

**DOES VENTURE OPPORTUNITY VARIATION MATTER? INVESTIGATING
SYSTEMATIC PROCESS DIFFERENCES BETWEEN INNOVATIVE AND
IMITATIVE NEW VENTURES**

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ABSTRACT

The central thesis in the paper is that the venture creation process is different for innovative vs. imitative ventures. This holds up: the pace of the process differs by type of venture as do, in line with theory-based hypotheses, the effects of certain human and capital predictors. Importantly, and somewhat unexpectedly, the theoretically derived models using HC, SC and certain controls are relatively successful for explaining progress in the creation process for the minority of innovative ventures, but achieve very limited success for the imitative majority. This may be due to a rationalistic bias in conventional theorizing and suggests there is need for considerable theoretical development regarding the important phenomenon of new venture creation. Another important result is that the building up of instrumental social capital, which we assess comprehensively and as a time variant construct, is important for making progress with both types of ventures, and increasingly so over the duration of the process. This result corroborates with stronger operationalization and more appropriate analysis method what previously published research has only been able to hint at.

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1. INTRODUCTION

Millions of new ventures are created each year, and mounting evidence suggests that innovations and competitive pressure created by these ventures are major factors in economic development. Yet, arguably, the process of new venture creation is still under theorized. Hence, research focusing on this phenomenon has the potential of making important contributions to the broader fields of economics, management, and organization theory, where theories usually start from an assumption that firms are already somehow in existence (Gartner, 1988; Katz & Gartner, 1988) or—if new entry is at all considered—where the process of moving from non-existence to an operational organization is treated in a cursory manner.

The study of the new venture creation is important not only to learn and theorize about that process in its own right, but also because highly consequential acts of domain selection, influencing the ventures' actions and success long into the future, are made at the time of the founding. A fundamental assumption in this research is that ventures are imprinted at the time of founding and that this has lasting effects on their subsequent strategy (Boeker, 1988; 1989), structure (Stinchcombe, 1965) and performance (Bamford, Dean & McDougall, 1999; Cooper, Gimeno-Gascon, & Woo, 1994; Romanelli, 1989).

The creation of new ventures is the central focus of entrepreneurship research (Davidsson, 2004; Shane and Venkataram, 2000), as well as in the Schumpeterian tradition in economics (Schumpeter, 1934). As emerging ventures are not-yet-existing entities, it is natural and relevant that extant research has focused on the characteristics of the individuals creating them. However, the emphasis in the early work on psychological characteristics of a single founder was largely unsuccessful and has been criticized as misdirected (Anonymous, 2006a; Gartner, 1988). In economics, on the other hand, few attempts are made to explain supply of entrepreneurial behavior by the ability of the enterprising actors.

This research, therefore, follows a tradition initiated by Schumpeter and followed by, among others, Nobel laureate Theodore W. Schultz, which in his seminal article *Investment in entrepreneurial ability* (1980), in which he, discussed the role of entrepreneurial ability, uncertainty and risk in a dynamic economy perspective. Entrepreneurial ability is viewed as a resource and as such with a value attached to it. A higher level of entrepreneurial ability sums up to a higher level of value because ability is costly to acquire and also not evenly distributed among individuals in society (Schultz, 1980). Rooted in this tradition we also follow more recent empirical work, focusing on the study of individuals involved from the perspective of what they bring to the venture in terms of human and social capital (Davidsson & Honig, 2003; Florin, Lubatkin, & Schulze, 2003; Gimeno, Folta, Cooper, & Woo, 1997); resources which arguably provide access to other critical resources needed for successful creation of new ventures. This is the route we will follow in this research, but unlike most predecessors we will apply a clear process perspective, making it possible to investigate differential influence over time.

Further, while individual characteristics have been much researched in the past, variance in the other main component in the—the opportunity or *venture idea* these individuals are pursuing—has been relatively neglected (Shane & Venkataraman, 2000)¹. Two types of economic change are important predictors of venture opportunity variation as well as entrepreneurial behavior. First, there is economic change that expresses a creative aspect, which if acted on initiates developmental processes under uncertainty (Hayek, 1945; Kirzner, 1973; Knight, 1921; Mises, 1949; Rosen, 1983). A perspective supported by economists coming from diverse traditions such as Veblenian (Hodgson, 1993), Schumpeterian (Nelson & Winter, 1982; Shane and

¹ The embryonic entity around which a new venture evolves is often referred to as ‘the opportunity’ in the extant literature (see, e.g., de Koning, 2003; Dimov, 2004; Gaglio, 1997; Sarasvathy, Dew, Velamuri, & Venkataraman, 2003; Shane, 2000; Shane & Venkataraman, 2000). We here refrain from using that term to denote the emerging entity under study. This is in order to avoid its inherent positive bias as well as any debate as to whether ‘opportunities’ are ‘discovered’ or ‘created’. The entities we refer to are creations of individuals’ minds. They may or may not reflect favourable external conditions, and they may or may not evolve into commercially successful ventures. The labels we here favour for these entities are ‘venture idea’ and ‘(emerging) venture’.

Venkataraman, 2000), Austrian (Witt, 1992), and Keynesian (Robinson, 1979). In general, they advocate the irrelevance of the notion of equilibrium in a world characterized by evolutionary change (see Nelson, 1994). On the other hand, there are changes that express an optimizing aspect which, if acted on, originates equilibrium adjustments under risk. This perspective is supported and developed by neoclassical economists, which have, sharpened their methods and by now provide endogenous accounts of the equilibrium approach in for example change of social institutions (e.g., Schotter, 1981), cooperative behavior, and vengeance (Guth & Yaari in Witt 1992). These two perspectives are competing alternatives only if they seek to explain the same phenomenon, which they obviously do not seek to do.

Considering these two types of economic change one fundamental aspect of such variation is the distinction between venture opportunities that essentially replicates products and processes that are already established in the economic environment where they are going to operate—*imitative ventures*—and those that introduce important novelty along at least some dimension—*innovative ventures*. Demand for Entrepreneurial behavior could therefore be seen as a function of entrepreneurial ability and venture opportunity variation. Innovative venture opportunities could potentially generate a higher value compared to imitative ventures therefore would individuals with a higher level of entrepreneurial ability be more prone to discover and exploit innovative venture opportunities. Investment in entrepreneurial ability is also costly, which suggests that individuals with higher entrepreneurial ability will be more prone to discover and exploit innovative venture opportunities because the potential higher pay offs. In a modern economy, however, small optimizing change in the economy is normal thus giving individuals with less entrepreneurial ability also impetus to discover and exploit imitative venture ideas.

Variation in entrepreneurial ability and venture opportunity variation is the main emphasis of our study. Thus, this study addresses the potential accumulation and variation of entrepreneurial behavior across time summing up in addressing *process differences between*

creation of innovative and imitative venture ideas. Knowledge about this issue is important because various stakeholders (policy-makers, educators, investors, business founders) have an interest in facilitating venture creation processes and avoiding their typical traps and detours. Distinguishing between different types of venture ideas is important because otherwise the matching of problem and solution may end up way off the mark. For example, it has been suggested that unlike novices, expert entrepreneurs are able to adapt their behavior to the degree of uncertainty associated with the new venture decision (Gustafsson, 2004). This suggests that if novices are taught one standard recipe it is highly likely to be misapplied.

The manuscript proceeds as follows. In the next section we develop our view of the venture creation process. This is followed by a theory section discussing innovative vs. imitative venture ideas, leading to the over-arching hypothesis that their respective venture creation processes should be different. This is followed by sections on human and social capital, leading to hypotheses regarding their role in the venture creation process for the two types of ventures. Our Method section then describes our sample and longitudinal data collection; the measures used, and the analysis method we employ. This is followed by a Results section where the findings concerning each hypothesis are reported. In the Discussion section we then interpret and discuss the results in the light of theory and previous research, and we also discuss some perceived strengths and limitations of our research. Finally, we conclude by restating the main substantive and methodological insights gained from this study.

2 THEORY AND HYPOTHESIS

2.1. New venture creation

The phenomenon we study is alternately referred to as entry (Geroski, 1995; Lumpkin & Dess, 1996); firm birth (Audretsch & Fritsch, 1994; Storey, 1994); business or firm start-up (Carter, Gartner, & Reynolds, 1996); firm gestation (Reynolds & Miller, 1992); organizational emergence (Lichtenstein, Dooley, & Lumpkin, 2006); firm or organizational founding (Ruef, Aldrich, & Carter, 2003), and new venture creation (Mitchell, Seawright, & Morse, 2000). We will mainly use the latter term.

Importantly, new venture creation is not a single event. Enterprising actors do not instantaneously create new ventures to exploit new venture ideas (Freeman, 1982). Instead, it is a process that includes many behavioral steps that can be undertaken in many different sequences, as related research has demonstrated (Carter et al., 1996; Reynolds & Miller, 1992; Sarasvathy, 2001). Katz and Gartner (1988) grouped the behaviors or ‘gestation activities’ undertaken in the process conceptually into the categories *intentionality*; *boundaries*; *resources*, and *exchange*. Delmar and Shane (2004) suggest the categories *legitimacy building activities*; *relationship building activities*, and *resource-acquisition activities*. We share the view that the venture creation process consists of completing behaviors fitting under these categories. However, this research is not concerned with what behavioral manifestations reflect what conceptual category or the sequence by which manifest behaviors or conceptual categories are undertaken (cf. Delmar & Shane, 2004; Shane & Delmar, 2004). Instead, our interest concerns the pace by which progress is made in the process in terms of the total number of activities that are completed at different points in time, and how this differs by venture type and amounts of entrepreneurial ability here in the form of human and social capital.

2.2. *Different types of venture ideas*

The fundamental determinant of entrepreneurial behavior is the perceived change in supply and demand (Kirzner, 1973; Knight, 1921; Mises, 1949; Rosen, 1983; Schultz, 1980).

Change is defined as a movement away from a present state toward a future state (Fox-Wolfgramm, Boal, and Hunt, 1998). Change, by its very nature, alters the underlying assumptions upon which production decisions are made. As a result, productive activities based on prior assumptions of market conditions are either inefficient or no longer perfectly in concert with demand (Dean and Meyer, 1996). When the different plans of individuals are mutually compatible, the market is in a state of equilibrium (Hayek, 1954). At equilibrium, price is equal to the marginal cost of production, and economic profits are absent (Scherer and Ross, 1990). Virtually, there is no demand for entrepreneurship in an equilibrium market. Two types of change are important to the demand function of entrepreneurship, creative and optimizing change.

Creative change is characterized as periodic discontinuities as opposed to optimizing change that involves development inside a given means-ends framework. Creative change in technology, for example, alters supply and demand combinations and creates new products and services. Schumpeter (1934) viewed technological change as one of the primary factors that initiated the entrepreneurial process and as the main explanation of economic development. Technological development is seen as fundamental to new combinations of goods or means of production and as a precursor to swarms of new enterprises (Schumpeter, 1934:226). Creative change can also occur in demand (Bedeian and Zammuto, 1991), or be a result of governmental regulations (Schultz, 1980).

Schumpeter refers to this particular manifestation of economic progress as innovations. In his words, “What we, unscientifically, call economic progress means essentially putting productive resources to uses *hitherto untried in practice*, and withdrawing them from uses they have served so far. This is what we call ‘innovation’” (1928:378; emphasis in original).

Innovative venture opportunities require the discovery of new means-ends relationships between supply and demand (Kirzner, 1997; Schumpeter, 1943)

The discovery and subsequent exploitation of innovative venture ideas represent a particular form or manifestation of entrepreneurial behavior whereby individuals with a particular form of entrepreneurial ability proactively create or are among the first to enter a new product-market arena that others have not yet recognized or actively sought to exploit (Covin et al., 1999; Shane and Venkataraman, 2000). By entering this unexploited arena, enterprising actors take the competition to a new arena, in which they hope to gain first mover advantage and some basis for a sustainable competitive advantage (Kirzner, 1985; Schumpeter, 1934). In this, product-market arena routines and competencies vary significantly from existing organizations (Picot et al., 1989, in Aldrich and Martinez, 2001). There is no direct competition (Aldrich and Martinez, 2001), and customer reaction is highly uncertain (Utterback, 1994). Design, production, and distribution require skills and resources very different from those used to provide the closest substitute products and services (Utterback, 1994).

Optimizing change, on the other hand, arises from imperfect information because of the shortcomings of the observer; we are not “Laplacian devils” that have perfect access to every informational aspect of a given phenomenon (Albert, 1992). Optimizing change involves transactions *within* an existing product-market arena and occurs as long as resources not are put at their best use inside that particular arena (Arrow, 1962, 1974). That is, optimizing change in supply and demand is important from a societal perspective because ventures’ created on the basis of reproducing venture opportunities increase competition and the competitive disciplining of industries (Scherer and Ross, 1990). Optimizing change in supply and demand alters the underlying assumptions upon which production decision have been made, resulting in market inefficiencies, in which, actors can perceive temporal and spatial

inefficiencies, if recognized, originates imitative venture initiatives (Aldrich and Kenworthy, 1999; Aldrich and Martinez, 2001; Kirzner, 1973). Imitative venture opportunities have routines and competencies that vary imperceptibly from those of existing ventures in established populations (Aldrich and Kenworthy, 1999; Aldrich and Martinez, 2001). Consequently, as long as there is market inefficiencies there will be a demand for entrepreneurial behavior.

It is possible to view the relation between innovative and imitative venture ideas through a life cycle approach. When innovative venture ideas are exploited, information diffuses to other actors in the market who can reproduce and appropriate some of the entrepreneurial profit from the exploitation process of the innovative idea away (Shane and Venkataraman, 2000). Imitative ideas exist until the entry of additional enterprising actors reach a rate at which the benefits from new entrants exceed the costs. The incentive for actors to exploit the opportunity is reduced because entrepreneurial profit becomes divided among more and more actors ultimately reaching equilibrium. In sum, entrepreneurs exploiting imitative venture opportunities move the market toward equilibrium (Kirzner, 1973; Mises, 1949) and as such, could be viewed as equilibrators in contrast to, the Schumpeterian (1934) view of entrepreneurs as disequilibrators, who creates new industries and new markets.

Obviously, the distinction between innovative and imitative ventures is not a true dichotomy. These extremes are ideal types that are rarely found in pure form empirically (Weber, 1947). This means that phenomena such as incremental (Dewar & Dutton, 1986), competence-enhancing (Anderson & Tushman, 1990) or sustaining (Bower & Christensen, 1996) innovation (as opposed to radical; competence-destroying or disruptive ones) are found somewhere on the continuum between the extremes represented by the ideal types. What we in a dichotomization call imitative ventures are not completely identical to what already exists on the market (or in the industry or population) and many instances of less radical

forms of innovation may fit better in the imitative than in the innovative category as these groups have been described above.

Importantly, from these theoretical descriptions it can be inferred that launching an innovative venture, under uncertainty and entailing greater complexity, should be a fundamentally different task compared with launching an imitative venture, under risk and at lower complexity. This leads us to our first, over-arching hypothesis:

H1: The venture creation process for ventures based on innovative ideas is different from the corresponding process for ventures based on imitative ideas.

We test this hypothesis first by comparing the number of gestation activities completed at different points in time. Second, we compare the overall fit of an explanatory model including all emerging ventures with separate models for innovative and imitative ventures, respectively. Third, we turn to the more detailed hypotheses concerning the differential roles of human and social capital by type of venture that is developed below.

2.3. The role of human capital

According to human capital theory, knowledge and the capacity for continued learning provides individuals with superior cognitive abilities, which make them more productive and efficient at a range of activities (Becker, 1964; Schultz, 1959; 1980). The theory has been successfully applied in a range of contexts, including entrepreneurship (Cooper et al., 1994; Davidsson & Honig, 2003; Gimeno et al., 1997). Individuals invest in, or accumulate, human capital through education and experience. These avenues to human capital accumulation lead to different forms of knowledge. Two overlapping categorizations of types of knowledge are *procedural* versus *declarative* (Anderson, 1990) and *tacit* versus *explicit* knowledge (Polanyi, 1967). Various forms of direct experience is a more likely source of procedural knowledge

that is difficult to articulate or codify, i.e., tacit knowledge. While experience can also yield explicit, declarative knowledge, formal education is more clearly geared towards systematic acquisition of this type of knowledge.

Another distinction is that between *general* and (domain-) *specific* human capital (Cooper et al., 1994). As these terms indicate the former refers to broadly applicable knowledge gained, e.g., through basic education and managerial experience whereas the latter refers to knowledge that is primarily relevant within a narrow domain and which can be gained through vocational training and other specialist education as well as experience in functional-specialist positions. In this research we use the level of education as indicator of general human capital; likely to reflect variance in explicit, declarative knowledge. We hold that general human capital should facilitate performance at the task of starting a new venture, whether innovative or imitative. Hence:

H2a: The level of formal education has a positive influence on making progress in the process of creating innovative ventures.

H2b: The level of formal education has a positive influence on making progress in the process of creating imitative ventures.

Although assumed to have a positive effect for both types of ventures, education is likely to be relatively more important for innovative than for imitative ventures. This is for several reasons. First, starting an innovative venture is associated with greater uncertainty and complexity. With greater complexity follows a need for a broader set of knowledge and skills, which should render general education level relatively more important for innovative ventures. Second, new ventures face 'liabilities of newness' (Aldrich & Auster, 1986; Stinchcombe, 1965) including the need to legitimize the venture in the product- and capital

markets (DiMaggio & Powell, 1983; Suchman, 1995). Arguably, the legitimacy problems should be more severe for innovative ventures, which try to introduce hitherto untested concepts. According to Aldrich and Martinez (2001) entrepreneurs pursuing innovative venture ideas face cognitive as well as moral and regulatory legitimacy issues. We argue that higher education should have a positive signaling value that to some extent mitigates these legitimacy problems.

The third reason for assuming differential effect of general human capital on imitative vs. innovative ventures is more technical in nature. Although human capital should increase performance *provided that the individual is motivated*, empirical evidence on this issue can be blurred by the fact that individuals with more human capital are also likely to have more attractive other alternatives and hence potentially a higher opportunity cost for staying committed to the creation of a new venture (Gimeno et al., 1997; Parker & Belghitar, forthcoming). As imitative new ventures should have less potential upside gain, we argue that highly educated individuals involved in such start-ups will be less convinced that the new venture alternative is superior to other alternatives and therefore less eager to complete the process. Hence, the positive effect of education on making progress in the process should be stronger for innovative ventures. Based on the above reasoning we suggest the following hypothesis:

H2c: The level of formal education is relatively more important for making progress in the process of creating innovative ventures than for creating imitative ventures.

Previous experience from starting up new ventures provides the individual with specific human capital in the form of declarative knowledge of rules and regulations as well as tacit, procedural knowledge about what to do and how to succeed in this process (Bandura, 1982).

This should facilitate making progress in the venture creation process for any type of new venture. Hence, we hypothesize that:

H3a: Previous venture creation experience has a positive influence on making progress in the process of creating innovative ventures.

H3b: Previous venture creation experience has a positive influence on making progress in the process of creating imitative ventures.

Although previous venture creation experience represents a different form of human capital than formal education we hold that the differential influence on innovative vs. imitative ventures should be similar. Based on theory and empirical research on expertise within cognitive psychology, Gustafsson (2004) predicted and largely confirmed that expert entrepreneurs apply analysis-based decision making for low uncertainty tasks but rely heavily on intuition—basically a form of tacit knowledge—in highly uncertain tasks. Novices, by contrast, apply analysis or heuristic decision making regardless of varying task characteristics. Assuming that experts wisely adapt their behavior, this suggests that experienced entrepreneurs would benefit more from their expertise when involved in innovative than with imitative ventures, relative to inexperienced venture founders. Further, the legitimacy argument put forward when discussing formal education also applies—and perhaps even more so—to previous venture creation experience. Therefore:

H3c: Previous venture creation experience is relatively more important for making progress in the process of creating innovative ventures than for creating imitative ventures.

Previous industry experience reflects a form of human capital that is more specific than education level. Relative to venture creation experience it is less specific, as industry experience would pay off also in employment within that industry. Like our other two indicators of human capital, and in line with the central argument in human capital theory, industry experience is expected to enhance performance. Hence:

H4a: Industry experience has a positive influence on making progress in the process of creating innovative ventures.

H4b: Industry experience has a positive influence on making progress in the process of creating imitative ventures.

Although industry experience is a form of human capital that is similar to venture creation experience we find reason to reverse our hypotheses regarding its relative influence on progress for innovative vs. imitative ventures. Schumpeter (1934) suggested that innovations are often introduced by outsiders to an industry, and this has been a recurring theme in various literatures ever since. In firm-level theorizing this is discussed as ‘incumbent inertia’ (Lieberman & Montgomery, 1988), ‘core rigidities’ (Leonard-Barton, 1992), ‘liabilities of adolescence and obsolescence’ (Henderson, 1999) and under a range of other labels (see Mosakowski, 2002). On the individual level, which is perhaps the more relevant in the current context, experimental psychologists have provided powerful demonstrations of how established ways of thinking make people blind to otherwise easily accessible and obviously superior solutions (e.g., Anderson, 1990). Hence, while industry experience may provide knowledge that facilitates the progress of any venture creation process there are caveats associated with industry experience in the context of innovative new ventures that suggest the following hypothesis:

H4c: Previous industry experience is relatively more important for making progress in the process of creating innovative ventures than for creating imitative ventures.

While it is possible to speculate about the relative importance of different aspects of human capital at different stages of the process, we hold that the theoretical foundations for such speculations are weak at the present time. We therefore refrain from suggesting temporal hypotheses regarding the effects of human capital.

2.4. The role of social capital

A collective-cumulative key insight from entrepreneurship research over the past couple of decades is that it is much less an individual game than initially presumed, and much more a social one (Aldrich, 1999; Stanworth, Blythe, Granger, & Stanworth, 1989). As a result, recent research has looked beyond the single individual and turned attention to team composition, networking, and social capital (Chowdhury, 2005; Clarysse & Moray, 2004; Davidsson & Honig, 2003; Eisenhardt & Schoonhoven, 1990; Florin et al., 2003; Ruef et al., 2003).

The central proposition in social capital theory is that networks of relationships provide their members with “collectively-owned capital, a credential which entitles them to credit in the various senses of the word” (Bourdieu, 1986:249). Social network contacts provided by extended family, community-based or organizational relationships are theorized to supplement human and financial capital (Bourdieu, 1983; Coleman, 1990). Social capital, then, is based on the actor’s social surroundings and gives the individual access to benefits such as “information, referrals, resources, and support” (Ibarra, 1997:91). Similarly, Nahapiet and Ghoshal (1998:245) define the social network 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.”

Theorists distinguish between different forms of social capital and network contacts. The best known example is probably Granovetter’s (1973; 1985) distinction between ‘weak ties’ to dissimilar agents, which can provide a social system with infusion of new knowledge and ideas, and ‘strong ties’ which create trust and facilitate rapid diffusion of knowledge within the core of the social system. Another well known and similar distinction is that between ‘bridging’ and ‘bonding’ social capital (e.g., Putnam, 2000; Svendsen & Svendsen, 2004) where ‘bonding’ stands for positive cohesion and trust but also negative exclusivity, while ‘bridging’ denotes links between social groups representing different knowledge, habits and aspirations in life.

In this research we will not explicitly pursue issues of tie strength or bridging versus bonding types of social capital. Instead we will focus on two functions of social capital that have been theoretically recognized in earlier work but apparently less focused on in empirical work. This is the distinction between social capital as a) emotional support and encouragement (cf. Foxall, 1997; Ibarra, 1997; Johannisson, 1995) and b) instrumental social capital that provides access to information, business partners, and resources (cf. Aldrich & Fiol, 1994; Barney, 1997). In particular, we make an effort to assess and estimate the effects of the building up of instrumental social capital over the process of venture creation.

Setting up a new business venture is psychologically a big step to take, at least for the majority of first time venture founders. Thus, encouragement from the social environment should be important for imitative as well as innovative venture creation processes. Therefore:

H5a: Social reinforcement has a positive influence on making progress in the process of creating innovative ventures.

H5b: Social reinforcement has a positive influence on making progress in the process of creating imitative ventures.

Based on the legitimacy arguments discussed in the human capital section it may be suspected, however, that encouragement from the immediate social environment is relatively more important in the case of innovative start-ups. As new members of already existing organizational populations, imitative ventures already have a form of general social sanction that innovative new ventures lack. The latter instead are likely to meet disbelief that may discourage the entrepreneur or hinder progress unless support from the immediate social environment offsets such setbacks. Hence:

H5c: Social reinforcement is more important for making progress in the process of creating innovative ventures than for creating imitative ventures.

Like in the case of human capital we argue that access to instrumental social capital makes individuals productive and efficient at a range of activities including the creation of new business ventures, be they innovative or imitative. Access to instrumental social capital should facilitate the venture creation process via access to more accurate and relevant information; contacts with prospective customers and resource providers, and therefore also better access to the various types of resources needed in the process. This suggests the following hypotheses:

H6a: Instrumental social capital has a positive influence on making progress in the process of creating innovative ventures.

H6b: Instrumental social capital has a positive influence on making progress in the process of creating innovative ventures.

For previously detailed arguments based on genuine uncertainty; task complexity and lacking legitimacy it is also reasonable to suggest that instrumental social capital will have a relatively more crucial role for innovative new ventures. Hence:

H6c: Instrumental social capital is relatively more important for making progress in the process of creating innovative ventures than for creating imitative ventures.

Although admittedly somewhat tentative, we think that in relation to instrumental social capital it is also possible to suggest a temporal hypothesis *a priori*. It is likely that individuals who at all engage in the process of starting a new independent venture already have some of the knowledge and resources needed to get the process going, and that they will initially favor venture creation activities for which their initial resource-base suffices. However, granted that they do not have omnipotent faculties, they will eventually have to stride into increasingly uncharted waters where their personal knowledge and resources no longer suffices. Hence, supplementary knowledge and resources accessed through the social network are likely to become increasingly important over time in the venture creation process (Davidsson & Honig, 2003). Hence:

H6d: The positive effect of instrumental social capital on progress in the venture creation process increases in magnitude from earlier to later stages in the process.

As we see no reason for this to differ by venture type we do not further subdivide this hypothesis.

3. METHOD

3.1. Sample and Data Collection

Our data are from the Swedish counterpart to the *Panel Study of Entrepreneurial Dynamics* (PSED) (Gartner, Shaver, Carter, & Reynolds, 2004; Reynolds, 2000). The study—SwPSED—shares with the US-based PSED an approach by which a sample of on-going venture creation processes is obtained by first contacting a very large random sample of households or individuals to establish contact with informants (‘nascent entrepreneurs’) who are currently involved in a venture creation process.

In the case of Sweden it is possible to start with a complete listing of adult legal residents. From this sampling frame we drew two equally sized random samples that will here be treated as one. The first sample consists of individuals 16-70 years and the second of individuals 25-44 years (which gives a higher yield of new venture start-ups). The total sample size is 49,979 individuals. Phone numbers were obtained for 35,971 individuals, and 30,427 of these participated in the screening interview. Out of these, 961 affirmatively answered screening questions suggesting that they were currently involved in a venture creation process, either alone or with others and either independently (about 80% of the cases) or at least partly as a job assignment (about 20%). They thereby qualified for a longer interview. Refusal/inability to participate in the longer interview in combination with failure to establish renewed contact led to a loss of 206 cases, and realization during the longer interview that the case did not qualify reduced the number by another 147, for a total of 623 completed first wave interviews.

Qualified respondents were re-interviewed 6, 12, and 18 months after the initial interview². Response rates for eligible cases were very high for these successive waves (90.5%; 91.9% and 98.5%, respectively). However, while non-participation in the follow-ups only marginally reduced the sample size, failure to meet stricter criteria for being regarded a valid case combined with real attrition (abandonment of the venture start-up) reduce the analyzable sample for which we have complete data to 259 cases.³ Because of sample stratification, non-response; attrition, and the requirement that the venture start-up was not reported abandoned before the 18 month follow-up these 259 cases do not perfectly represent the population of on-going venture creation processes in Sweden at the time of sampling (1998). Although this renders statistical significance testing a heuristic device rather than a precise teller of truths, we hold that what we analyze is a *theoretically relevant* sample. This is for our purpose more important than the sample representing the empirical population in a particular country at a particular time (cf. Davidsson, 2004:67-69). From a methods point of view the great advantage of our study is that it follows the venture creation processes concurrently, thus avoiding hindsight bias and rationalization after the fact⁴.

3.2. Measures: Dependent Variable

² Eligible respondents were also re-interviewed after 24 and 75 months, respectively. However, most of the variation in our dependent variable occurred during the first 18 months. For this reason as well as concerns for the size of the analysable sample, we restrict the analyses in this article to the first four waves of data collection (0, 6, 12 and 18 months).

³ These stricter criteria applied in arrears to the 622 cases interviewed are as follows. For a minimum, at least two 'gestation activities' had to be completed (cf. Reynolds; 1997; 2000). Cases were excluded as over qualified (already up and running) if all three of the following were met: a) money had been invested, *and* b) revenues had been received, *and* c) the venture was registered as a legal entity. In order to further homogenize the sample, cases that had already completed more than 15 'gestation activities' at the time of the first interview were also excluded (i.e., 50% of the possible maximum number of such behaviours).

⁴ The application of statistical significance testing can also be rationalized as follows. One could imagine that a census study exactly like ours had been undertaken instead, applying exactly the same researcher- and respondent-induced criteria for inclusion in the final sample. Our sample should be probabilistically representative for that sub-population of emerging new ventures in Sweden at the time of our study. We hold that making statistical inferences to this no doubt sizeable population is a theoretically and practically relevant exercise.

As we are dealing with emerging new ventures, traditional outcome variables like sales, profitability or firm value do not apply. The dependent variable in our research is progress in the venturing process. We capture progress with a summation of 30 different gestation behaviors—such as preparing a business plan; applying for a loan; renting a location, etc.—that might be undertaken in the process of trying to get a new venture up and running (see Table 1 and Gartner, Carter, & Reynolds, 2004). Each gestation activity is a dichotomous variable scored ‘1’ if completed at the point in time in question, and ‘0’ otherwise. Thus, our dependent variable is a formative index the number of gestation behaviors that have been initiated or completed (as reflecting the particular question) at each point in time. In the analysis testing hypothesis 2-6 the dependent variable is the accumulation of gestation activities over time.

<INSERT TABLE 1 ABOUT HERE>

3.3. Measures: Type of Venture

Empirically, few attempts have been made to distinguish between innovative and imitative venture ideas and their impact on entrepreneurial behavior (Dahlqvist 2007). Instead of viewing innovation as a technical event our approach is to view innovation as a market phenomenon (Hauknes, 1998; Schumpeter, 1934). It is shaped and created in the intersection between supply and demand and not a substantive event that underlies technological innovation (an approach often found in the innovation literature, see Cosh et al., 1998).

Venture type was here assessed through Latent Class Analysis (LCA) based on four dichotomous or dichotomized indicators: a) whether or not a patent, trademark, or design protection had been applied for; b) whether an R&D focus signified the venture’s strategy; c) whether the respondent felt the venture was alone in the market with its particular offering,

and d) whether the respondent felt that the venture had no direct competitors. The analysis suggested the ventures be grouped into two latent classes, and these could unambiguously be interpreted as innovative and imitative, respectively. Posterior probabilities are used for distinguishing between innovative and imitative venture ideas. Based on the Latent Class Analysis, 40 of the ventures in our sample were classified as innovative and the remaining 219 as imitative venture ideas. See Anonymous (2004) for further details. Rather than treating any of these indicators as “correct” we analyze them together in a latent variable framework that allows each to contain measurement error. This is needed since any single item is likely to be affected by factors other than being or not being innovative. Multiple indicators have two advantages: first, it enables the researcher to identify significant indicators of the quality of an innovation and, second, it is possible to construct a more informative composite measure of innovations conditional on its observed characteristics (cf. Dillon and Goldstein 1984). Such an index can be used also in other instances for example such as modeling economic growth encompassing successful innovations (Aghion and Howitt, 1997).

A composite measure of innovativeness is also an attempt to overcome some of the problems associated with single item measures. R&D data tend to underestimate the importance of innovative activity in small firms (Kleinknecht, 1987; Kleinknecht, 1991). Patent data is sometimes accused underestimating the importance of innovative activity in large firms and in services (OECD, 1992; Pavitt 1982). Product/service uniqueness tend to be overestimated among small firms but as a complement it is useful as an indicator of innovativeness in situations where it is possible to misunderstand the concept of innovation (cf. Cosh et al., 1998).

3.4. Measures: Explanatory Variables

Table 2 displays our exploratory variables; human and social capital. Unlike some predecessors, we use the venture rather than the respondent as the level of analysis, and we include both time variant and time invariant explanatory variables. For example: a person's education is assumed to be static (time invariant) but people's social network is assumed to change during the study (time variant). There are two exceptions. First, human capital in the form of a formal education is based on the respondent only. This is a due to a design omission and may lead to some measurement error for team-based ventures. Second, social reinforcement is based on the respondent own experience only because this can hardly be reliably assessed for other team members without actually interviewing them.

<INSERT TABLE 2 ABOUT HERE>

3.5. Measures: Control Variables

In the multivariate analysis testing hypotheses 2-6 we include the control variables for strategy, environment, and time elapsed since initiation of the venture. They are displayed in Table 3. As regards strategy we include measures of the degree of emphasis on a specialist, quality orientated strategy and on a generalist, price-competition strategy, respectively. Although theory-based hypotheses for these variables could be developed we concluded that weakness of our measures allows us only to include strategy as a control. Regarding the environment we include indicators of economic growth and industry competitiveness. We also include time in the process as a control. It is a time invariant construct controlling for variation in initial status at the time for the first interview.

<INSERT TABLE 3 ABOUT HERE>

Descriptive results and correlations are available in the Appendix, tables A1 and A2.

3.6. Analysis Method

Studying on-going venture processes is challenging because it calls for an analysis method that can make full use of longitudinal data. Moreover, the method also needs to handle the fact that cases will inevitably be unequally far into the process when first captured. Figure 1 illustrates the idea of individual growth trajectories. The figure shows the development over time for three venture opportunities. The growth trajectories represent three cases of progress in the nascent venturing process. The individual trajectories are different but all three decrease in development across time. This suggests a non-linear growth trajectory, which is the expected growth because there are not an endless number of gestation behaviors.

A technique that meets these requirements is Longitudinal Growth Modeling (LGM). This is a new latent variable technique, which has the advantage over both OLS regression and event-history models that it explicitly models both initial state and development over time. LGM allows time variant and time invariant variables, and separate models for different groups. The following description of LGM draws heavily on publications by Muthén and his collaborators (Muthén, 1991; Muthén, 2000; Muthén and Curran; 1997; Muthén and Khoo, 1998; Muthén and Muthén; 1998), where more elaborate descriptions can also be found.

<INSERT FIGURE 1 ABOUT HERE>

In Figure 2, squares represent observed variables and circles represent latent variables. LGM considers two main parts of individual development. First, the number of gestation activities is likely to differ at the time for the first interview due to experiences prior to the first interview. This part is important because it captures information about the process leading toward where we start following each venture across time.

<INSERT FIGURE 2 ABOUT HERE>

This will be referred to as individual variation in *initial status* (I_{gestb}). Second, ventures are likely to differ with respect to the pace with which they develop over time, which is here referred to as individual variation in *growth rate* (G_{gestb}). In our case the analogy to growth is accumulation of initiated and/or completed gestation activities.

Key results in the analysis are estimates of the average initial status, the average growth rate, and coefficient estimates—similar to regular regression coefficients—of the included variables' effects on initial status and of growth rate. The remaining unexplained variations are expressed as residuals. In practice initial status regression explain individual variation in progress in the nascent venturing process when we first find our cases and the second part of the model predicts individual variation in growth across time. The latter is a retrospective measure of progress in the entrepreneurial process and the former is a real time measure of progress in the entrepreneurial process. The distinction between the two regressions is not without importance since we are likely to experience individual variation in both initial status and progress as we follow venture ideas across time.

Growth curve analysis is particularly useful when an attempt is made to explain individual variation in initial status and growth rate using background variables for each individual. These variables are viewed as causes of growth preceding the measurement occasion and do not vary across time. Such variables are of substantial interest in that they are predictors of growth. More elaborate analysis also attempt to account for the fact that development in the exploitation process may be hampered or enhanced by time-specific background variables such as developments in a venture's instrumental social network structure.

The statistical development to be drawn upon in longitudinal growth modeling is termed random coefficient models. This technique goes beyond traditional equation modeling

of longitudinal data and its focus on auto-regressive models (cf. Maruyama 1998). It goes further in terms of including both a mean and a covariance structure. The growth model is multilevel in that an individual's observation over time is correlated. A second part of the model describes individual variation in growth parameters in terms of person-specific, time invariant covariates. Compared to a single regression that gives an intercept and a slope estimate of all individual units, this approach gives an intercept and slope estimate for each individual unit (Muthén and Khoo, 1998). In addition, this approach accounts for similarities among individuals by stipulating that all individuals' random effects come from a single, common population. In statistical terms, the growth model is specified as:

$$\gamma_{it} = \alpha_i + \beta_i + \zeta_{it} \tag{1}$$

Here α_i and β_i are individual specific parameters describing initial level (intercept) and rate of growth (slope) of the entrepreneurial opportunity recognition process and ζ_{it} represents time varying residuals. The regression intercept and slopes are random parameters that vary over individuals. No specification of linear growth is necessary; linearity can be estimated whenever there are data on a sufficient number of time points (see Muthén and Khoo, 1998 for a technical description).

It is convenient to view initial status and growth rate as latent variables. To understand this it is useful to consider the specification of this model into two parts. The first part includes terms contributing to the means of the observed variables and terms contributing to variances and covariances among these variables. First the mean structure, intercepts in the regression of the y's (gestation behavior) on the two latent variables (I_{gestb} and G_{gestb}) are parameters which should be held equal across time to reflect that these are measured at all time points (i.e. the same metric). The latent variable (α =initial status) is fixed at zero. The

growth in the observed variable means over time is captured by the latent variable (β) (Muthén and Khoo, 1998). Extending the model like this with time-invariant covariates (W_i =resources and strategy), the individual variation in these parameters is specified as:

$$\alpha_i = \alpha + \gamma_\alpha w_i + \delta_\alpha i \quad (2)$$

$$\beta_i = \beta + \gamma_\beta w_i + \delta_\beta i \quad (3)$$

When further expanding the model by adding a time-varying covariate (v_{it}) to the growth curve of equation (1), introducing time-specific deviations from the growth curve the following equation is used:

$$Y_{it} = \alpha_i + \beta_i t + \gamma v_{it} + \zeta_{it} \quad (4)$$

Assuming for simplicity that there is no time-varying covariate (v), the model can be seen to imply growth in means and variances as a function of time (t).

$$E(y_{it}|w_i) = \alpha + \gamma_\alpha w_i + \beta (\gamma_\beta w_i) t \quad (5)$$

$$V(y_{it}|w_i) = \sigma_\alpha^2 + 2t\sigma_{\alpha\beta} + t^2 \sigma_\beta^2 + \sigma_\zeta^2 \quad (6)$$

The growth model can be viewed as a structural equation model with latent variables (cf. Maryama 1998). The alpha and betas can be viewed as latent variables instead of random parameters. They are both unobserved variables varying across individuals. Another application is when (t) is not varying across individuals. In this situation, (t) in equation (4) can be considered as a fixed regression parameter (factor loading) for the variable β_i .

According to this, beta can be estimated when fixing the first two (t) values, thereby capturing also non-linear growth (Muthén and Khoo, 1998).

To test our hypotheses the following series of analysis steps was performed (cf. Muthén and Khoo, 1998). In the first analysis, full invariance across the two venture types of the growth model parameters was imposed. This creates a baseline model saying that there are no differences between innovative and imitative ventures. This model was then tested against subsequent models that allow different parts of the model to be different. This means that the model estimates each parameter and allows differences in all parts of the model. A Chi-square difference test is used in order to establish significant model improvements. Such an overall test forms part of our evaluation of Hypothesis 1.

If a model with group variation is found to fit the data significantly better than the model without group variation the following steps are used to identify more exactly where the differences reside. First, variation is allowed in the marginal part of the model consisting of the covariates because the growth model does not concern itself with this part. Second, we allow variation in the growth model's residual variance for initial status and growth rate. Third, we allow variation in the growth model's conditional means given the covariates, namely the growth rate intercept and the initial status intercept (Muthén and Khoo, 1998). Following this modeling strategy, it is possible to investigate how the venture creation process is different for innovative emerging ventures compared to their imitative counterparts.

All our hypotheses with index a or b concern the existence of an effect in the predicted direction. For these hypotheses conventional significance tests apply, i.e., the criterion is the probability that an effect of the estimated magnitude would occur in a sample from a population where the true effect is zero. The reader should be cautioned that the group sizes are different, which means that relatively larger effects are required for innovative ventures to

reach statistical significance at conventional levels. Our hypotheses with index *c* and *d* concern the relative strength of effects for different sub-groups. Our hypotheses with index *c* and *d* concern the relative strength of effects for different sub-groups. The significance of the difference is calculated as described by (Cohen & Cohen, 1983:111). That is, the standard error for *d* (the difference between the estimated magnitudes of the two coefficients) is computed as the square root of $[SE(E_1)^2 + SE(E_2)^2]$ (that is, the square root of the sum of the squares of the separate standard errors). The 95% confidence interval for the difference is $d - 1.96SE(d)$ to $d + 1.96SE(d)$. If this interval does not cover the value zero the two estimates are deemed significantly different from one another. It should be noted that this is a formula for large samples and independent coefficients. We assume it is approximately correct for our purposes and hence a useful heuristic device.

4. RESULTS

As a first, rudimentary test of Hypothesis 1—that the venture creation process is different for innovative ventures compared to imitative ones—we compared the number of gestation behaviors that were completed at the time of each interview. The results, which are displayed in Table 4, show in support of our hypothesis that at each period in time more gestation behaviors had been completed on average for the innovative ventures. For the 6, 12, and 18 month follow-up points the difference is significant.

<INSERT TABLES 4 AND 5 ABOUT HERE>

As a more comprehensive test of overall process differences we performed first an explanatory LGM model without consideration of venture type variation; i.e., including all cases. The Chi-square value of 1184.51 with 101 degrees of freedom indicates poor fit. By

contrast, fit statistics in Table 5 show that the separate models for innovative and imitative ventures both fit data reasonably well. A chi-square test can be used to formally investigate whether the two group model fits the data significantly better than the one-group baseline model. The chi-square difference ($1184.51 - 55.17 = 1129.34$) with $101 - 60 = 41$ degrees of freedom is statistically significant at $p < 0.001$, which clearly shows that the two-group model is superior to the baseline model. This is strong support for Hypothesis 1, and we can safely conclude that the venture creation process for ventures based on innovative ideas is different from the corresponding process for imitative ideas.

Table 6 displays the resulting two-group model, which reveals the details of these differences and thus our bases for evaluating hypotheses 2 through 6.

<INSERT TABLE 6 ABOUT HERE>

Table 6 includes initial status mean value, which, indicates that we capture innovative venture ideas (an initial status mean of 3.24) earlier in the nascent venturing process compared to imitative venture ideas (an initial status mean of 5.74). The calculated growth rate shows that innovative venture ideas grow faster with a growth rate mean of 4.88 compared to a growth rate mean of 4.27 for imitative venture ideas.

<INSERT TABLE 7 ABOUT HERE>

Table 7 report how each of the proposed covariates predicts progress in the venturing process. Results are reported in two sequences, the top of the model concern initial status. This is important because it capture individual progress at the time for our first interview. The second part of the model concerns how much each initiative grow during our study. The first

section concerns results regarding how human and social capital together with control variables influence initial status and the second part of the model concerns growth (i.e., accumulation of gestation activities) in the nascent venturing process. As previously stated, this second analysis includes instrumental social capital; i.e., the network resources that the venture team builds up over the process, as a time invariant explanatory variable.

Hypotheses 2a-b suggested that formal education, as indicative of general human capital, should have a positive effect on making progress for both types of ventures. This is supported only in the growth regression for innovative ventures. That is, we find partial support for H2a but no support for H2b. In fact, the estimated effect of formal education is significantly negative for imitative ventures in the growth regression. This probably reflects the existence of attractive outside alternatives for individuals with higher education (Gimeno et al., 1997). Although the negative effect for imitative ventures was unexpected we find H2c to be supported: the level of formal education is relatively more important for making progress with innovative venture ideas⁵. This refers to the growth regression. It is not possible to derive support for H2c from the coefficients predicting initial status. Hence, the support for H2c is partial.

Hypotheses 3a-b state that previous venture creation experience should facilitate making progress with both types of venture. As regards initial status, reflecting moving rapidly in the earliest stages of the process, this notion is supported for innovative but not for imitative ventures. Neither group has a significant positive estimate in the growth regression. Thus, H3a is partially supported while no support is found for H3b. The regression for initial status also supports Hypothesis 3c. Previous venture creation experience appears relatively more important for innovative ventures. Hence, H3c is partially supported.

⁵ Formally this is shown by the confidence interval for the difference in coefficient magnitude being $2.65 \pm (1.96 \times 0.87)$, i.e., not including the value zero.

Hypotheses 4a-c concern effects of industry experience. The results reveal that effects significantly different from zero are estimated neither for venture type nor stage of the process. None of H4a, H4b and H4c gains any clear support in our data. Industry experience possibly has positive effects in some cases and negative effects of myopia in others, causing the overall effect to be insignificant for both types of venture.

Hypothesis 5 concerned social capital in the form of reinforcement from the environment. For innovative ventures its effect is positive as expected in both stages of the process, although statistically significant only in the estimation of initial state. Overall, H5a is supported. The coefficient is likewise positive in both analyses for imitative ventures, but statistically significant in neither. While this result should not be interpreted as evidence against the hypothesis the estimated effects are too weak and uncertain to be interpreted as supporting it. Hence, H5b is not supported. Although these differential results indicate support for Hypothesis 5c, formal tests show that in both regressions the difference is in the expected direction but not statistically significant. This presents us with a dilemma concerning how to evaluate Hypothesis 5c. All things considered we could that suggest H5c is weakly supported, but refrain to do so, not to violate statistical practice.

Instrumental social capital is included as a time variant variable and can therefore for technical reasons only be included in the growth regression. The effect on initial status is, however, captured in the first estimate. Hypothesis 5a states that instrumental social capital has a positive effect on making progress in the innovative venturing process. The results show positive estimates for level of instrumental social capital in the 6, 12 and 18 month follow-ups, and in the latter two cases the effects reach statistical significance. We deem this to be sufficient for declaring hypothesis 6a supported. The support for hypothesis 6b is even stronger, as the estimate is significant and positive in all waves. For both types of venture the level of instrumental social capital has an important facilitating effect.

Hypothesis 6c suggests that this effect should be stronger for innovative ventures. The ‘more significant’ result for imitative ventures is not evidence against this notion as the reason may well be the larger sample size in that category. An examination of the estimates demonstrates that the estimated effect is indeed stronger for innovative ventures at the later stages of the process. However, in neither case is the magnitude of the difference anywhere near reaching statistical significance. In total, H5c is not supported. The effect of instrumental social capital does not appear to be different by venture type but instead positive in both cases.

For both types of venture instrumental social capital appears to become increasingly important over time, i.e., the coefficient estimates increase monotonically. This is what hypothesis 6d suggests. Thus, Hypothesis 6d is supported⁶. The positive effect of instrumental social capital on progress in the venture creation process increases in magnitude from earlier to later stages in the process.

Before closing the results section we should note that the only significant effects (at the 5% risk level) ascribed to our control variables is a positive effect of specialist strategy for innovative ventures in the initial state analysis, which turns into a significant negative effect of the same variable in the growth regression. While this is an intriguing pattern of relationships we refrain from elaborate interpretations of it due to the absence of strong theory and operationalizations.

Industry competitiveness and time in process are ascribed marginally significant positive effects in the initial state regression for imitative ventures. It is somewhat surprising that the time variable does not generally appear with a significant positive effect. This reflects that different venture founders move forward at different pace. It is noteworthy that the effect

⁶ While the significance test as performed is not strictly valid because of statistical dependence between the estimates it should be noted that disregarding any requirements for magnitude of the difference the joint probability of a random number generator generating four monotonically increasing numbers in each of two separate series is $(1 \times 0.5 \times 0.5 \times 0.5) \times (1 \times 0.5 \times 0.5 \times 0.5) = 0.016 (< 0.05)$, so the result is statistically significant based also on such a simple run test.

for imitative ventures is negative and marginally significant in the growth regression. The pattern for imitative ventures indicates that a subgroup of founders in that category have been working on the start-up for quite some time when first captured, and that therefore they have completed an above average number of activities, but also that they are then moving forward very reluctantly without making a decision to completely abandon the effort. The occurrence of such eternal start-ups is a method problem to consider in this type of research (cf. Carter et al., 1996; Anonymous, 2006b; Delmar & Shane, 2004).

Importantly, as shown in the lower part of Table 7, the R-squares are much higher for innovative ventures (.87 initial status and .49 for growth) than for imitative ventures (.06 initial status and .12 for growth). This is additional evidence that the venture creation process is different for innovative compared to imitative ventures. While we expected the effects to be stronger for innovative ventures in most cases, we did not expect the explanatory model to perform so relatively poorly overall for imitative ventures. The comparatively poor fit for imitative ventures is further emphasized by the residual analysis in Table A2 (appendix) and is something we will have reason to return to in the Discussion section.

5. DISCUSSION

5.1. Interpretation and Discussion of the Results

Table 8 summarizes our results. Our findings concerning effects by type of venture and stage of process are relatively unique to this study and therefore arguably the most interesting and important.

<INSERT TABLE 8 ABOUT HERE>

Our results clearly support our over-arching hypothesis that the venture creation process is different by venture type (in terms of innovative vs. imitative). Innovative ventures are more associated with creative change; equilibrium-breaking and genuine uncertainty. They are therefore likely to be more complex and in need of more efforts to legitimize the emerging venture. This is a likely reason why more gestation behaviors are undertaken per time unit for such ventures. Similarly to our finding and using data from a US counterpart study, Liao & Welsch (2003) found that technology-based nascent entrepreneurs had undertaken more gestation behaviors than non-technology-based nascent entrepreneurs.

However, different numbers of activities undertaken is only one way in which the processes differ. Our results also clearly show that separate explanatory models for innovative and imitative ventures fit the data much better than does a uniform explanatory model. Further, and unexpectedly, process difference also shows in the two-group model in the form of much better explanatory power (and smaller residuals) for innovative ventures. In spite of the fact that the model includes many explanatory and control variables, the explanatory power for imitative ventures is low—almost embarrassingly low as regards initial status. This perhaps the most important aspect of our result. In terms of theory the suggestion is that the type of explanatory variables suggested by established theories originating from economics, sociology and management may be well suited for explaining the creation of innovative ventures, but that considerable theoretical development is needed in order to reach a similar level of understanding of what drives the imitative venture creation process, which empirically represents the large majority of cases.

In terms of method an implication is that narrow sampling and pre- or post-stratification are strategies that need to be employed for building valid, cumulative knowledge about venture creation processes. It may well be that the low explanatory power for imitative ventures is in part the result of this sub-sample still being too heterogeneous. Although this is

a possibility to seriously consider, the Latent Class analysis suggested a two-group split of the sample was optimal.

Regarding stage in process Davidsson & Honig (2003) previously reported exploratory results suggesting that social capital becomes increasingly important as the process progressed. Our analysis, which is better anchored in theory and builds on a much more comprehensive, time variant measure of instrumental social capital, gives clear support for this notion. Further, this holds up for both types of venture. We take it as a main finding of our study that the building up of instrumental social capital during the venture creation process is an important determinant of making continued progress in that process. This result also gives empirical support to the not yet empirically validated theory of effectuation. Looking at effectuation in a nutshell it obvious that, who you know, is of great importance for progress in the nascent venturing process (Sarasvathy, 2001)

We now turn to the details of the differences in the explanatory models for innovative and imitative ventures. We find relatively strong albeit partial support that general human capital as indicated by education level is relatively more important for making progress with innovative venture ideas. Typically the acquisition of knowledge in the form of a formal education is both costly and risky. However, according to Hayek (1945), because entrepreneurs can only use it to assess one venture idea, its acquisition can become a sunk cost. In addition, according to Fiet (1996), “both the expected returns and risks from investing in specific information are dependent upon the quantity and specificity of the information that is acquired” (p. 426), which calls for entrepreneurs to make trade-offs. Theoretically, there should be an optimal combination of the quantity and specificity of information upon which knowledge-based competencies depend (Fiet, Piskounov & Patel, 2005). Having a higher education could be essential in two ways. First, investment in education is costly and therefore it is more valuable in an innovative venture compared to a

imitative venture due to potentially higher pay offs (Schumpeter, 1934). Second, another way to interpret higher education would be as a complementary investment in new knowledge, which might be helpful in marshalling, needed resources for start-up especially in an innovative venture where no blueprint exists and scientific knowledge is often the basis for the ventures competitive advantage (Teece, 1998; Teece, Pisano & Shuen, 1997).

We also get partial support that specific human capital as represented by previous venture creation experience is relatively more important for innovative ventures. The tendency is in the same direction, albeit more uncertain, for social reinforcement. We interpret these results as reflecting the greater liabilities of newness and associated legitimacy issues that innovative ventures are associated with because of the novelty they try to introduce (Aldrich & Auster, 1986; DiMaggio & Powell, 1983; Stinchcombe, 1965; Suchman, 1995). Greater complexity of the task may also contribute to a greater importance for these forms of human and social capital.

In the extant literature previous start-up experience is often portrayed as a very general facilitator or entrepreneurial processes (e.g., Anonymous, 2006b). It is therefore noteworthy that while we find strong support for such an effect in the early stage for innovative ventures we do not find any significant effects in the other regressions. This may indicate that the positive effect of this aspect of specific human capital is less general than previously thought. Somewhat similarly, Van Gelderen, Thurik, & Bosma (2005) found a positive effect of previous venture creation experience only for individuals scoring low on other types of experience (work; management, and industry), suggesting the requisite human capital can be acquired along different routes. As to the temporal aspect of our results concerning previous venture creation experience, a possibility is that such experience in itself is not of much value in later stages of the process unless sufficient instrumental social capital is also accumulated. The restricted positive effects of previous start-up experience can also be interpreted as

additional support for our basic notion that the venture creation process is different for different types of ventures. Consequently, experience gained from one venture creation process is not perfectly transferable to the next.

Disregarding differences by venture type our study corroborates results from previous process-orientated studies (Davidsson & Honig, 2003; Delmar & Shane, 2004; Diuchon, Menzies, & Gasse, 2003; Rotefoss & Kolvereid, 2005; Van Gelderen, Bosma, & Thurik, 2001) both as regards finding positive effects for aspects of human and social capital and as regards these effects not being impressive in consistency and strength on all accounts. To some extent this is likely due to the fact that like any capital, human and social capital should be expected to have effects only to the extent they are invested in the venture in question. Those with more human and social capital are likely to also have more attractive outside options (Gimeno et al, 1997). This suggests that assessment of human and social capital should be accompanied with measures of to what extent these forms of capital are committed to the specific venture under consideration.

A noteworthy non-result in our study is that specific human capital in the form of industry experience is not ascribed a positive effect in any of our regressions. This is in spite of the fact that we test the effect separately by venture type and that unlike most other studies our measure considers industry experience among all members of the venture creation team. Given a history of weak and/or conflicting results for industry experience in previous entrepreneurship research (e.g., Davidsson, 1989; Smith, 1967) it is probably safe to conclude that deep experience from a particular industry can be both an asset and a liability in a new venturing context.

The impact of instrumental social capital is by far one of the stronger results in this study. It supports earlier work in the area and adds a comprehensive test mechanism, which enables us to measure how a net of social capital evolves across time. Although, without

process differences our results follow in the footsteps of Sarasvathy (2001) giving impetus to the importance of who you are and who you know and the relation social capital has to what you actually succeed doing in the nascent venturing process. Albeit, not discussed in the theory section, perhaps one of our strongest results is how knowledge in the form of social and human capital varies across venture type and progress in the nascent venturing process.

5.2. Strengths and Limitations of Our Study.

We believe our study has several significant strengths. The study has proven it possible to sample and collect longitudinal data on a sizeable and theoretically relevant sample of ongoing venture creation processes. This substantially reduces the risk of survivor and hindsight biases. Further, we have largely avoided the fallacy—common in entrepreneurship research (cf. Anonymous, 2006a—of equating the informant with the venture, leading to better assessment of the total human and social capital at the venture's disposal through the informant as well as other members of the start-up team, where applicable. We could empirically verify our two, theoretically derived types of emerging ventures. We have also applied an analysis method that suits the longitudinal nature of the data as well as the problem of cases being captured initially at different stages of development, and which is specifically designed for handling sub-group analysis as well as a dependent variable of the type we have used.

Our study also has its limitations. As regards the sample, the unequal sample sizes and the relatively small sample of innovative ventures are weaknesses because it makes it harder to establish group differences with satisfactory levels of statistical certainty. As imitative ventures outnumber innovative ones in almost any empirical population (Aldrich, 1999) and as obtaining a random sample of any emerging ventures is complex and costly already,

convenience and judgment sampling methods may be the only realistic ways to ever obtain a sizeable sample of highly innovative ventures.

A decision that could be called in question is our inclusion of not only fully independent ventures but also (a minority consisting of) those initiated by the respondents' current employers. It may be argued that the latter type of ventures can draw upon a much larger (and largely unmeasured) resource base. The decision to include them was driven in part by practical considerations for the need to have sample of sufficient size for any significant effects to emerge in the analysis but can be defended also on the ground that the study of entrepreneurship should not be restricted to any particular organizational context (Shane & Eckhardt, 2003; Zahra & Dess, 2001). Independent as well as corporate venturing attempts can revitalize the economy and lead to the creation of new organizations, making both categories practically and theoretically relevant for the same reasons. It should also be noted that employer-backed ventures are in clear minority in our sample and thus do not dominate the results, and that far from all of them represent high-powered efforts at setting up new units within large corporations. Many of them fall in a grey area, having a looser connection to an existing firm-sponsor and where the respondent expects to become a part-owner of the venture.

We also choose to include in the analysis only those cases that were not reported abandoned prior to the 18 month follow-up interview. This is dictated by the analysis method, which requires complete data, and does in a sense increase the risk of survivor bias. However, this choice also mitigates the problem that high levels of human and social capital increases the attractiveness of alternatives other than continuing the venture creation process. It is conceivable for that reason that the human and social capital variables for which we have found positive effects are also associated with an increased probability of abandoning the effort. Interpreting such a result as human and social capital having a negative effect *for those*

individuals who in consideration of all available alternatives want to complete the venture creation process would, however, be erroneous. On balance, we see exclusion of abandoned cases as the theoretically sounder alternative.

As regards measures one could always wish in arrears for better operationalizations of the key variables. It would have been advantageous to have access to additional indicators of the different forms of human and social capital. As regards level of education it was a clear omission to assess this only for the informant and not for other team members. As regards social reinforcement it would be desirable to have such information also on other team members, but this would likely require using multiple respondents. Otherwise we do not consider common method bias from using a single respondent to be a major limitation (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). In about 50 percent of the cases there exists no other relevant informant and in the case of team efforts it is reasonable to assume for these small, emerging entities that one respondent can correctly report the largely factual information that we use for our explanatory and dependent measures.

Because of the factual nature of the information we do not consider the fact that some measures were used here for the first time as particularly problematic, either. For example, our measure of instrumental social capital is novel but hardly problematic as it merely aggregates factual information collected from the informants about issues that are likely to be well known to them. By contrast, the strategic orientation of the venture is harder to measure accurately, and hence our single-respondent, single-item indicators were included as control variables only. Similarly, our measures of economic growth and industry competitiveness are too weak to be included other than as control variables.

As regards modeling and results the unsatisfactory explanatory power for imitative ventures may suggest that additional (control) variables should have been included. Readers may be particularly suspicious that the non-inclusion of indicators of the financial capital at

the firm's disposal might blur the results. We are not convinced inclusion of this aspect would make a big difference. While exceptions are likely for particular sub-categories of ventures, a very consistent result from related research on emerging ventures is that financial capital does not have the discriminating role it is often assumed to have (Anonymous, 2006b). Neither do we believe any other easily conceivable variable would dramatically increase explanatory power for making progress in the venture creation process for innovative ventures. Our weak results for imitative ventures are no doubt a disappointment, but we also consider it an important result suggesting major theoretical and methodological rethinking should precede continued efforts to come up with a strong model for explaining their early development.

6. CONCLUSION

We believe three substantive insights emerge from this study. First, in line with Shane and Venkataraman's (2000) call for research that takes into consideration variation not only in the characteristics of venture founders but equally considers heterogeneity in the venture ideas (or 'opportunities' in their vocabulary), our research shows that the creation processes are different for innovative and imitative ventures, respectively. This has implications for theory, method and practice. Our results suggest current theory may be particularly under developed as regards explaining progress for the majority of ventures that pursues imitative venture ideas. As regards method the results suggest heterogeneity in the venture idea should be assessed and considered in the analysis. Concerning practice, one implication of our overall results, which is further underlined by results specifically concerning the effects of venture creation experience, is that experience gained from one venture is not necessarily transferable to the next one.

Second, our results suggest that building up instrumental social capital is of major importance for the successful continued pursuit of innovative as well as imitative ventures. This is support for social capital theory, and the implications for practitioners are clear. Entrepreneurship is a social game much more than an individual one, and success is typically achieved with and through other people. Third, in line with ideas from evolutionary and institutional theories, and supporting aspects of human and social capital theories, certain manifestations of general and specific human capital as well as social reinforcement were shown to be more important for innovative than for imitative venture creation, arguably reflecting that innovative ventures have more challenging legitimacy issues to overcome.

We also believe that three method lessons can be derived from our research. First, for those who are willing to invest the required time, energy and money it is possible to study large and relevant samples of on-going venture creation processes. Second, we took steps towards a clear separation of the individual and the venture, regarding the latter as our unit of analysis and the former as its informant. The confusion of the entrepreneur with entrepreneurship has long stifled knowledge development in this area (Anonymous, 2006a; Gartner, 1988; Shapero & Sokol, 1982). Clearly separating the two is logically sound and—perhaps with further refinement—worth following in future studies. Third, we have demonstrated that a suitable analysis exists for the type of research problem dealt with here. Longitudinal Growth Modeling can handle sub-group analyses and inclusion of a large number of variables; explicitly models variance in initial state, and is ideal for using accumulation of completed gestation behaviors as the dependent variable. Researchers who want to undertake similar studies in the future should seriously consider adopting this technique.

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TABLE 1

Gestation Behaviors Capturing Progress in the Nascent Venture Creation Process

<i>Gestation activities</i>		
1. Product/service idea or concept	11. Received funding successfully	21. Registered at PRV ⁷
2. Product/services initial development	12. Unsuccessful search for funding completed	22. Received tax licenses ⁸
3. Collected information of competition/ opportunity	13. Purchased raw materials supplies, inventories etc.	23. Application for patent copyright, trademark in process
4. Saving money to invest	14. Started investing own money	24. Application for patent, copyright, trademark granted
5. Team in process	15. Established credit with a supplier	25. Product/services tested on customers
6. Team complete	16. Purchased major item	26. Business received income
7. Business plan in process	17. Marketing or promotion started	27. Product/services ready for sale
8. Business plan completed	18. Own phone line	28. Devoted full time to the business
9. Projected financial statement	19. Permits and licenses in process	29. First hire
10. Application for funding	20. Permits and licenses granted	30. Revenues exceeded expenses

TABLE 2

Explanatory Variables for Predicting Progress in the Venturing Process

<i>Explanatory variable</i>	<i>Operationalization</i>
<i>Human capital</i>	
<i>Venture creation experience</i>	Count of prior start-ups across all team members. This measure is time invariant and measured at the time for the first interview.
<i>Industry experience</i>	Count of years of experience in the venture’s industry across the team members. This measure is time invariant and measured at the first interview.
<i>Formal education</i>	Respondents were asked to indicate their own highest level of completed education. This variable was coded from 1 for primary school to 9 for the doctorate.
<i>Social Capital</i>	
<i>Social reinforcement</i>	We asked the respondent “How would you describe the encouragement you received from family, relatives or other close friends? Would you consider it very weak, weak, neither weak nor strong, strong, nor very strong?” The answers are given on a five-item scale where “1” equals very weak, and “5” equals very strong. This measure is time-invariant and measured at the time for the first interview.
<i>Instrumental social capital</i>	Instrumental social capital is measured through a summation of all personal network resources related to the following resources, introduction to other people, information or advice, access to financial resources, physical resources and other kinds of service. During each interview, we asked the respondent about the frequency and content of other actors’ interaction with the venture creation process. Each team member, and any additional person, identified as a resource contributor reported number of contacts and the content of that contact. By adding the number of contacts across individuals and time we obtain a construct of instrumental social capital. This measure is time variant, because in each interview the respondent is asked about any additional contacts during the creation process. Network contacts are then summed across the entire team in each interview. For example, one respondent report one person supplying resources in the area of access to financial resources and one person in physical resources in the first interview. In the second and third the respondent again reports additional persons bringing resources into the venturing process. Together it will sum up to an accumulation of team members and the resources they bring to the new venture. This measure, as stated above, will change across time, in most cases it will grow since more resources is needed across time.

⁷ PRV (Patent och Registreringsverket) is the Swedish authority that enforces registration of all new firms regardless of mode of organization.

⁸ In Sweden firms may apply for a tax license. This license ensures that they paid their taxes in advance and are following Swedish tax and VAT regulations.

Table 3**Control Variables**

<i>Independent variable</i>	<i>Operationalization</i>
<i>Strategy</i>	
<i>Specialist strategy</i>	We asked the respondent “Please indicate how important quality products and services are for the new firm to be an effective competitor? The answer is given on a four-item scale where “1” equals “insignificant”, “2” equals “marginal”, “3” equals “important”, and “4” equals “critical”. Time invariant and measured at the time for the first interview.
<i>Generalist strategy</i>	We asked the respondent “Please indicate how important lower prices are for the new firm to be an effective competitor? The answer is given on a four-item scale where “1” equals “insignificant”, “2” equals “marginal”, “3” equals “important”, and “4” equals “critical”. Time invariant and measured at the time for the first interview.
<i>Environment</i>	
<i>Economic growth</i>	We asked the respondent “Would you describe the local economy as getting stronger, stable, or getting weaker? (“1” equals “getting weaker” “2” equals “stable” and “3” equals “getting stronger”).” Time invariant and measured at the time for the first interview.
<i>Industry competitiveness</i>	We asked the respondent “Do you expect the competition to be low, moderate or strong for this new business? (“1” equals “expect no competition”, “2” equals “expect low competition”, “3” equals “moderate competition” and “4” equals “expect strong competition”).” Time invariant and measured at the time for the first interview.
<i>Other</i>	
<i>Time in the process</i>	Time is a time invariant measure because the differences among cases remain the same. It is measured as the number of months from the date of the first reported initial gestation behavior to the starting date for the first interview.

TABLE 4**Accumulation of Gestation Behaviors Over Time**

	<i>Latent class venture type</i>	<i>N</i>	<i>Mean</i>	<i>Std. Deviation</i>	<i>Sig. (2- tailed)</i>
Gest beh00 accumulated	Innovative	40	9.13	3.18	0.57
	Imitative	219	8.81	3.17	
Gest beh06 accumulated	Innovative	40	14.85	4.62	0.03
	Imitative	219	13.34	3.87	
Gestat beh12 accumulated	Innovative	40	19.28	6.13	0.08
	Imitative	219	17.74	4.96	
Gest beh 18 accumulated	Innovative	40	22.80	7.57	0.04
	Imitative	219	20.54	6.05	

TABLE 5

Fit Statistics From Separate Models of the Venture Creation Process

<i>Statistics</i>	<i>Innovative venture opportunity</i>	<i>Imitative venture opportunity</i>	<i>Two group model base- line model</i>	<i>Final model Variation on all parameters</i>
<i>n</i>	40	219	259	259
<i>chi-sq</i>	29.37	25.80	55.17	55.17
<i>df</i>	30	30	60	60
<i>p-value</i>	0.50	0.69	0.65	0.65
<i>RMSEA Estimate</i>	0.00	0.00	0.00	0.00
<i>90 Percent C.I.</i>	0.00	0.12	0.00	0.41
<i>Probability RMSEA <= .05</i>	0.65	0.98	0.00	0.05

TABLE 6

Longitudinal Growth Model Results Initial Status Mean Variation

	<i>Innovative venture ideas</i>				<i>Imitative venture ideas</i>			
	<i>Est.</i>	<i>S.E.</i>	<i>T- value</i>	<i>Std. YX</i>	<i>Est.</i>	<i>S.E.</i>	<i>T- value</i>	<i>Std. YX</i>
<i>y intercept</i>								
<i>Initial status mean</i>	3.24				5.74			
<i>Growth scores/steps</i>								
<i>Gest.Beh00</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Gest.Beh06/00-06</i>	1.00/1	0.00	0.00	0.56	1.00/1	0.00	0.00	0.40
<i>Gest.Beh12/06-12</i>	1.65/0.65	0.1	17.49	0.69	1.92/0.92	0.08	25.42	0.60
<i>Gest.Beh18/12-18</i>	2.20/0.55	0.16	14.16	0.76	2.50/0.58	0.12	20.92	0.65
<i>Growth rate mean</i>	4.88				4.27			

TABLE 7

Longitudinal Growth Model Results Variation Initial Status and Growth

	Innovative ventures		Imitative ventures	
Initial status regression	Est.	S.E	Est.	S.E.
<i>Formal education</i>	-0.36	0.76	-0.48	0.32
<i>Venture creation experience</i>	2.54***	0.73	0.16	0.71
<i>Industry experience</i>	0.24	0.27	0.05	0.36
<i>Social reinforcement</i>	1.37**	0.68	0.35	0.92
Controls initial status				
<i>Specialist strategy</i>	0.88**	0.40	-0.14	0.33
<i>Generalist strategy</i>	0.44	0.46	0.09	0.64
<i>Economic growth</i>	-0.37	0.47	0.21	0.88
<i>Industry comp.</i>	-0.63	0.45	0.49*	1.06
<i>Time in expl. Process</i>	0.01	0.01	0.01*	0.01
Growth rate regression				
<i>Formal education</i>	1.85***	0.78	-0.80	-0.27
<i>Venture creation experience</i>	-0.06	0.75	0.13	0.48
<i>Industry experience</i>	-0.28	0.27	0.13	0.33
<i>Social reinforcement</i>	0.60	0.70	0.25	0.60
Controls growth rate				
<i>Specialist strategy</i>	-0.92***	0.41	0.03	0.32
<i>Generalist strategy</i>	0.69	0.47	0.03	0.38
<i>Economic growth</i>	-0.22	0.49	0.09	0.52
<i>Industry comp.</i>	-0.66	0.47	0.07	0.44
<i>Time in expl. Process</i>	0.00	0.01	0.00*	0.00
Time varying measures				
<i>Inst soc. cap00</i>	-0.06	0.09	0.09**	0.17
<i>Inst soc. cap06</i>	0.14	0.10	0.14***	0.22
<i>Inst soc. cap12</i>	0.29**	0.14	0.21***	0.29
<i>Inst soc. cap18</i>	0.40***	0.17	0.26***	0.36
Latent variable R-square				
<i>Growth rate</i>	.49		.06	
<i>initial status</i>	.87		.12	

Note: ***, **, and * indicates significance levels at the 1, 5, and 10 percent level respectively

TABLE 8**Summary of Results**

<i>Hypothesis</i>	<i>Result</i>
H1: Innovative and imitative venture processes are different	SUPPORTED
H2a: Education positive for innovative venture processes	PARTIALLY SUPPORTED
H2b: Education positive for imitative venture processes	NOT SUPPORTED
H2c: Education more important for innovative ventures	PARTIALLY SUPPORTED
H3a Previous start-up experience positive for innovative venture processes	PARTIALLY SUPPORTED
H3b Previous start-up experience positive for imitative venture processes	NOT SUPPORTED
H3c: Previous start-up experience more important form innovative ventures	PARTIALLY SUPPORTED
H4a Industry experience positive for innovative venture processes	NOT SUPPORTED
H4b Industry experience positive for imitative venture processes	NOT SUPPORTED
H4c: Industry experience more important for imitative ventures	NOT SUPPORTED
H5a Social reinforcement positive for innovative venture processes	SUPPORTED
H5b Social reinforcement positive for innovative venture processes	NOT SUPPORTED
H5c: Social reinforcement more important form innovative ventures	NOT SUPPORTED
H6a Instrumental social capital positive for innovative venture processes	SUPPORTED
H6b Instrumental social capital positive for imitative venture processes	SUPPORTED
H6c: Instrumental social capital more important for innovative ventures	NOT SUPPORTED
H6d: Instrumental social capital increasingly important over time	SUPPORTED

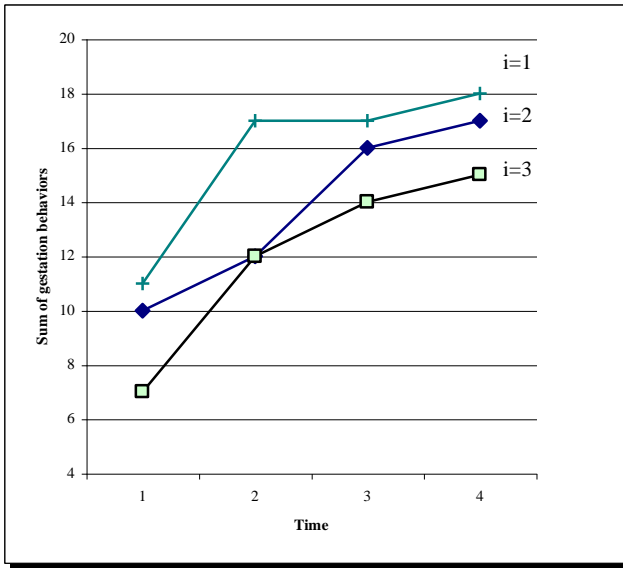


Figure 1 Growth modeling in terms of random coefficients and a multilevel model

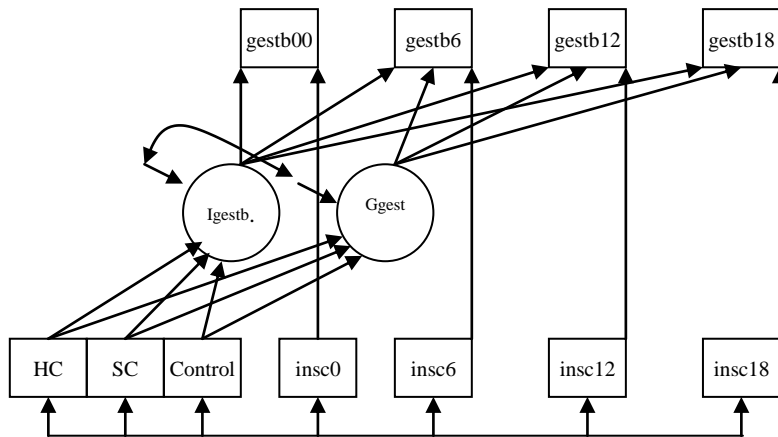


Figure 2 Graphical representation of a growth model for four time points (Adapted from Muthén 1998)

APPENDIX

TABLE A1

Mean, Standard Deviations and Correlations; Innovative Ventures (n=40).

<i>Variables</i>	<i>Mean</i>	<i>St Dev.</i>	<i>1.</i>	<i>2.</i>	<i>3.</i>	<i>4.</i>	<i>5.</i>	<i>6.</i>	<i>7.</i>	<i>8.</i>	<i>9.</i>	<i>10.</i>	<i>11.</i>	<i>12.</i>	<i>13.</i>	<i>14.</i>	<i>15.</i>	<i>16.</i>	<i>17.</i>
<i>Gestat beh 00</i>	9.13	3.18	1.00																
<i>Gestat beh 06</i>	14.85	4.62	0.66	1.00															
<i>Gestat beh 12</i>	19.28	6.13	0.56	0.93	1.00														
<i>Gestat beh 18</i>	22.80	7.57	0.53	0.88	0.97	1.00													
<i>Industry exp</i>	2.28	1.43	0.19	0.08	0.01	0.00	1.00												
<i>Start-up exp</i>	0.51	0.62	0.51	0.46	0.41	0.35	0.22	1.00											
<i>Formal educ</i>	1.65	0.51	-0.07	0.05	0.14	0.19	0.08	0.04	1.00										
<i>Social reinforc</i>	4.52	0.58	0.12	0.18	0.20	0.20	-0.01	-0.18	0.05	1.00									
<i>Inst soc cap 00</i>	4.03	5.52	0.24	0.26	0.26	0.24	0.33	0.49	0.03	0.10	1.00								
<i>Inst soc cap 06</i>	4.70	5.88	0.29	0.33	0.31	0.29	0.34	0.53	0.02	0.08	0.97	1.00							
<i>Inst soc cap 12</i>	5.55	6.18	0.23	0.27	0.26	0.25	0.31	0.49	0.10	0.13	0.90	0.95	1.00						
<i>Inst soc cap 18</i>	5.60	6.26	0.24	0.26	0.25	0.24	0.32	0.49	0.11	0.12	0.91	0.95	1.00	1.00					
<i>Generalist strat</i>	2.40	0.90	0.04	0.01	0.00	0.00	-0.03	0.00	-0.22	-0.24	-0.23	-0.21	-0.24	-0.24	1.00				
<i>Specialist strat</i>	2.55	1.08	0.29	-0.06	-0.09	-0.11	0.18	0.15	0.04	-0.12	0.37	0.41	0.36	0.37	-0.02	1.00			
<i>Eco growth</i>	2.30	0.80	-0.10	-0.13	-0.14	-0.23	-0.02	-0.11	-0.08	-0.11	-0.09	-0.11	-0.13	-0.14	0.08	0.31	1.00		
<i>Industry comp</i>	2.30	0.97	-0.20	-0.36	-0.27	-0.22	0.15	-0.16	0.23	-0.14	0.17	0.19	0.25	0.26	0.09	0.28	0.02	1.00	
<i>Time in proc</i>	64.95	59.08	0.10	0.01	0.00	-0.01	-0.02	0.01	-0.08	-0.23	-0.19	-0.18	-0.16	-0.16	-0.16	0.03	0.14	-0.14	1.00

TABLE A2

Mean, Standard Deviations and Correlations; Imitative Ventures (n=219).

<i>Variables</i>	<i>Mean</i>	<i>St Dev.</i>	<i>1.</i>	<i>2.</i>	<i>3.</i>	<i>4.</i>	<i>5.</i>	<i>6.</i>	<i>7.</i>	<i>8.</i>	<i>9.</i>	<i>10.</i>	<i>11.</i>	<i>12.</i>	<i>13.</i>	<i>14.</i>	<i>15.</i>	<i>16.</i>	<i>17.</i>
<i>Gestat beh 00</i>	8.79	3.16	1.00																
<i>Gestat beh 06</i>	13.34	3.88	0.65	1.00															
<i>Gestat beh 12</i>	17.76	4.97	0.57	0.87	1.00														
<i>Gestat beh 18</i>	20.57	6.04	0.52	0.77	0.95	1.00													
<i>Industry exp</i>	2.02	1.37	0.10	0.13	0.15	0.19	1.00												
<i>Start-up exp</i>	0.63	0.80	0.08	0.14	0.15	0.18	0.36	1.00											
<i>Formal educ</i>	1.54	0.51	-0.06	-0.12	-0.13	-0.12	-0.04	0.14	1.00										
<i>Social reinforc</i>	4.27	0.72	0.03	0.10	0.09	0.09	0.02	0.07	0.13	1.00									
<i>Inst soc cap 00</i>	4.26	5.18	0.10	0.16	0.19	0.20	0.27	0.38	0.15	0.06	1.00								
<i>Inst soc cap 06</i>	4.68	5.41	0.09	0.17	0.21	0.22	0.23	0.38	0.17	0.05	0.98	1.00							
<i>Inst soc cap 12</i>	5.45	5.85	0.10	0.21	0.25	0.26	0.17	0.34	0.18	-0.01	0.90	0.94	1.00						
<i>Inst soc cap 18</i>	5.80	6.15	0.10	0.20	0.24	0.27	0.18	0.35	0.19	0.00	0.88	0.92	0.98	1.00					
<i>Generalist strat</i>	2.37	0.74	-0.01	0.06	0.05	0.03	-0.08	0.03	-0.14	0.06	0.03	0.04	0.05	0.04	1.00				
<i>Specialist strat</i>	2.57	0.84	-0.05	0.01	0.00	0.00	0.00	0.04	0.13	0.06	0.09	0.11	0.08	0.08	0.01	1.00			
<i>Eco growth</i>	2.45	0.59	0.07	0.05	0.09	0.07	-0.01	0.00	0.11	0.15	0.10	0.10	0.13	0.12	-0.19	0.01	1.00		
<i>Industry comp</i>	3.18	0.71	0.10	0.11	0.08	0.08	0.09	0.04	0.08	-0.11	0.05	0.05	0.08	0.10	-0.09	0.12	0.03	1.00	
<i>Time in proc</i>	57.24	59.60	0.11	0.01	-0.03	-0.02	0.11	-0.08	-0.14	-0.08	-0.10	-0.09	-0.06	-0.07	0.00	-0.05	-0.05	-0.01	1.00

TABLE A3**Residual Results**

<i>Variables</i>	<i>Innovative ventures</i>		<i>Imitative ventures</i>	
	<i>Est.</i>	<i>S.E.</i>	<i>Est.</i>	<i>S.E.</i>
Residual covariance of initial status. growth rate	2.30*	1.19	1.03**	0.00
<i>Inst soc. cap00 with 06</i>	1.13	0.97	0.46	1.75
<i>Inst soc. cap06 with 12</i>	0.91	0.78	1.08**	1.77
<i>Inst soc. cap12 with 18</i>	3.61	2.80	2.82*	5.68
Intercepts				
Initial status	0.61	4.44	5.22**	9.16
Growth	2.25	4.56	3.76**	6.29
Residual Variances				
<i>Gest.Beh00</i>	2.86**	1.43	3.15***	4.76
<i>Gest.Beh06</i>	1.73	1.21	3.12***	4.34
<i>Gest.Beh12</i>	4.84**	1.94	3.18***	5.18
<i>Gest.Beh18</i>	6.92	4.86	5.97**	10.50
Initial status	2.72*	1.41	6.28***	8.18
Growth	3.49**	1.48	2.17***	3.25