were differences in resource requirements and usage among different industries, these could be reasonably dichotomized into a manufacturing and construction group on one hand and a trade and services group on the other.

The assumption here was that the former group requires considerably more resources to operate than the latter. Therefore, for analytical purposes, manufacturing and construction responses were coded as 1 and "all else" as 0.

**TABLE 3.9:  
Control Variables Items**

Variable	Q#	Items
Idea novelty	18	Which of the following best describes your business venture? 1. Offering new products/services not currently on the market 2. Offering existing products/services, but using different inputs 3. Offering existing products/services, but using a different production process 4. Offering products/services already on the market 5. Offering existing products/services, but in a different market 6. other (please specify)
Type of Industry	1	Which of the following categories best describes the industry you are in? 1. Manufacturing 2. Construction 3. Wholesale 4. Retail 5. Services 6. Other (please specify).
Founding experience	22	What is your business founding experience? 1. First time 2. Second time 3. Third time 4. Four or more times.

### 3.4.3 Founding Experience

Entrepreneurs may be classified as novice if the current venture is their first effort, as serial entrepreneurs, if they habitually found entrepreneurial ventures, and as parallel entrepreneurs if they are developing two or more new businesses simultaneously. In this study, founding experience was assessed along a novice/serial entrepreneur scale by asking respondents the number of times they had engaged in starting a business. The options were: founding for the first time, second time, third time, and four or more times. First time responses were coded 0 to denote novice entrepreneurship and “all else” were coded 1 to denote serial entrepreneurship.

Parallel entrepreneurs were assumed to fit a more-than-one-time profile and were included in the serial entrepreneur group.

For testing the hypothesis about learning experience (H5), the original measurement of the variable with four anchors was applied.

### **3.5 Other Classification Variables**

As is common in studies of this nature, the survey instrument included demographic variable measurements such as age, gender, education level, and ethnic origin. These were useful in the comparison of the sample to the target population, estimation of response bias, and were also used in regression analysis, together with the control variables indicated above, to alienate the explained variance due to the independent variables being tested.

Age of the respondent was measured in years and presented in five groups. The first and last groups (below 20 and 51 years or older) were open and the rest had 10-year ranges. For analysis, the groups were coded from one to five.

Gender was a categorical variable distinguishing between males and females. The variable was subsequently coded “zero” for female and “one” for male responses.

Education level was measured according to the highest level of education attained. The levels included: some high school, high school diploma, some college or community college, associate degree, college degree or higher, and an “other” category. These were coded one to six respectively.

The ethnic origin question had eight options, including: Caucasians, African American, Native American, Hispanic, Pacific Islander, Asian/Chinese/Indian, Native Africans, and a category for “other” groups. These were coded categorically from one to eight. However, for most of the analysis, the variable was dichotomized into “one” for the majority Caucasians and “zero” all the other groups classified in the study as minority.

### 3.6 Summary of All Variables and Their Measurement

Table 3.10 below summarizes all variables and their measurement.

**TABLE 3.10:  
Summary of Variables and Their Measurement**

Variable	Measurement
<b>Dependent</b>	
1. Progress to Emergence (PTE)	Self assessed current stage of venture on a five point scale (1 = Abandoned; 2 = Dormant; 3 = Still trying; 4 = Slowly emerging; 5 = Fast emerging)
2. Gestation Activities Performance (GAP)	Survey item 2 * survey item 5 as recoded. Different items represent legitimizing, operational, and market oriented activities following factor analysis
<b>Independent</b>	
3. Social Embeddedness <ul style="list-style-type: none"> <li>- familial embeddedness</li> <li>- supply chain embeddedness</li> <li>- institutional embeddedness</li> </ul>	Survey item 17 as factor analyzed into familial, supply chain, and institutional embeddedness
4. Resource Bootstrapping <ul style="list-style-type: none"> <li>- financial bootstrapping</li> <li>- tangible resources bootstrapping</li> <li>- intangible resources bootstrapping</li> </ul>	Survey item 12 and 13 * survey item 15 and 16 as factor analyzed
<b>Control</b>	
5. Type of Industry	Manufacturing and construction = 1 All else = 0
6. Idea Novelty	New/different = 1 Else = 0
7. Founding Experience	Serial = 1 Novice = 0

## CHAPTER 4: RESULTS

This chapter presents findings from the statistical analyses of the relationships hypothesized in the theoretical model and developed in Chapter 2. After presenting descriptive statistics relating to the variables in the study, the chapter then presents analyses related to gestation activities performance. These analyses include an examination of the importance of the sequence in which gestation activities are performed; the relationship between the pace of activity performance and progress to emergence; and the regression results of the association between resource bootstrapping, social embeddedness as predictor variables, and gestation activities performance as the outcome variable. This is followed by analyses relating to the relationship between social embeddedness and resource bootstrapping as independent variables, gestation activities performance as a mediator, and progress to emergence as the outcome variable. Analyses here include tests of direct association between gestation activities performance and progress to emergence followed by the examination of gestation activities performance as a mediating variable between resource bootstrapping and social embeddedness on one hand, and progress to emergence on the other hand. The chapter ends with a summary of all the hypotheses in the study.

### 4.1 Descriptive Statistics

Table 4.1b below presents a matrix of means, standard deviations, and zero order Pearson's correlations of all the variables in the study. These bivariate analyses indicate preliminary support for the relationships hypothesized in the study's theoretical model. All three gestation activities performance dimensions are significantly and positively associated with financial bootstrapping ( $r = .37, p < .01$ ;  $r = .35, p < .01$ ;  $r = .17, p < .01$  for legitimating, operational and marketing activities, respectively), tangible resources bootstrapping ( $r = .18, p < .01$ ;  $r = .16, p < .01$  for legitimating and operational activities, respectively), and intangible

resources bootstrapping ( $r = .19, p < .01$ ;  $r = .12, p < .05$ ;  $r = .16, p < .01$  for legitimating, operational, and marketing activities, respectively). They are similarly correlated with supply chain embeddedness ( $r = .37, p < .01$ ;  $r = .28, p < .01$ ;  $r = .26, p < .01$  for legitimating, operational and marketing activities, respectively). However, familial embeddedness shows only a weak correlation with marketing activities ( $r = .10, p < .10$ ) and institutional embeddedness is not significantly correlated with any of the gestation activities dimensions.

For the second half of the conceptual model, the gestation activities performance dimensions are significantly and positively correlated with current stage of business venture, the measure for the response variable, progress to emergence ( $r = .23, p < .01$ ;  $r = .18, p < .01$ ;  $r = .26, p < .01$  for legitimating, operational and marketing activities, respectively). Results for the zero order correlations between the resource bootstrapping and social embeddedness variables on one hand and progress to emergence indicators on the other are mixed. There are significant correlations between current stage of business venture and familial embeddedness ( $r = .15, p < .05$ ), supply chain embeddedness ( $r = .25, p < .01$ ), institutional embeddedness ( $r = .19, p < .01$ ). However, the correlation coefficients for resource bootstrapping dimensions are weak and non-significant. Looking ahead, this seems to suggest a partial mediation role for gestation activities performance on some of the dimensions of the independent variables and full mediation for others.

There are other noteworthy results in the descriptive data matrix. The education level shows a significant and positive correlation with social embeddedness ( $r = .16, p < .01$ ) and resource bootstrapping ( $r = .12, p < .05$ ). Ethnic grouping shows a significant relationship with resource bootstrapping, but not with social embeddedness dimensions. The age of the nascent venture (in months) shows a positive correlation with gestation activities performance ( $r = .27, p < .01$ ) but not with progress to emergence ( $r = .08, p > .10$ ). There are also some counterintuitive

correlations in the matrix. For example, the correlation between work experience and business founding experience is weak and non-significant, as is the correlation between work experience and the social embeddedness.

#### 4.1.1 The Distribution of the Dependent Variable

The distribution of responses to the dependent variable: progress to emergence is shown in the frequency table below. The distribution mean = 3.8, SD = .94 and Skewness = -.54. The total number of observations was 289.

**Table 4.1a:  
Distribution of the Dependent Variable**

Response	Frequency	Percent
Abandoned	10	3.4
Dormant	30	10.4
Still trying	93	32.2
Slowly emerging	124	42.9
Fast emerging	32	11.1
N	289	100

#### 4.2 Gestation Activities Performance

From a descriptive statistics perspective, the average number of activities performed per respondent was 7.4 out of 18. About 80% of respondents had performed at least one legitimating activity ( $M = 2.15$ ,  $SD = 1.568$ , coefficient of variation ( $CV$ ) = 0.73) compared to 89% for at least one operational activity ( $M = 3.69$ ,  $SD = 2.769$ ,  $CV = 0.75$ ), and 76.5% for at least one marketing activity ( $M = 1.57$ ,  $SD = 1.136$ ,  $CV = 0.72$ ). Operational activities showed slightly greater relative variation.

In terms of hypotheses, the interest of the study regarding gestation activities performance was a) the effect of sequencing of activities on progress to emergence, b) the effect of the pace of activity performance on progress to emergence, and c) the significance of resource bootstrapping and social embeddedness as predictors of gestation activities

**TABLE 4.1b:**  
**Means, Standard Deviations, And Zero Order Correlations**

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1 Legitimizing activities	.25	.19												
2 Operational activities	.14	.18	.48**											
3 Marketing activities	.30	.24	.46**	.37**										
4 Gestation activities performance (GAP)	.23	.16	.80**	.75**	.81**									
5 Progress to emergence (PTE)	3.47	.94	.23**	.18**	.26**	.28**								
6 Familial embeddedness	2.19	.71	.05	-.03	.10 <sup>†</sup>	.05	.15*							
7 Supply chain embeddedness	2.62	.67	.37**	.28**	.26**	.38**	.25**	.30**						
8 Institutional embeddedness	2.27	.82	.08	.06	-.01	.05	.19**	.28**	.41**					
9 Aggregate social embeddedness	2.36	.55	.21**	.13*	.15*	.20**	.26**	.70**	.75**	.78**				
10 Financial bootstrapping	.41	.53	.37**	.35**	.17**	.37**	.09	.09	.33**	.28**	.32**			
11 Tangible resources bootstrapping	.31	.55	.18**	.16**	.05	.17**	.07	.03	.20**	.10 <sup>†</sup>	.14*	.42**		
12 Intangible resources bootstrapping	.67	.92	.19**	.12*	.16**	.20**	.00	.10 <sup>†</sup>	.23**	.05	.16**	.29**	.57**	
13 Aggregate bootstrapping	.47	.55	.29**	.23**	.17**	.30**	.01	.09	.30**	.15**	.24**	.62**	.83**	.87**
14 Business founding experience	1.52	.76	.17**	.11 <sup>†</sup>	.05	.13*	.08	-.01	.15**	.05	.08	.18**	.24**	.18**
15 Idea novelty	.57	.50	.10	.25**	.04	.15**	.02	.07	.10 <sup>†</sup>	.04	.10	.08	.12*	.16**
16 Industry type (dichotomized)	.19	.39	.13**	.30**	-.04	.16**	.00	.04	.15**	.11 <sup>†</sup>	.13*	.20**	.08	.07
17 Education level	4.02	1.12	.17**	.09	.13*	.17**	.03	.06	.14*	.15*	.16**	.13*	.10 <sup>†</sup>	.07
18 Gender	.52	.50	.06	.04	-.04	.02	-.06	-.06	.13*	.15**	.10 <sup>†</sup>	.10 <sup>†</sup>	.14*	.11 <sup>†</sup>
19 Age group	3.37	1.11	.03	.05	.13*	.09	.10 <sup>†</sup>	-.08	-.04	-.06	-.08	-.18**	.14*	-.08
20 Work experience (years)	8.75	8.91	.10 <sup>†</sup>	.12 <sup>†</sup>	.02	.10 <sup>†</sup>	.06	.01	.05	.02	.03	.09	.06	.06
21 Ethnic origin (dichotomized)	.60	.49	-.06	.06	.07	.03	.10 <sup>†</sup>	.05	-.07	-.13*	-.07	-.12*	.19**	-.15**
22 Date started (months ago)	12.77	6.51	.22**	.24**	.17**	.27**	.08	-.05	.11 <sup>†</sup>	-.03	.01	.15*	.11 <sup>†</sup>	.14*
23 First activity (sequence)	.37	.48	-.48**	-.06	.00	-.21**	-.08	.08	-.14*	-.02	-.04	-.03	.01	-.03
24 Duration	3.75	1.28	.23**	.18**	.19**	.25**	.18**	.03	.14*	.05	.06	.04	.03	.16**
25 Activities performed (count)	7.41	4.68	.85**	.71**	.68**	.94**	.23**	.05	.39**	.04	.19**	.39**	.19**	.19**
26 Pace of GAP	2.20	1.73	.54**	.44**	.43**	.60**	.10	-.01	.18**	.04	.09	.30**	.22**	.09
27 Pace of GAP SQR	7.85	17.59	.29**	.26**	.24**	.34**	.02	-.04	.10 <sup>†</sup>	.06	.05	.22**	.22**	.08
28 Resource adequacy	3.56	1.02	.09	.14 <sup>†</sup>	.04	.11	.36**	.18*	.18*	.34**	.32**	.32**	.11	.06

\*\* Significant at  $p < .01$ ; \* significant at  $p < .05$ ; <sup>†</sup> significant at  $p < .10$ ; N = 290 – 294 except resource adequacy N = 180.

Table continued



**Table 4.1b** continued:

	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
14 Business Founding experience	.25**														
15 Idea novelty	.16**	.05													
16 Industry type (dichotomized)	.12*	.04	.04												
17 Education level	.12*	.05	.08	.03											
18 Gender	.14*	.07	.06	.10	.06										
19 Age group	-.14*	.03	-.07	-.06	-.05	-.05									
20 Work experience (years)	.09	.05	-.03	.12 <sup>†</sup>	-.02	.00	.41**								
21 Ethnic origin (dichotomized)	-.19**	-.15**	-.14*	-.03	-.13*	-.09	.26**	.11 <sup>†</sup>							
22 Date started (months ago)	.17**	.08	-.05	.14*	.12*	.06	.15**	.18**	-.03						
23 First activity (sequence)	-.03	-.08	-.03	.03	-.04	-.02	.03	-.02	.12*	-.07					
24 Duration	.09	.04	-.03	.00	.11 <sup>†</sup>	-.04	.15**	.22**	.05	.57**	-.15**				
25 Activities performed (count)	.30**	.15*	.13*	.14*	.17*	.04	.10	.12*	.02	.29**	-.24**	.25**			
26 Pace of GAP	.23**	.05	.11 <sup>†</sup>	.05	.01	-.02	-.05	-.05	-.01	-.13*	-.10	-.39**	.65**		
27 Pace of GAP SQR	.20**	.02	.07	.01	-.06	-.02	-.11	-.06	-.06	-.16*	-.05	-.35**	.36**	.88**	
28 Resource adequacy	.18*	.17*	-.08	.05	.06	-.04	-.03	.05	.10	.04	.03	.05	.07	.03	.03

\*\* significant at  $p < .01$ ; \* significant at  $p < .05$ ; <sup>†</sup> significant at  $p < .10$ ; N = 290 – 294 except resource adequacy N = 180.

performance. Results of tests of hypotheses regarding these questions are presented below.

### **4.3 The Effect of Sequencing**

Hypotheses 1a and 1b in this study posited that performing legitimating activities ahead of resource transforming and market oriented activities would be positively associated with gestation activities performance and progress toward emergence, respectively. Present findings show that 37% of respondents started with one or other legitimating activity, the most common being “developed a business plan.” More than half (59%) of all respondents had done a business plan. No other activity comes close. There are conflicting positions from existing empirical research about the sequencing of activities and about the contribution of writing a business plan to start-up success, although the latter was not explicitly covered by this study. The focus of the study was to match its findings with the conflicting positions taken by Delmar and Shane (2003b, 2004) who found for a normative order and Newbert (2005) and Carter et al. (1996) who did not. After dichotomizing the ‘which activity did you perform first’ variable (legitimizing activity = 1; all else = 0), results of simple regression analysis show that respondents who started with legitimating activities had better scores on gestation activities performance than those who did not. Performing one of the legitimating activities as the nascent firm’s first activity explains an additional 4% of the variance in gestation activities performance ( $R^2 = 12.6\%$ ). The beta value for activities performance is positive and significant ( $B = .06, p < .01$ ). This indicates support for hypothesis 1a, that starting with a legitimating activity is associated with overall gestation activities performance. This, however, did not translate into a similar relationship for progress to emergence.

**TABLE 4.2a:**  
**Results of OLS Regression of GAP on First Activity**

Variable	Model 1		Model 2	
	B	SE	B	SE
Intercept	.03	.05	.06	.05
Industry Type	.06*	.02	.07**	.02
Founding Experience	.02	.02	.01	.02
Idea Novelty	.05**	.02	.05*	.02
Gender	-.00	.02	-.00	.02
Age	.02†	.01	.02†	.01
Education Level	.02**	.01	.02**	.01
Ethnic Origin	.02	.02	.03	.02
First Activity			.06**	.02
Model F	3.92**		4.97**	
R <sup>2</sup>	.09		.13	
Adjusted R <sup>2</sup>	.07		.11	
Δ R <sup>2</sup>			.04**	
N	285		285	

\*\*p < .01; \* p < .05; †p < .10

Legend: GAP = Gestation Activities Performance; PTE = Progress to Emergence

**TABLE 4.2b:**  
**Results of OLS Regression of PTE on First Activity**

Variable	Model 1		Model 2	
	B	SE	B	SE
Intercept	3.00**	.29	3.07**	.29
Industry Type	.02	.14	.03	.14
Founding Experience	.08	.12	.06	.12
Idea Novelty	.08	.11	.08	.11
Gender	-.13	.11	-.13	.11
Age	.06	.05	.06	.05
Education Level	.04	.05	.03	.05
Ethnic Origin	.18	.12	.20†	.12
First Activity			-.16	.12
Model F	1.02		1.15	
R <sup>2</sup>	.03		.03	
Adjusted R <sup>2</sup>	.00		.00	
Δ R <sup>2</sup>			.01	
N	289		289	

\*\*p < .01; \* p < .05; †p < .10 GAP = Gestation Activities Performance; PTE = Progress to Emergence

The beta coefficient for first activity in the latter case is shown to be non-significant (B = -.16),  $p > .10$  and explains only an additional 1% of the variance in progress to emergence. Hypothesis 1b is, accordingly, not supported. The results are displayed in Tables 4.2a and 4.2b.

#### 4.4 The Pace of Activity Performance

Hypothesis 2 posited that performing gestation activities over a shorter period of time would be positively associated with progress to emergence. As indicated in the previous chapter, the predictor variable was expressed in terms of the pace of activity performance (pace = total number of activities performed/time period since first activity) and the progress to emergence is measured along a progressive ordinal scale. The respective distribution statistics of the two variables were presented in Chapter 3.

Initial OLS linear regression analysis (see Model 2 in table 4.3a below) yielded a significant result for the pace coefficient at 5% level ( $B = .11, p < .05$ ). However, the overall model is significant only at 10% level ( $F = 1.85, p < .10$ ). Closer examination of the scatter plot and using the SPSS curve estimation function indicated that the pace units (gestation activities per time unit) increased, peaked, and then declined. This suggested a curvilinear relationship. Consequently higher order powers of the pace variable were introduced in the regression analysis.

As is done in this kind of analysis, a hierarchical analysis procedure from lower to higher order models was used. After evaluating the linear model, a quadratic term was added in model three, and then a cubic term was added in model four. The results are shown in Models 4 and 5 in Table 4.3 below.

As suggested by Cohen et al. (2003), model selection should be based on a statistically significant improvement in the variance explained. Additionally, Wuensch (2006) suggested that for a component to be retained in the final model, its coefficient should be significant and should account for at least 2% of the variation in the dependent variable. The quadratic model satisfies these conditions, adding 4% to explained variance ( $F \text{ change} = 10.9, p < .01$ ) and the coefficients for pace and pace squared are statistically

significant at 1% level. On the other hand, the cubic model adds nothing more to the explained variance, implying that the quadratic model is the most appropriate.

**TABLE 4.3a:**  
**Results of Regression of PTE on Pace of Gestation Activities Performance**

Variable	Model 1		Model 2		Model 3		Model 4	
	B	SE	B	SE	B	SE	B	SE
Intercept	2.92**	.30	2.83**	.30	2.51**	.37	2.53**	.34
Industry Type	.01	.14	-.03	.14	.05	.14	.05	.14
Founding Experience	.11	.12	.11	.11	.10	.11	.09	.11
Idea Novelty	.09	.11	.06	.11	.06	.11	.07	.11
Education Level	.05	.05	.03	.05	.01	.05	.01	.05
Gender	-.13	.11	-.14	.11	-.13	.11	-.13	.11
Age	.08	.05	.07	.05	.06	.05	.06	.05
Ethnic Origin	.17	.12	.14	.12	.16	.12	.16	.12
Pace			.11*	.04	.57**	.15	.51	.36
Pace <sup>2</sup>					-.09**	.03	-.07	.15
Pace <sup>3</sup>							-.00	.02
Model <i>F</i>	1.22		1.85 <sup>†</sup>		2.92**		2.62**	
R <sup>2</sup>	.03		.05		.09		.09	
Adjusted R <sup>2</sup>	.01		.02		.06		.05	
Δ R <sup>2</sup>			.02*		.04**		.00	
N	283		283		283		283	

\*\*  $p < .01$       \*  $p < .05$       †  $p < .10$

#### 4.4.1 Conditional Analysis

Conditional analysis was performed on Model 3 for the marginal change in the pace variable plotted against the progress to emergence variable for different values of pace. As is accepted practice, the values used were the mean, mean plus one standard deviation, and mean less one standard deviation. The results of the analysis are presented below.

	Coef	SE	Sign
$[\partial \text{PTE}/\partial \text{PACE} \mid \text{PACE} = .76]$	<b>.50</b>	<b>.13</b>	<b><math>p &lt; .001</math></b>
$[\partial \text{PTE}/\partial \text{PACE} \mid \text{PACE} = 2.06]$	<b>.38</b>	<b>.09</b>	<b><math>p &lt; .001</math></b>
$[\partial \text{PTE}/\partial \text{PACE} \mid \text{PACE} = 3.36]$	<b>.26</b>	<b>.06</b>	<b><math>p &lt; .001</math></b>

Conditional analysis shows that marginal changes in pace have a significant effect on progress to emergence for reasonable values of the pace variable. This effect becomes weaker as pace increases.

Based on the results in Table 4.3a, and the conditional analysis in the above section, Hypothesis 2 is supported based on a positive and significant pace coefficient. However, the pace of gestation activities performance is positively associated with progress to emergence only up to a point. Beyond this point, the association takes an inverse relationship, as depicted by the finding of a significant coefficient of the quadratic term ( $B = -.09, p < .01$ ). A function with a positive first order and a negative second order coefficient takes on a predominantly positive, concave downward curve (Aiken & West, 1991: 66).

#### 4.4.2 Pace and Alternative Measures of the Dependent Variable

As a further measure of robustness, for this finding, the analysis was repeated using

**TABLE 4.3b:**  
**Results of Regression of PTE on Pace of Gestation Activities Performance using Alternative Measures**

Variable	Start-up process completed				Time remaining to completion			
	Model 2		Model 3		Model 2		Model 3	
	B	SE	B	SE	B	SE	B	SE
Intercept	2.97**	.37	2.72**	.39	2.38**	.49	1.87**	.52
Industry Type	-.01	.17	.05	.18	-.08	.21	.05	.22
Founding								
Experience	.08	.14	.08	.14	.25	.18	.24	.18
Idea Novelty	-.12	.14	-.12	.14	-.07	.18	-.07	.18
Education Level	.02	.06	.01	.06	.13	.08	.10	.08
Gender	-.10	.13	-.09	.13	-.26	.18	-.23	.17
Age	.09	.06	.09	.06	.07	.08	.07	.08
Ethnic Origin	.33*	.15	.34*	.15	.57**	.19	.61**	.19
Pace	.14*	.05	.46*	.18	.12 <sup>†</sup>	.07	.74**	.24
Pace <sup>2</sup>			-.06*	.03			-.12**	.05
Pace <sup>3</sup>								
Model <i>F</i>	2.59*		2.70**		2.89**		3.44**	
R <sup>2</sup>	.07		.09		.09		.11	
Adjusted R <sup>2</sup>	.05		.05		.06		.08	
Δ R <sup>2</sup>	.02*		.01 <sup>†</sup>		.01 <sup>†</sup>		.03**	
N	270		270		252		252	

\*\*  $p < .01$

\*  $p < .05$

<sup>†</sup>  $p < .10$

alternative measures of the dependent variable (i.e. start-up process completed (V9) and time remaining to complete the start-up process (V10)). A comparison of the three analyses showed very similar results to those presented above. Results of the latter analysis are presented in Table 4.3b below.

In both analyses, as in the previous one, the coefficient for pace is positive and significant, while the coefficient pace squared is negative and significant. The change in  $R^2$  is also comparable to the previous regression (2% after adding pace in the “start-up process completed” regression and 3% after adding pace squared in the “time remaining to completion” regression). This adds a measure of confidence to the efficacy of the results obtained.

#### **4.5 Predictors of Gestation Activities Performance**

The study’s next gestation activities performance related analysis concerned the degree to which engagement in resource bootstrapping and social embeddedness enhances activities performance. The two activities are part of the third of Gartner’s (1985) four dimensions that account for organizational start-up.

Recall from Chapter Two that prior studies (e.g., Gartner & Carter, 2003; Gartner et al., 2004) have concluded that nascent entrepreneurship is a process in which certain tangible activities (Gartner’s (1985) second dimension) must be successfully accomplished before an organization is formed. What remains to be established is the empirical relationship between the performance of these activities (dimension two) and nascent firm structure and strategy (dimension three). This was the basis for hypotheses 3 and 4. Results of the tests of these hypotheses are now presented. Results for the two strategy variables as predictors of gestation activities performance are presented first. These are then followed by the results of gestation activities performance as a mediator.

#### 4.5.1 Social Embeddedness as a Predictor of Gestation Activities Performance

The distribution of responses to the social embeddedness items indicates that 38.5% of respondents agreed or strongly agreed that they could count on social relationships with specific players to access resources. This is in comparison to 25.5% who disagreed or strongly disagreed. More details are presented in Table 4.4 below.

**TABLE 4.4**  
**The Distribution of Social Embeddedness Responses**

	SD		D		NAD		A		SA	
	No.	%	No.	%	No.	%	No.	%	No.	%
Familial	118	<b>13.8</b>	149	<b>17.4</b>	254	<b>29.6</b>	267	<b>31.2</b>	69	<b>8.1</b>
Supply chain	150	<b>10.6</b>	147	<b>10.4</b>	559	<b>39.5</b>	426	<b>30.1</b>	135	<b>9.5</b>
Institutional	107	<b>12.5</b>	103	<b>12.1</b>	330	<b>38.5</b>	248	<b>29.1</b>	65	<b>7.6</b>

Legend: SD = strongly disagree; D = disagree; NAD = neither agree nor disagree; A = agree; SA = strongly agree. Note: Totals exceed sample size because each of the three dimensions is composed of multiple items.

Hypothesis 3a stated that embedded ties with relevant publics in the organizational environment are associated with higher gestation activities performance. To test this hypothesis, the study regressed gestation activities performance (aggregate) on the three dimensions of social embeddedness. In performing this analysis, the study was cognizant of the possible confounding effect of industry type, idea novelty, and founding experience, as well as demographic variables such as age, gender, ethnicity, and education level. All these items were entered in the regression equation as control variables. The following are the results of the regression.

The overall model, with all the variables entered in the equation, was significant ( $F = 7.65, p < .01$ ) with an explanatory power of 21.8%. The contribution of the embeddedness dimensions to the variance in gestation activities performance, beyond the control variables, is 12% ( $F \text{ change} = 44.2, p < .01$ ). However, the result is driven by the supply chain embeddedness dimension ( $B = .10, p < .01$ ). When supply chain



embeddedness in entered into the model, the effect of the other two dimensions becomes inverse and for familial embeddedness, the coefficient is not statistically significant.

This is therefore partial support for hypothesis 3a, to wit, social embeddedness is positively associated with gestation activities performance but only with respect to supply chain embeddedness. As Model 4, Table 4.5 shows, supply chain embeddedness is the predictor with the highest standardized beta at .412 ( $t = 6.65$ ,  $p < .001$ ) compared to education level ( $\beta = .148$ ;  $t = 2.71$ ,  $p < .01$ ), institutional embeddedness ( $\beta = -.125$ ;  $t = -2.07$ ,  $p < .05$ ), and idea novelty ( $\beta = .117$ ;  $t = 2.14$ ,  $p < .05$ ).

Of the control variables, education level ( $B = .02$ ,  $p < .01$ ), idea novelty ( $B = .04$ ,  $p < .01$ ), industry type ( $B = .04$ ,  $p < .10$ ), and the respondent's age ( $B = .02$ ,  $p < .10$ ) are significant. Founding experience, gender, and ethnicity do not appear to influence the relationship between gestation activities performance and any of the dimensions of social embeddedness.

**TABLE 4.5:**  
**Results of OLS Regression Analysis of GAP on Social Embeddedness Dimensions**

Variable	Model 1		Model 2		Model 3		Model 4	
	<b>B</b>	<b>SE</b>	<b>B</b>	<b>SE</b>	<b>B</b>	<b>SE</b>	<b>B</b>	<b>SE</b>
Intercept	.03	.05	.01	.06	.01	.06	-.12*	.06
Industry type	.06*	.02	.06*	.02	.06*	.02	.04†	.02
Founding experience	.02	.02	.02	.02	.02	.02	.01	.02
Idea novelty	.05**	.02	.05*	.02	.05*	.02	.04*	.02
Education level	.03**	.01	.02**	.01	.02**	.01	.02**	.01
Gender	-.00	.02	.00	.02	-.00	.02	-.01	.02
Age	.01	.01	.01	.01	.01	.01	.02†	.01
Ethnic origin	.02	.02	.02	.02	.02	.02	.01	.02
Familial embeddedness			.01	.01	.01	.01	-.01	.01
Institutional embeddedness					.00	.01	-.02*	.01
Supply chain embeddedness							.10**	.02
Model <i>F</i>	3.92**		3.50**		3.10**		7.65**	
R <sup>2</sup>	.09		.09		.09		.22	
Adjusted R <sup>2</sup>	.07		.07		.06		.19	
Δ R <sup>2</sup>			.00		.00		.13**	
N	285		285		285		285	

\*\*  $p < .01$

\*  $p < .05$

†  $p < .10$

#### 4.5.2 Resource Bootstrapping as a Predictor of Gestation Activities Performance

The distribution of the resource bootstrapping responses was more lopsided than the social embeddedness one.

**TABLE 4.6**  
**The Distribution of Resource Bootstrapping Responses**

	Not used		Used a few times		Used intermittently		Use routinely	
	No.	%	No.	%	No.	%	No.	%
Financial	762	<b>73.2</b>	105	<b>10.1</b>	83	<b>8.0</b>	91	<b>8.7</b>
Tangible	869	<b>80.1</b>	78	<b>7.2</b>	75	<b>6.9</b>	63	<b>5.8</b>
Intangible	342	<b>63.2</b>	76	<b>14.1</b>	52	<b>9.6</b>	70	<b>13.0</b>

Note: Totals exceed sample size because each of the three dimensions is composed of multiple items.

Over 60% of respondents had not used any of the bootstrapping strategies and only 13% indicated that they used the various strategies routinely. The details are presented in Table 4.6 above.

Hypothesis 4a stated that manifestation of the use of bootstrapping techniques would be positively associated with higher gestation activities performance. As in the previous section, the study employed OLS regression to test this hypothesis. The same control variables - industry type, idea novelty, founding experience, education level, gender, age, and ethnicity - were entered to isolate possible confounding influences.

With all the variables entered in the regression (Model 4, Table 4.7), results show that the overall model has an explanatory power of 22% ( $F = 7.74, p < .01$ ). Compared to Model 1, in which only the control variables were added, there is a significant 11% increase in explanatory power ( $F \text{ change} = 33.5, p < .01$ ). Similar to the embeddedness model, the relationship is driven by the financial bootstrapping dimension ( $B = .11, p < .01$ ). When this dimension is entered in the model, the effect of the other two dimensions, tangible resources and intangible resources bootstrapping becomes statistically non significant.

This suggests partial support for hypothesis 4a, i.e., use of resource bootstrapping is positively associated with higher gestation activities performance, albeit only for financial bootstrapping. Details of the analysis are displayed in Table 4.7 above.

**TABLE 4.7**  
**Results of OLS Regression of GAP on Resource Bootstrapping Dimensions**

Variable	Model 1		Model 2		Model 3		Model 4	
	B	SE	B	SE	B	SE	B	SE
Intercept	.03	.05	.02	.05	.01	.05	-.01	.05
Industry type	.06*	.02	.06*	.02	.05*	.02	.03	.02
Founding experience	.02	.02	.02	.02	.02	.02	.01	.02
Idea novelty	.05**	.02	.05*	.02	.04*	.02	.04*	.02
Education level	.03**	.01	.02**	.01	.02**	.01	.02*	.01
Gender	-.00	.02	-.01	.02	-.01	.02	-.01	.02
Age	.01	.01	.02†	.01	.02†	.01	.02**	.01
Ethnic origin	.02	.02	.02	.02	.02	.02	.02	.02
Tangible resources bootstrapping			-.05**	.02	-.03	.02	.01	.02
Intangible resources bootstrapping					.02†	.01	.02	.01
Financial bootstrapping							.11**	.02
Model <i>F</i>	3.92**		4.48**		4.36**		7.74	
R <sup>2</sup>	.09		.12		.13		.22	
Adjusted R <sup>2</sup>	.07		.09		.10		.19	
ΔR <sup>2</sup>			.03**		.01†		.10**	
N	285		285		285		285	

\*\*  $p < .01$       \*  $p < .05$       †  $p < .10$ ;

In the full model, only financial bootstrapping has a statistically significant coefficient ( $B = .11$ ,  $p < .01$ ). The other two dimensions, although significant in Models 2 and 3 ( $B = -.05$ ,  $p < .01$ ;  $B = .02$ ,  $p < .10$  for tangible resource bootstrapping and intangible resources bootstrapping respectively), are not significant in the final model.

Of the control variables, industry type ( $B = .06$ ,  $p < .05$ ), idea novelty ( $B = .05$ ,  $p < .01$ ), and education level ( $B = .03$ ,  $p < .01$ ) are significant in model 1 and are also significant in Models 2 and 3 which introduce into the regression, tangible and intangible resource bootstrapping respectively. With the introduction of financial resources bootstrapping, industry type ceases to be significant (at  $p < .10$ ). On the other hand, age becomes significant ( $B = .02$ ,  $p < .01$ ) in this model. Idea novelty ( $B = .04$ ,  $p < .05$ ) and education level ( $B = .02$ ,  $p < .05$ ) also remain significant. The results also show resource

bootstrapping to be the most influential predictor ( $\beta = .35$ ,  $t = 5.79$ ,  $p < .01$ ) compared to education level ( $\beta = .14$ ,  $t = 2.52$ ,  $p < .05$ ) and idea novelty ( $\beta = .13$ ,  $t = 2.32$ ,  $p < .05$ ).

#### 4.5.3 The Combined Influence of Social Embeddedness and Resource Bootstrapping as Predictors of Gestation Activities Performance

With both social embeddedness and resource bootstrapping entered into the regression, explained variation in the dependent variable is 30.2% ( $R = .55$ ; adjusted  $R^2 = .27$ ;  $F = 9.01$ ,  $p < .01$ ). Details are presented in Table 4.8 below.

Change in  $R^2$  from Model 1 (controls) to Model 2 (resource bootstrapping dimensions) is .13 and from Model 2 to Model 3 (social embeddedness dimensions), the change in  $R^2$  is .08.

**TABLE 4.8**  
**Results of OLS Regression of GAP on Social Embeddedness and Resource Bootstrapping**

Variable	Model 1		Model 2		Model 3	
	B	SE	B	SE	B	SE
Intercept	.03	.05	-.01	.05	-.10 <sup>†</sup>	.05
Industry type	.06*	.02	.03	.02	.03	.02
Founding experience	.02	.02	.01	.02	-.00	.02
Idea novelty	.05**	.02	.04*	.02	.03*	.02
Education level	.03**	.01	.02*	.01	.02*	.01
Gender	-.00	.02	-.01	.02	-.01	.02
Age	.01	.01	.02**	.01	.02**	.01
Ethnic origin	.02	.02	.02	.02	.02	.02
Tangible resources bootstrapping			.01	.02	.00	.02
Intangible resources bootstrapping			.02	.01	.01	.01
Financial bootstrapping			.11**	.02	.09**	.02
Familial embeddedness					-.01	.01
Supply chain embeddedness					.08**	.02
Institutional embeddedness					-.03**	.01
Model <i>F</i>	3.92		7.74**		9.01	
$R^2$	.09		.22		.30	
Adjusted $R^2$	.07		.19		.27	
$\Delta R^2$			.13**		.08**	
N	285		285		285	

\*\*  $p < .01$    \*  $p < .05$    †  $p < .10$ .

Once again it is clear that the relationship is driven by supply chain embeddedness and financial resource bootstrapping. It is the coefficients for supply chain

embeddedness ( $B = .08; p < .01$ ) and financial bootstrapping ( $B = .09, p < .01$ ) that are significantly and positively associated with gestation activities performance. As in previous analyses, institutional embeddedness ( $B = -.03, p < .01$ ) is significant but inversely associated with the response variable.

Of the control variables, idea novelty ( $B = .03, p < .05$ ), education level ( $B = .02, p < .05$ ), and age ( $B = .02, p < .01$ ) appear to have significant influence on gestation activities performance. Similar to earlier analyses, industry type is significant in Model 1 ( $B = .06, p < .05$ ) but non significant when the independent variables are introduced.

#### **4.6 Social Embeddedness, Resource Bootstrapping and Progress to Emergence**

As indicated in Chapter 3 and in section 4.4, the ultimate outcome variable of the study was progress to emergence. The study hypothesized that the relationship between progress to emergence and the independent variables – social embeddedness and resource bootstrapping – is mediated by gestation activities performance. The results of the mediation tests are presented in the next two sections.

##### **4.6.1 Gestation Activities Performance as a Mediator**

Hypothesis 3b and 4b posited that gestation activities performance would mediate the relationship between progress to emergence on one hand and social embeddedness and resource bootstrapping respectively on the other. The protocol for testing for mediation as recommended by Baron and Kenny (1986) and Shaver (2005) follows three steps:

1. Regress the mediator ( $M_e$ ) on the independent variable (IV)
2. Regress the dependent variable (DV) on the IV
3. Regress the DV on both the  $M_e$  and the IV

To establish mediation, a) separate coefficients for each equation should be estimated and tested, b) IV should be significant in both equations 1 and 2, c)  $M_e$  should be significant in equation 3, and d) if conditions b) and c) hold, the effect of IV on DV should be less in equation 3 than in equation 2.

It was clear from the previous analysis that the relationship between gestation activities performance and the strategy variables is driven by supply chain embeddedness and financial resource bootstrapping dimensions and that when these variables are in the model, the effect of the other dimensions diminishes. With this finding in mind, the mediation tests were performed only for supply chain embeddedness and financial resources bootstrapping.

The results of applying Baron and Kenny's protocol to gestation activities performance as a mediator, supply chain embeddedness and financial resource bootstrapping as independents, and progress to emergence as the dependent variable, are now presented.

#### **4.6.2 Gestation Activities Performance as a Mediator between Supply Chain Embeddedness and Progress to Emergence**

The test results for mediation in supply chain embeddedness are presented in Table 4.9 below.

All the conditions for mediation (Baron & Kenny, 1986) are met. Supply chain embeddedness is significant in the first two regressions ( $B = .08$ ,  $p < .01$  in the first regression and  $B = .38$ ,  $p < .01$  in the second regression); the mediating variable, GAP, is significant ( $B = 1.29$ ,  $p < .01$ ) in equation three; and the effect of supply chain embeddedness on progress to emergence (PTE) is less in equation three ( $B = .27$ , standardized Beta = .20) than in equation two ( $B = .38$ , standardized Beta = .27). A Wald test performed to test whether the difference between the two beta values is different

from zero (i.e.  $H_0: .38 - .27 = 0$ ) produced a Wald statistic equal to 4.673. Since this is greater than the critical value (3.814) for chi square with one degree of freedom, the conclusion was that the difference between the two values is statistically different from zero.

These results show that GAP mediates the relationship between supply chain embeddedness dimension of social embeddedness and PTE. Hypothesis 3a is, accordingly, partially supported.

The prediction equations from regressions two and three are:

**Prediction equation 2:  $PTE(\hat{)} = 2.19 + .38(\text{supply chain embeddedness})$**

**Prediction equation 3:  $PTE(\hat{)} = 2.40 + .27(\text{supply chain embeddedness}) + 1.29(\text{GAP})$ .**

**TABLE 4.9:  
Results of OLS Regression testing for Mediation Effect of GAP on Supply Chain Embeddedness and PTE**

Variable (Predictors)	Dependent Variable								
	GAP			PTE					
	B	SE	Beta	Model 1			Model 2		
	B	SE	Beta	B	SE	Beta	B	SE	Beta
Intercept	-.17	.06		2.19**	.34		2.40**	.34	
Industry type	.04 <sup>†</sup>	.02	.10	-.08	.14	-.04	-.14	.14	-.06
Founding experience	.01	.02	.02	.05	.11	.03	.05	.11	.02
Idea novelty	.04*	.02	.12	.03	.11	.02	-.02	.11	-.01
Gender	-.01	.02	-.04	-.17 <sup>†</sup>	.11	-.10	-.17	.11	-.09
Age	.02*	.01	.12	.07	.05	.08	.05	.05	.06
Education level	.02*	.01	.14	.01	.05	.01	-.02	.05	-.02
Ethnic origin	.02	.02	.06	.18	.12	.09	.15	.12	.08
S.C. Embeddedness	.08**	.01	.35	.38**	.08	.27	.27**	.09	.20
GAP							1.29**	.37	.22
N	280			280			280		

\*\*  $p < .01$  \*  $p < .05$  †  $p < .10$ .

Legend: S.C. Embeddedness = Supply Chain Embeddedness; GAP = Gestation Activities Performance.

#### **4.6.3 Gestation Activities Performance as a Mediator between Financial Resource Bootstrapping and Progress to Emergence**

Next, the results of the test for mediation in the case of financial resource bootstrapping are presented.

**TABLE 4.10**  
**Results of OLS Regression testing for Mediation Effect of GAP on Financial Resource Bootstrapping and PTE**

	GAP			PTE					
	B	SE	Beta	Model 2			Model 3		
				B	SE	Beta	B	SE	Beta
Intercept	-.03	.05		2.93**	.30		2.97**	.29	
Industry type	.04	.02	.09	-.03	.14	-.01	-.09	.14	-.04
Founding experience	.01	.02	.02	.07	.12	.04	.08	.11	.04
Idea novelty	.05*	.02	.14	.07	.11	.04	-.01	.11	-.00
Education level	.02**	.01	.15	.03	.05	.03	-.01	.05	-.01
Gender	-.01	.02	-.03	-.16	.11	-.09	-.14	.11	-.07
Age	.02**	.01	.17	.07	.05	.09	.04	.05	.04
Ethnic origin	.02	.02	.06	.19	.12	.10	.14	.12	.07
F.R. Bootstrapping	.11**	.02	.36	.21 <sup>†</sup>	.11	.12	-.01	.12	-.01
GAP							1.70**	.38	.29
N	280		284		280				

Legend: \*\*  $p < .01$ ; \*  $p < .05$ ; <sup>†</sup>  $p < .10$ . F.R. Bootstrapping = financial resource Bootstrapping; GAP = Gestation Activities Performance.

Similar to the case of supply chain embeddedness, all the Baron and Kenny (1986) conditions for mediation are met although the regression coefficient for financial resource bootstrapping when regressed against PTE is significant only at the 10% level ( $B = .21, p < .10$ ). This coefficient almost diminishes when GAP is introduced in the model. This is evidence that GAP fully mediates the relationship between financial resource bootstrapping and PTE.

Additionally, since steps 1 (regression of the GAP on financial resource bootstrapping) and 3 (regression of PTE on the GAP, controlling for financial resource bootstrapping) are met, and in temporal terms PTE occurs after GAP and GAP before financial resource bootstrapping, it stands to reason that there is an indirect effect (mediation) of financial resource bootstrapping on progress to emergence (equal to .08 times 1.82, i.e., the effect of resource bootstrapping on GAP times the effect of GAP on PTE). Since both coefficients (in steps 1 and 3) are significant, i.e., non-zero, it follows that the product of the coefficients is also non-zero (Kenny, 2006).



A simpler way of testing the indirect effect is to use the Sobel test, recommended by MacKinnon, Lockwood, et al. (2002) and Kenny (2006). The Sobel test includes the standard errors of the coefficients in the analysis. The test statistic is calculated by dividing the product of the coefficients for the independent variable in Baron and Kenny's step 1 and the mediating variable in step 3 by the standard error of the product and treating the ratio as a Z score as shown below:

$$\text{Sobel test equation: } z\text{-value} = a*b/\text{SQRT}(b^2*s_a^2 + a^2*s_b^2)$$

Where a = coefficient of IV in step 1 and S<sub>a</sub> its standard error; and  
b = coefficient of M<sub>e</sub> in step 3 and S<sub>b</sub> its standard error

Applied to the indirect or mediation effect in the financial resource bootstrapping case yields a z-value of 3.47 [i.e.,  $.11*1.70/\text{SQRT}(1.70^2*.02^2 + .11^2*.38^2) = 3.47$ ] and a p-value < .001. There is therefore an indirect effect of resource bootstrapping on progress to emergence equal to .19 and significant at p < .001. (See Preacher and Hayes, 2004; and, <http://www.psych.ku.edu/preacher/sobel/sobel.htm> for a web page to calculate indirect effect).

Based on the above results, hypothesis 4b is also partially supported. GAP fully mediates the relationship between financial resource bootstrapping and progress to emergence.

#### **4.6.4 Test for Mediation Using Alternative Measures of the Dependent Variable**

The mediating effect of gestation activities performance on supply chain embeddedness and financial resource bootstrapping was tested again using alternative measures for the outcome variable (see Chapter 3). As shown in Tables 4.11a and 4.11b below, the results are similar to those of the analysis using "current state of venture". All the mediation conditions are met, indicating that gestation activities performance mediates the relationship between supply chain embeddedness and financial resource

bootstrapping on one hand, and the respondent's perception of progress to emergence as measured by the quantum of activities completed and the time remaining to complete the start-up process. This adds a measure of confidence to the efficacy of the mediation finding.

**TABLE 4.11a**  
**Results of OLS Regression Testing for Mediation Effect of GAP on Supply Chain Embeddedness and Alternative DV Measures**

Variable (Predictors)	Dependent Variable							
	Start-up process completed				Time remaining to completion			
	Model 2		Model 3		Model 2		Model 3	
	<b>B</b>	<b>SE</b>	<b>B</b>	<b>SE</b>	<b>B</b>	<b>SE</b>	<b>B</b>	<b>SE</b>
Intercept	2.32**	.42	2.61**	.41	1.95**	.58	2.17**	.58
Industry type	-.01	.17	-.12	.17	-.08	.22	-.12	.22
Founding experience	.02	.14	-.00	.13	.23	.18	.22	.18
Idea novelty	-.09	.14	-.16	.13	-.04	.18	-.08	.18
Gender	-.14	.13	-.10	.13	-.30 <sup>†</sup>	.18	-.28	.18
Age	.11 <sup>†</sup>	.06	.08	.06	.08	.08	.06	.08
Education level	.01	.06	-.03	.06	.13	.08	.10	.09
Ethnic origin	.34*	.14	.30*	.14	.58**	.19	.56**	.19
S. Embeddedness	.36**	.10	.20*	.10	.24 <sup>†</sup>	.14	.12	.14
GAP			1.98**	.45			1.35*	.61
N	267		267		249		249	

\*\*  $p < .01$  \*  $p < .05$  <sup>†</sup>  $p < .10$ .

**TABLE 4.11b**  
**Results of OLS Regression Testing for Mediation Effect of GAP on Financial Resource Embeddedness and Alternative DV Measures**

Variable (Predictors)	Dependent Variable							
	Start-up process completed				Time remaining to completion			
	Model 2		Model 3		Model 2		Model 3	
	<b>B</b>	<b>SE</b>	<b>B</b>	<b>SE</b>	<b>B</b>	<b>SE</b>	<b>B</b>	<b>SE</b>
Intercept	2.97**	.37	3.00**	.41	2.34**	.49	2.36**	.49
Industry type	-.01	.18	-.12	.17	-.10	.22	-.14	.22
Founding experience	.04	.14	.01	.13	.22	.18	.21	.18
Idea novelty	-.06	.14	-.14	.13	-.02	.18	-.06	.18
Gender	-.11	.14	-.09	.13	-.30	.18	-.27	.18
Age	.13*	.06	.08	.06	.10	.08	.07	.08
Education level	.02	.06	-.02	.06	.13	.08	.10	.08
Ethnic origin	.34*	.15	.30*	.14	.59**	.19	.56**	.19
F.R. Bootstrapping	.37**	.13	.15	.10	.36*	.17	.22	.18
GAP			2.12**	.45			1.27*	.61
N	267		267		249		249	

\*\*  $p < .01$  \*  $p < .05$  <sup>†</sup>  $p < .10$ .

Similar to earlier analysis, the financial resource bootstrapping coefficient becomes non-significant when GAP is introduced in the model, suggesting full mediation.

#### 4.6.5 The Combined Influence of Social Embeddedness, Resource Bootstrapping, and Gestation Activities Performance on Progress to Emergence

With all the predictor variables in the model, explained variance in PTE is 15.5% ( $R = .39$ ; adjusted  $R^2 = .12$ ;  $F = 4.94$ ,  $p < .01$ ). The contribution of the predictor variables is 12.8%. The coefficients of gestation activities performance ( $B = 1.49$ ,  $p < .01$ ) and social embeddedness ( $B = .38$ ,  $p < .01$ ) are statistically significant. The control variables account for only 3% of the variation. More details of this analysis are presented in Table 4.12 on page 96.

**TABLE 4.12:**  
**Results of OLS Regression of PTE on Social Embeddedness, Resource Bootstrapping, and GAP**

Variable	Model 1		Model 2	
	B	SE	B	SE
Intercept	2.99**	.30	2.21	.35
Industry type	.01	.14	-.15	.14
Founding experience	.12	.12	.06	.11
Idea novelty	.08	.11	-.01	.11
Education level	.04	.05	-.03	.05
Gender	-.14	.11	-.15	.11
Age	.06	.05	.05	.05
Ethnic origin	.18	.12	.13	.11
Resources bootstrapping			.16	.13
Social embeddedness			.38**	.10
GAP			1.49**	.35
Model <i>F</i>	1.09		4.94**	
$R^2$	.03		.16	
Adjusted $R^2$	.00		.12	
$\Delta R^2$			.13**	
N	280		280	

\*\*  $p < .01$       \*  $p < .05$       †  $p < .10$ .

#### 4.7 The Effect of Founding Experience on the Use of Supply Chain Embeddedness and Financial Resource Bootstrapping

The study hypothesized that if social embeddedness and resource bootstrapping are indeed solutions to resource paucity for nascent entrepreneurs, then serial entrepreneurs should use them more frequently than novice entrepreneurs when starting new ventures, because they will have learned from previous attempts. Hence hypothesis 5a and 5b

stated that there would be a significant difference in the use of bootstrapping techniques (5a) and the extent of social embeddedness (5b) between serial and novice entrepreneurs. Descriptive statistics of the business founding experience variable (not dichotomized) show a mean of 1.5, median 1.0, and a standard deviation of 0.76. Among the respondents, there were 179 first time or novice and 113 serial entrepreneurs.

As in the previous analyses, tests were done for financial bootstrapping and supply chain embeddedness dimensions. Using OLS regression, results in Table 4.13 below show support for both hypotheses 5a and 5b.

Financial resource bootstrapping shows significant results ( $B = .11, p < .01$ ). The coefficient is significantly different from zero and positive. This indicates that the more experienced founders – i.e., serial entrepreneurs – do more financial resource bootstrapping than their novice counterparts. Similarly, supply chain embeddedness is positive and significant ( $B = .11, p < .05$ ) indicating that serial entrepreneurs exhibited more supply chain embeddedness.

**TABLE 4.13:**  
**Results of OLS Regression Showing the Effect of Founding Experience on Financial Resource Bootstrapping and Supply Chain Embeddedness**

Variable (Predictors)	Dependent Variable							
	Fin Resource Bootstrapping				Supply Chain Embeddedness			
	Model 1		Model 2		Model 1		Model 2	
	<b>B</b>	<b>SE</b>	<b>B</b>	<b>SE</b>	<b>B</b>	<b>SE</b>	<b>B</b>	<b>SE</b>
Intercept	.33*	.16	.18	.17	2.23**	.20	2.08**	.21
Industry type	.25**	.08	.25**	.08	.23*	.10	.22*	.10
Idea novelty	.04	.06	.04*	.06	.11	.08	.11	.08
Education level	.05†	.03	.05	.03	.07*	.04	.07†	.04
Gender	.08	.06	.07	.06	.13	.08	.12	.08
Age	-.06*	.03	-.07†	.03	-.01	.04	-.02	.04
Ethnic origin	-.03	.07	-.00	.07	-.03	.08	-.01	.08
Founding experience			.11**	.04			.11*	.05
Model F	4.55**		5.20**		2.85**		3.18**	
R <sup>2</sup>	.09		.12		.06		.07	
Δ R <sup>2</sup>			.03**				.02*	
N	284		289		289		289	

\*\*  $p < .01$       \*  $p < .05$       †  $p < .10$ .

## 4.8 Summary of Empirical Hypothesis Tests

Table 4.14 below is a summary of the hypotheses empirically tested in this study and the results of the tests.

**TABLE 4.14:**  
**Summary of Empirically Tested Hypotheses and Results**

Hypothesis	Finding
H <sub>1a</sub> : Performing legitimating activities ahead of resource transforming and market oriented activities will be positively associated with overall gestation activities performance.	<b>Supported</b>
H <sub>1b</sub> : Performing legitimating activities ahead of resource transforming and market oriented activities will be positively associated with progress toward emergence.	Not supported
H <sub>2</sub> : Performing gestation activities over a shorter period of time will be positively associated with progress to emergence.	<b>Partially supported</b> (relationship is quadratic)
H <sub>3a</sub> : Manifestation of embedded ties with relevant publics in the organizational environment will be positively associated with higher gestation activities performance.	<b>Supported</b>
H <sub>3b</sub> : Gestation activities performance will mediate the relationship between social embeddedness and progress to emergence.	<b>Supported</b> (partial mediation)
H <sub>4a</sub> : Manifestation of the use of bootstrapping techniques will be positively associated with higher gestation activities performance.	<b>Supported</b>
H <sub>4b</sub> : Gestation activities performance will mediate the relationship between bootstrapping and progress to emergence.	<b>Supported</b> (full mediation)
H <sub>5a</sub> : There will be a significant difference in the use of bootstrapping techniques between serial and novice entrepreneurs.	<b>Supported</b> (financial resource bootstrapping dimension)
H <sub>5b</sub> : There will be a significant difference in the level of social embeddedness between serial and novice entrepreneurs	<b>Supported</b> (supply chain embeddedness dimension)

## **CHAPTER 5: DISCUSSION OF FINDINGS**

### **5.1 Introduction**

In this chapter, the findings presented in Chapter Four are discussed in greater detail. The chapter begins with a summary of the key findings of the study followed by a discussion of the three key themes that have emerged from this work. Other significant findings are then discussed. This is followed by a section on the implications of the findings for nascent entrepreneurship theory development and implications for policy and practice. The chapter ends with comments on the limitations of the study, some recommendations for future research and concluding remarks.

### **5.2 Summary of Findings**

This study found that: (1) there was evidence to suggest that firms that started their exploitation process with legitimating activities rather than operational or marketing activities had better overall gestation activities performance. However, the relationship did not extend to progress to emergence; (2) there was a curvilinear relationship between the pace of activity performance and progress to emergence. The relationship displays a predominantly positive, concave downward curve; (3) both social embeddedness and resource bootstrapping are significantly associated with gestation activities performance; (4) the relationship between supply chain embeddedness and progress to emergence is partially mediated by gestation activities performance and the parallel relationship for financial resource bootstrapping is fully mediated by the same mediator; (5) firms started by repeat entrepreneurs were found to use financial resource bootstrapping techniques more than novice entrepreneurs probably as a consequence of the learning curve effect. Similarly, firms spearheaded by repeat entrepreneurs showed evidence of greater supply

chain embeddedness but the relationship did not extend to the familial and institutional embeddedness dimensions.

### **5.3 Key Themes Emerging from the Study**

One major output anticipated from this study was the clarification of the extent to which social embeddedness and bootstrapping contribute to a model capable of explaining the variance in nascent firm emergence. The study assumed, as informed by theory, that nascent firms are faced with inadequate access to resources and must therefore resort to non-traditional strategies to gain this access. Scholars like Baker and colleagues (Baker, Miner, & Eesley, 2001; Baker & Nelson, 2005; Baker (2006, 2007) have asked the question “what do nascent firms actually do in the face of resource paucity?” Some studies have looked to personal backgrounds (e.g. Reynolds, 2004) and cognitive characteristics (e.g. Shaver, 2004) of nascent entrepreneurs, and the entrepreneurial environment (e.g. Carter, et al., 2004) for answers. Other researchers (e.g. Winborg & Landstrom, 2001; Baker, 2006; 2007) have focused attention on resource bootstrapping and its various derivatives (e.g. bricolage, improvisation, effectuation, and others). However, as Wagner (2004) and Davidsson (2006) have noted, these efforts have not gone far enough in explaining the process of firm emergence. For one thing, like in main stream entrepreneurship studies, personal characteristics and individual backgrounds have not proved to be definitive determinants of entrepreneurial performance. Secondly, although there has been some work on non-personal factors like environmental context factors, there has not been enough done to harmonize resultant empirical findings, perhaps, as was pointed out earlier in this report, because there is limited theoretical grounding in many of the studies undertaken on nascent entrepreneurship.

It was not the objective of this study to synchronize the present maze of often conflicting findings. Instead, the study stemmed firstly, from the realization that some seemingly important pieces of a possible explanatory structure for nascent firm emergence have not been fully explored; and secondly, from the perspective that since theory building is a gradual process, explication of any of the significant correlates of nascent firm emergence would be a contribution to this process.

With the above setting in mind, this chapter discusses three major themes that emanate from the study: resource strategies and progress to emergence, the role of gestation activities performance as a mediating influence between resource strategies and firm emergence, and the adequacy of the model in explaining the process of firm emergence.

### **5.3.1 Resource Strategies and Progress to Emergence**

The first theme that emerges from this study regards the relative importance of social embeddedness and resource bootstrapping to firm emergence. The development of the hypotheses about resource strategies and performance was based largely on resource dependence (Pfeffer & Salancik, 1978) and social exchange (Levine & White, 1961) theories. Two premises were drawn from these theories: (1) that firms lacking essential resources will seek to establish relationships with other actors in order to access the needed resources [hence the study's focus on social embeddedness], and (2) that firms will attempt to alter their dependence relationships by engaging in strategies to reduce this dependence [hence the study's focus on resource bootstrapping].

Findings from the study point to, at a minimum, equal importance of social embeddedness and resource bootstrapping dimensions in accounting for variation in the progress to emergence of nascent entrepreneurial efforts as indicated by their respective



beta values in the regression analysis. A closer examination of the raw data however, shows that respondents relied more on social embeddedness than bootstrapping for access to resources. On average, four out of ten of the respondents indicated that they relied on social embeddedness strategies as compared to one quarter for resource bootstrapping.

Contrary to this imbalance in practical application, existing studies have focused more on resource bootstrapping compared to social embeddedness. To be fair, the study acknowledges that examination of the role social capital plays in nascent entrepreneurship is not a new phenomenon. There were however, some differences between this study's focus on social embeddedness and what has been done elsewhere. First, existing studies (e.g. Reynolds et al., 2001; Kim et al., 2006; Wagner, 2004; Arenius & Minniti, 2005) have examined the role of social capital with respect to the discovery, but not to the exploitation process of firm founding. This is clearly evident in summaries of existing empirical research on nascent entrepreneurship by Johnson et al. (2006) and Davidsson (2006). The statement from Davidsson (2006) about there being evidence that social capital is important for the *decision* (emphasis mine) to engage in venture start-up processes is a pointer to this limitation. Additionally, there is a chapter (Chapter 29: 324-335) in Gartner et al.'s (2004) PSED project-based book which discusses the role of social variables in nascent firm processes. However, none of these efforts shed light on whether their findings transcend into the exploitation phase of the founding process. Secondly, social embeddedness, as operationalized in this study, is different from the social capital used in the said studies. PSED- and GEM-based studies are constrained in their coverage of social environment related factors and do not go beyond the advantages nascent entrepreneurial efforts gain from the initiator having parents, relatives, or friends who are entrepreneurs or self employed or at best the

initiators having worked in parent's entrepreneurial firms (e.g. Davidsson & Honig, 2003; Arenius & Minniti, 2005). In contrast, social embeddedness, as examined in this study, stems from the nascent firm taking advantage of dyadic relationships not only with family and friends but also with all the important members of the supply chain as well as providers of labor and capital. As it turned out, relationships with supply chain members accounted for more of the variance in firm founding than familial relationships. Thirdly, as explained in Chapter 2, social embeddedness, understood as the mechanism through which social capital is harnessed, presents a different approach from what has been used in existing studies. Finally, in this study, social embeddedness is tested as a single predictor as well as alongside, and relative to, resource bootstrapping.

Returning to the first theme of the study, it turned out that resource bootstrapping and social embeddedness did not have a strong direct influence on progress to emergence. As is predicted in the conceptual model, this influence is mediated by gestation activities performance, discussed in the next section. For direct influence on progress to emergence, supply chain embeddedness accounted for six percent of the variance while financial resources bootstrapping accounted for less than two percent. The point being made here, however, is in the relative explanatory power of the two variables. The finding bespeaks of the need to give prominence to social embeddedness dimensions as has been given to resource bootstrapping in recent nascent entrepreneurship literature. Moreover, a post hoc comparison of the elasticity of the slopes of supply chain embeddedness and financial resource bootstrapping plotted against progress to emergence (i.e. percentage change in PTE / percentage change in financial resource bootstrapping compared to a similar ratio for supply chain embeddedness) indicated that a unit change in supply chain embeddedness results in a higher response change in

progress to emergence than is the case for a unit change in financial resource bootstrapping. Similarly, in the case of gestation activities performance (GAP), the response change in GAP attributed to a unit change in supply chain embeddedness is higher than the response change to financial resources bootstrapping.

The implication here is that supply chain embeddedness becomes increasingly more important than financial resource bootstrapping as the founding process progresses towards emergence. This is perhaps not surprising. Bootstrapping may be very important in the performance of the very first initial activities but as more tangible activities are performed, the visibility of the nascent effort among members of its organizational field increases and further progress is likely to be predicated more on social relationships with significant stakeholders than on resource bootstrapping.

In summary, what the findings from this study suggest is that the emphasis on bootstrapping, while not at all misplaced, is wanting from the perspective of a more adequate explanation of what nascent firms do when they are resource-strapped. Notably, this deduction is in agreement with the emerging view that resource bootstrapping as resource gap filler is becoming outdated and that instead, access to resources is enhanced by effective relationships with the relevant publics.

### **5.3.2 Gestation Activities Performance**

A second overriding theme in the study was the performance of gestation activities. Three questions were asked in regard to this theme. The first of these was whether there is a normative order of performing initial activities that enhances the prospects of emergence, or, alternatively, diminishes the likelihood of early abandonment as investigated by Delmar and Shane (2003b; 2004). This question was interesting because of the conflicting findings in extant literature and because of its implications for

practice. Delmar and Shane (2004) presented analyses that led to the conclusion that there is indeed a normative order and that deviation from this order led to greater risk of abandonment. In another study (Delmar & Shane, 2003b), the authors found that starting with planning ahead of marketing activities resulted in more favorable outcomes. On the other hand, Carter et al. (1996), Liao and Welsch (2002), and Newbert (2005) found no evidence to support the existence of an identifiable sequence. Moreover, researchers like Honig and Karlsson (2003) have argued that some initial activities, particularly business planning, take precedence because of coercive and mimetic pressure for isomorphism rather than because they improve the prospects of emergence. Indeed these authors found weak or no relationship between business planning and business outcomes.

This study did not find evidence that starting with legitimating activities ahead of marketing or operational activities led to a higher progress to emergence status. In the same breath, starting with marketing or operational activities did not show any statistically significant advantage. This finding is in support of the position taken by Carter, et al. (1996), Liao and Welsch (2002), Newbert (2005) and others that there does not appear to be a normative order for performing gestation activities which, if not followed, would compromise progress to emergence. Conversely, the finding is in contrast to Delmar and Shane's (2004) conclusion that order is important. The non-significant finding is contrary to the hypothesized position of the study. The study expected to elicit a positive link between starting with legitimating activities and progress to emergence. The hypothesis was developed using institutional theory and was premised on the assumption that starting with legitimating activities would improve the acceptability of the nascent firm among populations that control access to resources and markets and consequently, enhance the nascent firm's gestation activities performance. It

is noteworthy that, antithetical to this lack of significant finding between activity ordering and progress to firm emergence, 63.3% of the respondents in the sample reported that they started with a legitimating activity. It is possible, when one looks at the array of legitimating activities that nascent firms start with these activities because it is the logical thing to do. However, starting with these activities gives the nascent business an identity in the eyes of prospective partners. There should be performance related advantages that accrue to the firm's establishment of a distinct identity in its organizational field. This study is not in position to confirm whether the inclination to start with legitimating activities is purely due to convention or mimetic isomorphism but it would appear to be a norm that is hard to ignore and that begs theoretical explanation. It seems apparent that there is a performance variable in between the two tested that diminishes the direct effect of first activity on progress to emergence. The study did not set out to test the mediating effect of gestation activities performance on the relationship between progress to emergence and first activity. However, a post-hoc examination using the Sobel test proves the existence of an indirect relationship.

Interestingly, when separated from other legitimating activities, developing a business plan as a first activity shows a significant, albeit weak, relationship with progress to emergence. Results also show that four tenths of the sample prepared a business plan as their first activity. The effect of planning on business outcomes is another contentious issue in nascent entrepreneurship research. While Delmar and Shane (2003) and Frese, et al. (2007) found a positive effect for planning, Parker and Belghitar (2004) and Newbert (2005), using sales as the business outcome, found no effect. Similar to the results of this study, Honig and Karlsson (2004) found marginal support for business planning but with survival as the outcome variable. Counterintuitive as it

sounds, the weak findings from this study lend support to Honig and Karlsson's (2004) argument that new ventures prepare business plans because of mimetic and coercive pressures rather than because of expectation of better business outcomes. Again, the explanation lies in the mediating influence of gestation activities performance.

The second question related to gestation activities performance concerned the pace at which gestation activities are performed. It was hypothesized that faster execution of gestation activities would be positively related to progress to emergence. The results showed this to be true but only in the earlier stages of emergence. The function peaked and then declined. This result is somewhat different from the 'doer' approach to firm emergence proposed by Samuelsson (2001) which presents a more linear relationship. Samuelsson found that firms that undertook more activities per time unit were more likely to succeed. The curvilinear relationship found in this study appears to be more in agreement with Lichteinstein et al.'s (2004) thesis that the more successful companies initiate many activities simultaneously up to a threshold that the authors referred to as a tipping point. Once this peak or tipping point has been attained, pace ceases to be important to firm emergence.

Although this finding appears to make sense and probably in agreement with chaos or entropy theory, one cannot presume its generalizability. It would be erroneous to assume that the result is true for all types of new business ventures. Although, in this study, controlling for industry type and idea novelty failed to capture the heterogeneity that is prevalent in business start-ups, it stands to reason that different types of start-up businesses will require a different number of initial activities and some may take longer periods of time to attain the peak. As chaos theory suggests, nearly identical sets of initial conditions may result in significantly different outcomes. Similar to the finding about

sequencing of activities, more generalizable results would be elicited from studying and analyzing nascent firms in more homogeneous subgroups.

The third question asked about gestation activities performance was about its role as a mediating influence between resource strategies and progress to emergence. The reasoning behind the hypothesized relationships was that availability of resources enables nascent firms to perform more activities which in turn would be advantageous to the process of emergence. Before testing the mediation role, resource bootstrapping and social embeddedness were tested as predictors of gestation activities performance. As is shown in Chapter Four, the most important predictors were financial resource bootstrapping and supply chain embeddedness. Supply chain embeddedness accounted about 13% of the variation in nascent firm's gestation activities performance while financial bootstrapping accounted for 9% of the variance. This provides further evidence for the need to include social embeddedness among explanatory factors of the firm emergence process, alongside the currently emphasized resource bootstrapping. It also transpired that when financial resource bootstrapping and supply chain embeddedness are in the model, the effect of the other dimensions either diminishes (as in the case of tangible and intangible resource bootstrapping) or becomes inverse (as in the case of institutional and familial embeddedness).

These are circumstances that require further investigation. At this time, I can only speculate that firms' mastery of financial resources and key relationships with suppliers of inputs renders other forms of resource scraping less significant contributors to firm growth, or, as in the case of social embeddedness, the superfluous relationships take time away from the venture and work against progress to emergence.

Regarding gestation activities performance as a mediator, results from the study

supported the partial and full mediation role for supply chain embeddedness and financial resource bootstrapping respectively. These relationships do not hold for the other dimensions of the two variables. As it turned out, respondents did not use resource bootstrapping as much as the study had anticipated. The distribution is heavily skewed toward non-use with the only exceptions being ‘working for home to save on rent for office space’ and to a lesser extent ‘using credit cards to finance business’ and ‘using network connections to access resources the firm was previously unaware of.’ In contrast, the distribution for social embeddedness strategies was tilted towards ‘agree’ and ‘strongly agree’ responses indicating strong reliance on social relationships. The exception was ‘counting on local, state, or federal agencies for support.’ This, again, suggests that social relationships are playing an increasingly more important role in generating positive business outcomes and are supplanting the reliance on resource bootstrapping which is favored by recent research efforts.

### **5.3.3 The Study’s Firm Emergence Model**

The predictor variables in the conceptual model of the study account for 12.8% of the variance in the outcome variable, progress to emergence. Predictably, the most influential variable, based on standardized beta coefficients was gestation activities performance. This was followed by social embeddedness while resource bootstrapping did not show statistical significance. The control variables did not significantly influence the model as all the control variable coefficients were not statistically significant. As discussed in previous sections, social embeddedness had a direct effect on progress but is also partially mediated by gestation activities performance. This is what was predicted in the conceptual model. Conversely, the beta coefficient for bootstrapping is non significant – a pointer to full mediation by gestation activities performance. It would not



make sense to infer from the non-significance of the direct relationship that use of the bootstrapping techniques is altogether ineffectual on progress to emergence.

### **5.3.4 Resource Strategies and Learning**

The last set of hypotheses in the study concerned the link between the experience of business founders and learning. The study hypothesized that repeat entrepreneurs would use the bootstrapping and social embeddedness resource strategies more than novice entrepreneurs that were experiencing business founding for the first time. The hypotheses were inspired by experiential learning and other behaviorism theories which maintain that learning is process where knowledge is created through the transformation of experience (Levin, 1948; Kolb, 1984) and that behavior is shaped through positive or negative reinforcement (Skinner, 1969, Bandura, 1986). According to these theories, reinforcement increases the probability that the antecedent behavior will be repeated. The study accordingly hypothesized that if repeat entrepreneurs experiences positive outcomes from using resource bootstrapping and social embeddedness in their previous business founding attempts, they would be inclined to deploy the same strategies again.

The results of the analysis, as shown in the last chapter, were positive for financial resource bootstrapping and for supply chain embeddedness. This is evidence that firms started by repeat entrepreneurs had learned from previous experiences and used the resource strategies more than those spearheaded by their less experienced entrepreneurs.

Overall, the study found that resource bootstrapping techniques were not commonly used by either group. More than two thirds of the respondents had used 10 or less of the 27 resource bootstrapping practices. An examination of the zero order correlations between business founding experience and resource bootstrapping dimensions showed positive albeit weak correlations for financial bootstrapping and

intangible resources bootstrapping but negative for tangible resources bootstrapping. A possible explanation for the inverse relationship with tangible resource bootstrapping may be that serial entrepreneur's firms will have accumulated assets like machinery and equipment and will be less likely to resort to bootstrapping methods for tangible resources. Additionally, there is a positive correlation between resource adequacy and founding experience such that firms initiated by repeat entrepreneurs will not be as resource-poor as those founded by novice entrepreneurs. The businesses might be new but the founders have performance history to back their quest for resources and markets.

One would have expected the performance history argument to carry to social embeddedness but, paradoxically, it did not in this study. It seemed reasonable to assume that repeat founders are more established in their organizational fields and should therefore be able to garner more trust from constituents. However, the relationship is significant only for supply chain embeddedness but even then it is weaker than one would have expected. There are two possible explanations that could also extend to the use of resource bootstrapping methods. One, the study assumed that repeat entrepreneurs had used the strategies in question in their previous attempts and therefore have positive or negative experiences to learn from. This might not have been the case. Secondly, the sample of repeat entrepreneurs includes founders whose previous attempts failed. Since it has been established that anywhere between 33 – 50% of nascent efforts fail (Davidsson, 2006), it is possible that failed entrepreneurs who nevertheless, try again, contaminate the sample of repeat entrepreneurs.

### **5.3.5 Other Findings**

Another intriguing finding from the study that deserves comment is the insensitivity of the test variables in the study to the control variables. The major control

variables were industry type, idea novelty, and entrepreneurs' founding experience. The selection of these variables was largely literature based and goes back to the heterogeneity of efforts at firm founding. As indicated earlier, any random sample of nascent firm is always going to be heterogeneous along many dimensions. The study assumed that resources requirements would differ with respect to type of industry and the novelty of the idea being exploited and that firm founding experience would influence access to resources in favor of the more experienced founders. However, the effect of the control variables did not turn out to be as strong as was expected. In the analyses, progress to emergence was insensitive to all three control variables while gestation activities performance was sensitive to idea novelty and type of industry. The explanation may however, lie in the way gestation activities performance and progress to emergence were conceptualized. The type of industry in which the nascent firm hopes to compete, and the extent to which the idea being exploited differs from what is known by organizational constituents, will make a difference to resource requirements and resource availability respectively. These, resources requirements and availability, are key factors in gestation activities performance. However, these differences did not matter as much in reporting progress to emergence. The assumption that firms in less manufacturing based industries with less uncertainty would report faster progress given similar antecedent factors to their counterparts in manufacturing and more innovative endeavors did not hold. This may explain the gestation activities performance's sensitivity, and progress to emergence's indifference, to the controls.

#### **5.4 Implications of Findings**

This section discusses the implications of the findings of the study to theory, policy, and practice.

### **5.4.1 Implications for Theory**

As indicated in earlier sections of this report, theory building in nascent entrepreneurship as an academic field is still in its early stages. There is still much evaluation and argumentation going on and new conceptualizations, moderating and mediating variables will continue to be added until the field's antecedents and outcomes are fully accepted (Colquitt & Greenberg, 2003). Extant nascent entrepreneurship literature has investigated factors such as personality characteristics of individuals and teams involved in venture creation processes, initial activities undertaken to create new ventures, and to a lesser extent, environmental contexts of firms in gestation. There is a fair amount of agreement concerning personality factors, and, albeit to a lesser degree, about actual activities undertaken in venture creation. There is, however, much less agreement about the factors that explain the variation in the performance of these gestation activities and the effect on emergence. Questions of contextual influences on performance as well as appropriate structure and strategy remain largely under researched. In the light of this, any study that adds to antecedents, mediators, or moderators that explain the variance in firm formation, makes a theoretical contribution. This study did that. There has been considerable research linking bootstrapping to nascent firm outcomes, but not as much empirical work has been done on social embeddedness. The finding that social embeddedness may in fact explain more variation in progress to emergence than resource bootstrapping bespeaks of the need to include the variable in future models aimed at explaining firm founding.

Also different in this study, is the examination of gestation activities performance as a mediating variable between progress to emergence and resource strategies. None of the studies reported by Johnson et al. (2006) or Davidsson (2006) has done this. The

results from this study have shown that gestation activities performance has a partial mediating effect for social embeddedness and full mediation for resource bootstrapping. This, again, is an addition to the continuing development of theories that explain the nascent entrepreneurship process.

Furthermore, the study subdivided the strategy variables into distinct dimensions. It should be interesting to theory development as well as practice that some of these dimensions exhibit opposing relationships with the dependent variable when they are regressed together.

#### **5.4.2 Implications for Policy and Practice**

The Global Entrepreneurship Monitor estimated that in 2004, as many as 500 million people around the world were simultaneously engaged in nascent or recent entrepreneurial activity. With a subject as practical as this, academic theory that cannot be translated into policy and practice is infertile. Resource bootstrapping is probably instinctual for most earnest entrepreneurs. However, social embeddedness requires more deliberate effort, education and learning. The practical benefits of social relations have long been proven and consolidated since Granovetter's (1973) work on strong and weak ties. What remains to be done is to deliberately exploit these advantages and extend them beyond family, schoolmates and social clubs to the entire length of the supply chain. Policy makers, especially in the underdeveloped world where the encouragement of viable young businesses may be one of the most important actions that will address the mire of poverty that envelopes them, need to refocus attention away from finance as the only constraint hindering business development to more proactive strategies such as supply chain embeddedness that have the potential to overcome institutional constraints and build viable businesses.

## **5.5 Limitations of the Study**

One important limitation of this study is its cross-sectional, single-informant design. Data for both the dependent and independent variables was collected in one survey and from the same respondent. This approach has been criticized for introducing common methods bias, a possible source of measurement error (Campbell & Friske, 1959; Nunnally, 1978; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

Another limitation lies in the fact that the study used a sample of individuals drawn from a names database of volunteers registered with a university project. Although this list is diverse and in several respects similar to the population distribution, sample members were more likely to be in the upper educational echelon, all having e-mail addresses and with easy access to computers and the Internet. This may have introduced a selection bias.

A further limitation may lie in the measurement of the dependent variable. Asking respondents to assess their own progress to emergence introduced subjectivity in the measure. It was also assumed that higher stages on the measurement scale indicated superior emergence positions. This may not always be so. A nascent firm that chooses to abandon an opportunity that has lost its viability in search of another may be in a superior position to a firm that continues a non profitable effort out of escalation of commitment. However, given the lack of agreement about what constitutes “founded” in the nascent entrepreneurship process or how many upper boundary indicators are necessary to qualify a nascent firm as founded (see Carter et al., 2004) and the fact that nascent firms are not likely to be registered with agencies like Dun & Bradstreet, it was difficult to come up with a more objective measure.

There was also a limitation concerning the use of factor analysis. Ideally, factors generated from one data set should be tested on a different data set. In this case, the data used for generating factors is the same data that were subsequently used for analysis. Although this was not the ideal, it is important to note that the factor analyses conducted for each of the independent variables did not have overlapping data and that there is no evidence of multicollinearity.

A fourth limitation is that respondents were asked to recall dates and details of events, some of which had taken place 18 months previously. Recalling facts and events retrospectively may have introduced hindsight and memory decay biases in their responses.

Lastly, online surveys, being a relatively new phenomenon, have not been fully embraced by the research community and are criticized, for example, for their lack of face to face contact and therefore, the inability to cross check respondent's answers by other data gathering techniques such as observation.

## **5.6 Conclusions, Contribution, and Recommendations for Future Research**

This section concludes Chapter 5 by highlighting the major conclusions of the study, its contribution to existing literature, and possible areas for future research.

### **5.6.1 Conclusions and Contributions**

This study makes a contribution to existing nascent entrepreneurship literature in a number of ways. First, it responds to Gartner & colleague's (Gartner, 1988; Gartner & Carter, 2003) call to focus research on behaviors in the process of emergence and away from individual characteristics. The study focused on the process of firm creation and explored mechanisms that nascent firms may resort to when institutional forces threaten their progress to emergence. The study concluded that developing and exploiting social

relationships with members of the supply chain improves the prospects of emergence irrespective of the industry in which the nascent venture intends to compete, the novelty of the idea being exploited, and the entrepreneurial experience of the founders.

Secondly, there are two recent exhaustive reviews of extant literature on nascent entrepreneurship: Davidsson's (2006) *Developments in the Study of Nascent Entrepreneurs* and a special edition of *Small Business Economics* edited by Johnson et al. (2006). Neither of these sources reports any work on the nexus of the two business start-up dimensions – performance of gestation activities and firm strategies (see Gartner 1985). Many studies (e.g. Carter et al., 1996); Delmar & Shane, 2002) have explored various aspects of the performance of gestation activities while others (e.g. Winborg & Landstrom, 2000; Harrison, et al., 2004; Ebben & Johnson, 2006 Baker, 2007) have looked at various resource strategies employed by nascent entrepreneurs. This study brought the two dimensions together and found that gestation activities performance to be a significant mediator of the relationship between the supply chain embeddedness and financial resource bootstrapping strategies on one hand, and progress to emergence on the other.

Thirdly, much of the existing research that includes elements of the effect of social capital related variables on nascent entrepreneurship outcome variables, is focused on entry into the start-up process (e.g. Kim et al., 2003; Arenius & Minniti, 2005) and rarely, if at all, on the exploitation process itself. This study added to this stream of research in two ways. One, the operationalization of the predictor variable was expanded beyond the immediate family, peers and friends to include relationships all along the supply chain, thereby introducing different dimensions of the variable. Two, social embeddedness, and by implication the resultant social capital, was examined in relation to the exploitation



phase of the founding process. The finding of the study is that supply chain relationships are significant predictors of nascent firms' progress to emergence.

Finally going back to the conceptual model and breaking it down to indicators for each predictor variable, the study added to existing knowledge by establishing hitherto unexplored relationships. The study found full mediation effect for financial resource bootstrapping and partial mediation effect for the supply chain embeddedness indicators. Furthermore, the study found that the most influential predictors of nascent firms' progress to emergence are gestation activities performance, financial resources bootstrapping, and supply chain embeddedness. Needless to say, these findings are subject to further testing across samples and model specifications.

### **5.6.2 Recommendations for Future Study**

Nascent entrepreneurship processes, including the exploitation process discussed in this study, are far too complex for simple generalizations (Gartner, et al., 2004). Secondly, as Davidsson (2006) noted, any randomly drawn sample of nascent firms is likely to be heterogeneous on many dimensions. This is likely to mask relationships and make generalizations difficult. Future studies therefore need to either, subdivide samples along various dimensions and analyze the sub-samples separately or find methodological ways of dealing with the heterogeneity in the samples and the heterogeneity and complexity of the founding processes.

Secondly, in this research, some of intuitively hypothesized relationships were found to be weaker than anticipated and others were non significant. This suggests possibilities of contextual variables, not in the model, that confounded these relationships. Future research needs to focus more on isolating the moderating influence of the contextual environment of nascent firm founding.

Thirdly, longitudinal studies focusing on the exploitation process would be more useful for purposes of the continuing effort in theory development and for establishing causality.

Fourthly there is need to harmonize existing empirical findings on nascent entrepreneurship literature. To date, research efforts are disparate and only a few researchers build on the previous studies. Where this has been done it is usually the same author or authors (e.g. Delmar & Shane, 2002; 2003; 2004) building on their own previous work. This limits the common ground for theory building discussion about nascent entrepreneurship phenomena. There is need for replication of studies using samples that are comparable and for the methodological triangulation of studies already undertaken, including the present one. Similarly, there is a need for meta-analyses of existing findings. Such research will add to the robustness of findings in the field and open the way for theory development.

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APPENDIX A: INSTITUTIONAL REVIEW BOARD APPROVAL.

IRB #: E359K LSU Proposal #: \_\_\_\_\_

Revised: 10/04/2006

LSU INSTITUTIONAL REVIEW BOARD (IRB) for HUMAN RESEARCH SUBJECT PROTECTION

578-8692 FAX 6792 Office:203 B-1 David Boyd Hall

APPLICATION FOR EXEMPTION FROM INSTITUTIONAL OVERSIGHT

Unless they are qualified as meeting the specific criteria for exemption from Institutional Review Board (IRB) oversight, ALL LSU research/projects using living humans as subjects, or samples or data obtained from humans, directly or indirectly, with or without their consent, must be approved or exempted in advance by the LSU IRB. This Form helps the PI determine if a project may be exempted, and is used to request an exemption.

Instructions: Complete this form.

Exemption Applicant: If it appears that your study qualifies for exemption send:

- (A) Two copies of this completed form,
(B) a brief project description (adequate to evaluate risks to subjects and to explain your responses to Parts A & B),
(C) copies of all instruments to be used. If this proposal is part of a grant proposal include a copy of the proposal and all recruitment material.
(D) the consent form that you will use in the study. A Waiver of Written Informed Consent is attached and must be completed only if you do not intend to have a signed consent form.
(E) Certificate of Completion of Human Subjects Protection Training for all personnel involved in the project ( including students who are involved with testing or handling data) at http://cme.cancer.gov/clinicaltrials/learning/humanparticipant-protections.asp. (Unless already on file with the IRB.)

to: ONE screening committee member (listed at the end of this form)in the most closely related department/discipline or to IRB office.

If exemption seems likely, submit it. If not, submit regular IRB application. Help is available from Dr. Robert Mathews, 578-8692, irb@lsu.edu or any screening committee member.

Principal Investigator \_Warren Byabashaija\_ Student? \_Y\_Y/N

Ph: 225 578 6152\_E-mail\_wbyaba1@lsu.edu\_Dept/Unit Management

If Student, name supervising professor \_Dr James H. Moore\_ Ph: 225 578 6108

Study exempted by Louisiana State University Institutional Review Board 203 B-1 David Boyd Hall 225-578-8692 Robert C. Mathews, Chair

Mailing Address \_3550 Nicholson Dr. Apt # 2117 Baton Rouge LA 70802\_ Ph\_225 284 0856

Project Title \_A Study of Nascent Entrepreneurs\_

Agency expected to fund project \_NA\_

Subject pool (e.g. Psychology Students)\_Nascent entrepreneurs in Louisiana\_

Circle any "vulnerable populations" to be used: (children <18; the mentally impaired, pregnant women, the aged, other). Projects with incarcerated persons cannot be exempted.

I certify my responses are accurate and complete. If the project scope or design is later changed I will resubmit for review. I will obtain written approval from the Authorized Representative of all non-LSU institutions in which the study is conducted.

PI Signature \_\_\_\_\_ Date 04.01.07 (no per signatures)

Screening Committee Action: Exempted [checked] Not Exempted \_\_\_\_\_ Category/Paragraph 2

Reviewer Mathews Signature Robert Mathews Date 4/17/07

## **APPENDIX B: INVITATION LETTER**

### **A Study of Nascent Entrepreneurs**

**Dear Entrepreneur,**

I want to invite you to participate in a study of entrepreneurial activities. You have been identified as an individual or part of a group of individuals either in the process of starting a new business or running an emerging entrepreneurial venture.

The purpose of this study is to better understand how emerging entrepreneurs obtain resources to perform initial activities in venture creation. Your participation in this research may provide an eye opener about the intricacies of starting new ventures and may enable policy makers and small business advisory agencies around the country to serve entrepreneurs better. Ultimately, the results may help individuals like you to more efficiently and effectively express their entrepreneurial talent.

The survey should take no longer than 20 minutes to complete. All responses are treated as confidential. Moreover, the study focuses on aggregate responses and no conclusions will relate to or be identified with any single individual. Participation is voluntary. You can stop taking part at any time without giving any reason and without penalty. Answering and returning the survey signifies your consent to participate in the study.

The study, conducted by Warren Byabashaija of Louisiana State University, is part of doctoral degree requirements.

If you have any questions about the study, please address them to:

Warren Byabashaija: phone (225) 578 6152 or e-mail: wbyaba1@lsu.edu or  
Dr. James H. Moore: phone (225) 578 6108.

If you have any questions about subjects' rights or other concerns, you can contact Robert C. Mathews, Chairman, LSU Institutional Review Board, at 203 B-1 David Boyd Hall, Phone (225) 578 8692.

Thank you for your help.

Sincerely,

Warren Byabashaija  
Department of Management  
Louisiana State University

## APPENDIX C: SURVEY INSTRUMENT

### ***A Study of Nascent Entrepreneurs***

All responses are confidential. The study focuses on aggregate responses and no conclusions will relate to or be identified with any single respondent. Participation is voluntary. You can stop taking part at any time without giving any reason and without penalty. Questions about the survey can be addressed to wbyaba1@lsu.edu. Questions about respondent rights or other concerns can be addressed to R.C. Mathews, Chairman, LSU IRB at 203 B-1 David Boyd Hall, Baton Rouge, LA 70803.

---

**INSTRUCTIONS:** Please respond to all the questions/items that apply to you and/or your business venture.

**1) Which of the following categories best describes the industry you are in?**

- Manufacturing
- Construction
- Wholesale
- Retail
- Services
- Other (please specify)

If you selected other please specify:

**2) Below is a list of activities that entrepreneurs tend to perform in the process of starting their businesses. Please check all the activities you have performed (even if not yet completed).**

- Prepared a business plan.
- Registered a business trade name.
- Opened a business bank account.
- Applied for licences/permits.
- Applied for patent or copyright or trademark.
- Devoted full time to business.
- Hired employees.
- Invested own money in business.
- Requested financial support.
- Purchased equipment/machinery.
- Rented or leased facilities/equipment/machinery.

- Purchased operating supplies or merchandise for resale.
- Purchased raw materials.
- Developed prototype of product.
- Produced goods/services.
- Identified target market(s) for products/services
- Promoted products/services.
- Made first sale.

**3) Which of the activities in the previous question (click arrow to see list) was your first activity?**

**4) When did you perform this (first) activity? (if you do not recall the day of the month, please state year, month, and then 01 for day).**

Format: YYYY-MM-DD

**5) For the following activities which take time to complete, please indicate the stage of completion.**

	Not started yet (0%done)	Initial stages (less than 50% done)	Middle stages (50-75% done)	Advanced stages (75% to near completion)	Completed (100% done)
Preparing a business plan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Applying for patent or copyright or trademark.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hiring employees.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Requesting for financial support.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Renting or leasing facilities/equipment/machinery.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Purchasing equipment/machinery.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Developing prototype of product.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Producing goods/services.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Identifying target market(s) for products/services.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Promoting products/services.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

**6) For the same list of activities (reproduced below) please rate your satisfaction with the extent of completion.**

	Not satisfied	Slightly satisfied	Satisfied	Very satisfied	Don't know
Preparing a business plan.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Applying for patent or copyright or trademark.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Hiring employees.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Requesting financial support.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Renting or leasing facilities/equipment/machinery.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Purchasing equipment/machinery.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Developing prototype of product.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Producing goods/services.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Identifying target market(s) for products/services.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Promoting products/services.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

**7) For the same list of activities (reproduced below), please rate the importance of each activity to the start-up process.**

Not very important	Fairly important	Very important	Don't know
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Preparing a business plan.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Applying for patent or copyright or trademark.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hiring employees.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Requesting financial support.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Renting or leasing facilities/equipment/machinery.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Purchasing equipment/machinery.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Developing prototype of product.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Producing goods/services.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identifying target market(s) for products/services.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Promoting products/services.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

**8) At the time you started your business, how adequate were the resources available to you?**

	Not adequate at all	Slightly inadequate	Neither adequate nor inadequate	Fairly adequate	Very adequate	Don't know/Not applicable
Financial resources	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Physical resources (e.g. office space, machines, equipment)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Experienced workers	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Raw materials	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business information	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**9) In your opinion, how much of the start-up process have you completed?**

Close to 0%  
  Close to 25%  
  Close to 50%  
  Close to 75%  
  Close to 100%  
  100%  
  Not sure

**10) In your opinion, how soon will you complete the start-up process?**

12 months or more  
  9 - 11 months  
  6 - 8 months  
  3 - 5 months  
  less than 3 months  
  Already completed  
  Not sure

**11) Frequently, entrepreneurs have to resort to non-traditional strategies to acquire resources. Which of the following strategies have you used?**

	Used	Not used	Not sure
Took in new partners.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Used credit card to finance business.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Obtained loans from family and/or friends.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Used money from your other business(es).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Obtained advance payments from customers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Used unpaid family members and/or friends.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Obtained resources from friends and/or associates at below market rates.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Used network connections to access resources you were previously unaware of.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Negotiated professional services at below market rates.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Obtained grants from local, state, or federal agencies.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**12) Consider this second list: Which of these strategies have you used?**

Used	Not used	Not sure
------	----------	----------

Hired temporary rather than permanent employees.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Used barter to get machines, materials and/or services.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Negotiated credit or deferred payments for the resources needed.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Leased rather than purchased equipment.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Purchased used rather than new equipment.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Deliberately delayed payments to creditors.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stripped resources from other projects.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Worked from home to save rent payments.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Enticed credit customers to pay sooner.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Received deferred payment terms from suppliers.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**13) Now consider this list: Which of these have you used?**

	Used	Not used	Not sure
Shared work space with another firm or firms.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Share employees with another firm or firms.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Shared equipment with another firm or firms.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Borrowed equipment from another firm or firms.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Outsourced part of my operations.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Shared business information with another firm or firms.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Shared business connections with another firm or firms.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**14) Only for the strategies you used on the first list (reproduced below): How often did you use each strategy?**

Only a few times	Intermittently	Routinely	Don't know/Not sure
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Took in new partners or investors	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Used credit card to finance business	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Obtained money from family and/or friends	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Used money from your other business(es).	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Obtained advance payments from customers.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Used unpaid family members and/or friends	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Obtained resources from friends and/or associates at below market rates.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Used network connections to access resources you previously did not know about.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Negotiated professional services at below market rates.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Obtained grants from local, state, or federal agencies.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**15) Only for the strategies you used on the second list (reproduced below): How often did you use each strategy?**

	Only a few times	Intermittently	Routinely	Dont know/Not sure
Hired temporary rather than permanent employees.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Used barter to get materials and/or services	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Negotiated credit or deferred payments for the resources needed.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Leased rather than purchased equipment.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Purchased used rather than new equipment.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Deliberately delayed payments to creditors.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Stripped resources from other projects.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Worked from home to save on rent payments.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Enticed credit customers to pay sooner.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Received deferred payment terms from suppliers.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**16) Only for strategies used on the third list (reproduced below): How often did you use each strategy?**

	Only a few times	Intermittently	Routinely	Don't know/Not sure
Shared work space with another firm or firms.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Shared employees with another firm or firms.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Shared equipment with another firm or firms.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Borrowed equipment from another firm or firms.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Outsourced part of my operations.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Shared business information with another firm or firms.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Shared business connections with another firm or firms.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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**17) Entrepreneurs often have to deal with other individuals, businesses, and organizations in the process of developing their businesses. Consequently, the entrepreneur seeks to build mutual relationships of trust and support. Please tell us the extent to which you can count on a mutual trusting and supportive relationship with the categories of individuals, businesses, and organizations indicated below.**

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
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Can count on family members for financial support.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Can count on family members to work for free or at below market wages.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Can count on friends and/or acquaintances to work for free or at below market wages.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Can count on financial support from other business people.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Can count on resource support (e.g. tools and equipment) from other business people.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Can count on network support from other business people (e.g. connections to their suppliers, distributors, financiers, etc.).	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Can count on other business people for business information (e.g. about pricing, sources of materials, etc.).	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Have good mutual working relationship with bankers.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Have good mutual working relationship with suppliers of raw materials and supplies.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Have good mutual working relationship with suppliers of machinery and equipment.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Have good mutual working relationship with renters of work space.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Have good mutual working relationship with skilled workers (working for your firm).	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Have good mutual working relationship with independent contractors.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Have good mutual working relationship with distributors of products.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Can count on local/state/federal agencies for financial support.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Can count on support of local/state departments for trade information.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Can count on support of local/state/federal agencies for business advice and training.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**18) Which one of the following best describes your business venture?**

- Offering new products/services not currently on the market.
- Offering existing products/services, but using different inputs.
- Offering existing products/service, but using a different production process.
- Offering products/services already on the market.
- Offering existing products/services, but in a different market.
- Other (please specify)

If you selected other please specify:

**19) How would you describe the current stage of your business venture?**

- Abandoned    Dormant    Still trying    Slowly emerging    Fast emerging

**20) Which one of the following categories best describes your business venture?**

- Independent start-up
- Purchase or takeover of an existing firm
- Franchise
- Start-up sponsored by an existing firm
- Not sure
- Other (please specify)

If you selected other please specify:

**21) How long have you been working on your business idea?**

- Less than 1 month

- 2 to less than 6 months
- 6 months to 12 months
- 1 to 18 months
- More than 18 months

**22) What is your business founding experience?**

- First time    Second time    Third time    Four or more times

**23) Have you taken any entrepreneurial courses or programs?**

- Yes    No    Not sure
- 

**24) What is your highest level of education?**

- Some high school
- High school diploma or equivalent
- Some college or community college
- Associate degree, vocational/technical degree, or community college degree
- Bachelor's degree or higher
- Decline to answer
- Other (please specify)

If you selected other please specify:

**25) What is your gender?**

- Female    Male    Decline to answer

**26) What is your age?**

- 20 years or younger    21 - 30 years    31 - 40 years    41 - 50 years    51 years or more    Decline to answer

**27) How many years of work experience have you had in the industry in which your new business will perform?**

**28) If you have had no experience, what was your most recent job?**

**29) Which one of these categories best describes your race/ethnic origin?**

- Caucasian
- African American
- Native American
- Hispanic
- Pacific Islander
- Decline to answer
- Other (please specify)

If you selected other please specify:

**30) Are you an immigrant?**

- Yes  No  Decline to answer

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Thank you very much for your help.

## VITA

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