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Legitimated Elements and Legitimizing  
Behaviors as Determinants of Organizational  
Emergence

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## ABSTRACT

Tornikoski Erno (2005). Legitimated Elements and Legitimizing Behaviors as Determinants of Organizational Emergence. *Acta Wasaensia* No. 137, 310 p.

This study explores the determinants of organizational emergence in order to enhance our understanding of the reasons why some pre-organizations succeed in becoming new organizations. Through several research questions, the main objective of this study is to formulate a mechanism for the prediction of organizational emergence and to put forward propositions for future testing. The study leans on two theoretical perspectives to develop a preliminary understanding of organizational emergence. Owing to the liabilities of newness, it is almost a requirement for a pre-organization to have legitimacy in order to become a new organization. Institutional theory, on the one hand, points out that pre-organizations should have the right kind of configuration of legitimated elements to be legitimated by their immediate audience. Resource dependence theory, on the other hand, claims that legitimacy can be acquired from the environment, like any other operational resource, through proactive legitimating behaviors. These two seemingly opposing views are integrated. As such, this study intends to examine how three potential legitimizing forces and three potential legitimating behaviors act upon organizational emergence.

In the study, organizational emergence was reflected in two variables: the achievement of five new organizational markers and the perception of the nascent entrepreneur about being in business. A convenience sample, made of the participants of a national business plan competition, was located in France for the empirical exploration of the model proposed. A self-administered questionnaire was used to collect cross-sectional quantitative data from the nascent entrepreneurs. The PLS estimation technique, which belongs to the second-generation multivariate analyses, was used to explore the proposed model of organizational emergence. The proposed model of organizational emergence had concurrent validity to the extent that it allowed the prediction of almost 50 per cent of the variance in organizational emergence in the sample studied.

As a result, the findings of this study indicate clearly that a pre-organization both needs to respond to the institutional pressures of its immediate audience, and, at the same time, to engage itself into legitimating behaviors to become a new organization. More specifically, a pre-organization increases its chances to become a new organization when the market conditions are favorable and when the qualities of the founding team are high. Moreover, instead of just exhibiting a favorable configuration, a pre-organization needs to improvise and combine resources in order to succeed in becoming a new organization. Related to this, efforts to enlarge one's existing network of connections seem to have a negative impact on organizational emergence. Also, technological sophistication seems to have a negative impact on organizational emergence. Finally, the qualities of a nascent entrepreneur does not seem to have any impact on organizational emergence.

The study has succeeded in investigating the focal phenomenon with scientific rigor and, therefore, has contributed to the existing literature on organizational emergence. At the end of the study, propositions based on the findings are put forward for future testing. Implications are drawn for organizational scholars, practitioners, and educators.

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**Key words:** Organizational emergence, nascent entrepreneurs, legitimating behaviors, legitimated elements, PLS path modeling.

## RESUMÉ

Tornikoski Erno (2005). Facteurs de Légitimité et Comportements de Légitimation : Les Déterminants de L'Émergence Organisationnelle. *Acta Wasaensia* No. 137, 310 p.

Cette étude explore les déterminants de l'émergence organisationnelle afin de comprendre les raisons pour lesquelles certaines pré-organisations réussissent à devenir des entreprises et d'autres pas. Le principal objectif de cette étude consiste à élaborer, à l'aide de plusieurs questions de recherche, un mécanisme de prédiction de l'émergence organisationnelle, et à formuler des propositions susceptibles d'être testées par d'autres recherches empiriques à l'avenir. L'étude s'appuie sur deux perspectives théoriques pour une compréhension préliminaire puis une conceptualisation de l'émergence organisationnelle.

En raison du handicap de jeunesse dont souffre toute organisation nouvelle, la légitimité de la pré-organisation semble être une condition indispensable pour que cette pré-organisation donne naissance à une organisation nouvelle. D'une part, la théorie institutionnelle souligne que les pré-organisations devraient posséder une configuration adéquate d'éléments validant leur existence afin d'apparaître légitimes aux yeux de leurs interlocuteurs directs. D'autre part, la théorie de la dépendance des ressources suggère que la légitimité peut être acquise auprès de l'environnement, comme toute autre ressource opérationnelle, grâce à un comportement de légitimation proactif. Ces deux perspectives apparemment opposées sont ici intégrées dans un même cadre conceptuel. Partant de là, cette étude a pour but d'examiner comment trois facteurs de légitimité et trois comportements de légitimation potentiels sont susceptibles d'influencer l'émergence organisationnelle. L'émergence organisationnelle est opérationnalisée à l'aide de deux variables : la vérification par la pré-organisation de cinq indicateurs de l'existence d'une nouvelle organisation, d'une part, et les perceptions du créateur d'entreprise. La validation empirique du modèle proposé est réalisée à l'aide d'un échantillon de convenance, constitué par les participants à un concours national de plans d'affaires, organisé en France. Les données collectées auprès des créateurs d'entreprise à l'aide d'un questionnaire auto-administré font l'objet d'une analyse quantitative en coupe instantanée. Le modèle d'émergence organisationnelle proposé est testé en utilisant la technique d'estimation par les moindres carrés partiels (PLS), qui appartient à la seconde génération des méthodes économétriques d'analyse multidimensionnelle. La validité du modèle proposé est empiriquement confirmée, dans la mesure où il permet d'expliquer près de cinquante pour cent de la variance de l'émergence organisationnelle de l'échantillon étudié.

Ainsi, les résultats de cette étude montrent clairement qu'afin de devenir une nouvelle organisation une pré-organisation a besoin non seulement de répondre aux pressions institutionnelles de ses interlocuteurs directs mais aussi d'adopter un comportement qui la rende légitime. Plus précisément, une pré-organisation accroît ses chances de devenir une organisation nouvelle lorsque les conditions du marché sont favorables et lorsque le niveau de compétences de l'équipe fondatrice est élevé. De plus, pour passer au stade d'entreprise, une pré-organisation ne peut se contenter uniquement de montrer une configuration favorable, elle doit en outre savoir improviser et combiner ses ressources. Par ailleurs, les efforts de la pré-organisation pour élargir son réseau relationnel existant semblent avoir un impact négatif sur l'émergence organisationnelle. On observe de même une incidence négative du degré de sophistication technologique sur l'émergence organisationnelle. Enfin, les qualités intrinsèques des créateurs d'entreprise ne semblent pas avoir d'impact sur l'émergence organisationnelle.

En examinant avec rigueur scientifique le phénomène étudié, cette recherche contribue à la littérature existante sur l'émergence organisationnelle. Les résultats obtenus permettent d'avancer des propositions à confirmer par de futures recherches et présentées en dernière partie. Enfin, les implications de cette étude pour les chercheurs académiques en sciences de gestion, les praticiens, et les enseignants sont également présentées et discutées.

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**Mots clés:** Emergence organisationnelle, créateurs d'entreprise, comportement de légitimation, facteurs de légitimité, modélisation PLS.

## 1 PROBLEM STATEMENT

This study is interested in organization creation. More specifically, this study endeavors to understand why some pre-organizations make the transition to new organizations (a process called “organizational emergence”) while others do not. Indeed, why does only a small part of the thousands of pre-organizations – i.e. entrepreneurial projects that are not yet running businesses - make the transition into new organizations, while the majority of them never succeed in the organizational emergence process? From academic point of view, what determines organizational emergence?

What we know, is that, among pre-organizations, only a few make the transition into new organizations. In other words, the most potential entrepreneurs actually never succeed in creating organizations (Reynolds & White 1997). Indeed, there are many individuals who dream of creating new organizations. Some dreamers even go a step further, by initiating and carrying out gestation activities to materialize their conception of new organization. These people, who are working on pre-organizations (i.e. entrepreneurial projects) to create new organizations, are called nascent entrepreneurs. In the USA, for example, it is estimated that each year 4 to 6 per cent of the working population is actively undertaking some activities in order to establish a new organization (Reynolds & White 1997), while in Finland this figure was around 7 per cent in 2003 (Arenius, Autio & Kovalainen 2004).

When is a new organization born? Entrepreneurship scholars consider that sales or a sales level is a good proxy for the birth of a new organization (e.g. Manolova, Brush & Edelman 2002). That is, sales or a sales level determine when a new organization is born. However, studies have shown that the first key event of a pre-organization can be sales or any other important event (Reynolds & Miller 1992). Katz and Gartner (1988) introduce four emergence properties: Intention, Resources, Boundary, and Exchange. It is only through the acquisition of all the four emergence properties that a pre-organization makes the transition into a new organization. In other words, the start of sales does not create new organizations. To date, no empirical research has taken into account the notion of emergence properties when trying to investigate organizational emergence.

Moreover, the mainstream entrepreneurship research generally concentrates on identifiable organizations (Katz & Gartner 1988; Gartner, Bird & Starr 1992; Davidsson & Wiklund 2001), whereas relatively little research has been conducted about the creation of new organizations (Aldrich 1999). As will be confirmed in Chapter 2, little is known about the gestation period, i.e. the time between the decision to start a new business and the successful founding of a new organization. As such, we have little to say about the determinants of organizational emergence.

The determinants of organizational emergence are not explored by scholars, for understandable reasons. Researchers may have shied away from the study of organizational emergence because of the conceptual and methodological complexity of the phenomenon. Bamford, Dean and McDougall (2000) argue that the difficulty in the accurate measurement of founding conditions is one of the main challenges for conducting empirical research on new ventures. Institutionally minded scholars take the existence of organizations as a taken-for-granted aspect of everyday life (Zucker 1983). Since there is no organization prior to founding, organizational attributes cannot be used as independent variables (Delacroix & Carroll 1983). It is easier to study new organizations, rather than pre-organizations.

Notwithstanding this methodological challenge, **the purpose of this study is to explore the phenomenon of organizational emergence in order to enhance our understanding of the reasons why some pre-organizations succeed in becoming new organizations.** That is, the central focus of this study lies on exploring potential determinants of organizational emergence.

## **1.1 The objective of the study**

While we seem to be in short of empirical knowledge about the determinants of organizational emergence, organizational theories, on the other hand, may prove to be very useful for the establishment of a preliminary understanding of the focal phenomenon. Indeed, organizational theories offer us interesting theoretical accounts to form an initial

picture about the determinants of organizational emergence. For example, in the field of entrepreneurship, Stevenson and Jarillo (1990) have defined entrepreneurs as individuals who start new organizations regardless of the resources currently possessed. Aldrich and Martinez argue that firms that emerge with limited resource endowments are least likely to survive, thus: “...*the transformation of an idea into an organization requires that entrepreneurs acquire resources*” (2001: 45). Indeed, before showing up in the official statistics, pre-organizations generally need to acquire external resources to become viable entities. Because pre-organizations need to acquire resources, they are generally very dependent on external parties at the time of their establishment. This is the case especially with technology-based pre-organizations, for which it is almost a requirement to get significant up-front capital and other resource injections in order to continue with the initial product and technology developments.

The motivating factor for external actors to give such resources is their belief, or feeling that the pre-organization is indeed competent, efficient, effective, worthy, appropriate, and/or needed (Zimmerman & Zeitz 2002). Aldrich (1999) echoed this point, suggesting that in order for populations of organizations to come into existence, they must be perceived as legitimate in the eyes of potential members and resource providers. In this study, legitimacy – a social judgment of acceptance, appropriateness, and desirability (DiMaggio & Powell 1991) – is related to pragmatic legitimacy. In its simplest form, pragmatic legitimacy can be seen as a sort of exchange-legitimacy, which derives from a pre-organization’s most immediate audiences (Aldrich & Fiol 1994; Suchman 1995). As such, legitimacy is conferred when the most immediate audiences affected by a pre-organization’s outcomes endorse and support the pre-organization’s goals and activities (Elsbach & Sutton 1992: 700).

Therefore, it seems that pre-organizations must acquire external resources from their immediate audiences to become viable entities. In order to succeed in resource acquisition, pre-organizations need legitimacy. In support, Zimmerman and Zeitz (2002) argue, and Delmar and Shane (2004) observed, that legitimacy is an important resource to gain other resources. Unfortunately, such advice is exceedingly difficult to operationalize due to the liabilities of newness (Stinchcombe 1965) pre-organizations face. Stinchcombe (1965)

argues that due to their limited resource endowments and lack of history, organizations lack both the means by which to engage in resource exchanges and sufficient insurance against default in any exchanges in which they do engage. He argues that the liabilities of newness inhere in special difficulties that organizations face in acquiring resources.

The fact that pre-organizations do not have established contacts with resource providers and no records of accomplishment or references leads to a legitimacy problem. It is difficult to trust a newborn, which does not have a history. Stinchcombe (1965) views legitimacy as an antidote for the liability of newness of new ventures. Established organizations do not face the problems of lack of legitimacy because past performance itself generally provides legitimacy and access to resources. Pre-organizations, on the contrary, need resources from their environment. As such, it seems that pre-organizations are faced with a paradox: they require resources to become organizations, but the gatekeepers of these resources are reluctant to engage in exchanges with them due to their lack of legitimacy.

Given this paradox, this study believes it is important to address what antecedents contribute to a pre-organization's legitimacy and in turn its ability to become a new organization. As such, this study takes the following statement of Gartner and his colleagues (1992: 15) as its starting point: "*It would seem that the primary task of entrepreneurial theorists is not to take organizations for granted, but probe how and why organizations come into being.*" It is the "why" question that we are interested in this study. Therefore, in order to advance our understanding of the reasons why some pre-organizations succeed in making the transition into new organizations, **the main objective of this study is to formulate a mechanism for the prediction of organizational emergence.** The formulation of the mechanism of organizational emergence will be based on the notions of liabilities of newness and legitimacy.

## 1.2 The research questions

Given the above conceptualization of organizational emergence, how might a pre-organization overcome the liability of newness and succeed in becoming a new

organization? Aldrich (1999) argues that in order for new organizations to survive, they must be perceived as legitimate in both a cognitive sense, that is they must be accepted by all of those groups who might be inclined to engage in resource exchanges with them, such as customers, suppliers, employees, and the like, and a sociopolitical sense, that is they must be perceived as engaging in appropriate activities. Indeed, it is possible to identify two theoretical accounts to explain how a pre-organization can overcome the liabilities of newness.

On the one hand, the literature offers an account where organizations can overcome liabilities of newness by acquiring legitimacy from the environment like an operational resource (Pfeffer & Salancik 1978; Dowling & Pfeffer 1975). According to these ideas, pre-organizations can make their businesses more tangible to others through proactive behavior and therefore are able to overcome liabilities of newness. For example, pre-organizations can improvise by acting as if their organization were a legitimate business (Gartner, Bird & Starr 1992). The literature also describes how individuals gain access to critical resource providers and get moral support through personal networks (Aldrich & Zimmer 1986). According to this perspective, *legitimizing behaviors* (Dowling & Pfeffer 1975: 130) are related to a pre-organization's efforts to overcome liabilities of newness: Legitimacy is proactively acquired from immediate audiences through legitimating behaviors.

On the other hand, organizational literature also presents a rather passive account of an organization's ability to overcome liabilities of newness. Instead of acquiring legitimacy like an operational resource, organizations can only try to conform to the institutional demands of the environment (Zucker 1987). Organizations need to exhibit the structures and processes that immediate audiences acknowledge and understand in order to overcome liabilities of newness. A pre-organization's immediate audiences, such as venture capitalists and potential business partners, generally look at such issues as the characteristics & experience of the lead entrepreneurs and the characteristics of the founding team when making decisions whether to commit themselves to the pre-organization or not (Macmillan, Siegel & Narasimha 1985; Goslin & Barge 1986). According to this perspective, a pre-organization exhibits *legitimated elements* (Zucker 1987: 443) to overcome liabilities of

newness: A pre-organization is legitimated when it reaches conformity with the demands of immediate audiences by exhibiting legitimated elements.

The notion of legitimacy acquisition comes from the resource dependence theory (e.g. Pfeffer & Salancik 1978; Dowling & Pfeffer 1975). The notion of conformity comes from the institutional theory (e.g. Meyer & Rowan 1977; DiMaggio & Powell 1983). The two perspectives are adopted as the building blocks of this study for three reasons. First, the theoretical accounts of the resource dependence theory and the institutional theory clearly offer plausible explanations of the mechanism of organizational emergence. That is, they give explanations on how pre-organizations can become new organizations. Second, based on the above discussion, it seems that the resource dependence theory and the institutional theory share the idea that legitimacy is the key for pre-organizations to overcome the liability of newness. That is, both of the theories deal with legitimacy explicitly. Third, the two theories seem to differ in terms of a pre-organization's ways to become legitimate. According to resource dependency theory, legitimating behaviors lead to a new organization. The institutional theory, on the other hand, holds that the exhibition of legitimated elements leads to a new organization. These two seemingly opposing views on organizational emergence promise to be a fruitful start for theorizing for this study and to acquire a more complete image of organizational emergence. As such, the resource dependence theory and the institutional theory are used in this study to formulate a mechanism for the prediction of organizational emergence.

The main objective of this study requires answers to four basic questions. First, the institutional theory emphasizes the importance of legitimated elements as a key component of conformity and suggests that, to become a new organization, a pre-organization should exhibit the right combination of legitimated elements. The resource dependence theory, on the other hand, emphasizes the importance of legitimating behaviors as a mean to extract legitimacy from the environment and to become a new organization. As the first step for identifying relevant constructs in existing theories, we need to look at the institutional theory and the resource dependence theory to understand how we can conceptually understand the focal phenomenon, and what are the central constructs offered by these theories. Therefore, the first research question is as follows:



- 1) Based on the institutional theory and the resource dependence theory, what theoretical constructs have the potential to be the determinants of organizational emergence?**

While answering the first research question, we will get an understanding of how each theory sees the focal phenomenon. That is, two theoretical frameworks will be constructed as an answer to the first research question.

Second, to isolate the impact of a particular set of constructs from a larger and more complex picture may be a daunting task simply because things usually end up being connected to each other in many different ways. Indeed, in reality, organizations face both strategic operational challenges and institutional constitutive pressures, which is why it becomes important to incorporate the previous duality into one picture (Swindler 1986; Suchman 1995). It is the combination of the institutional theory and the resource dependence theory into one coherent conceptual framework that may have the strongest explanatory power. As such, the second research question of this study concerns the integration of the different constructs derived from the institutional theory and the resource dependence theory:

- 2) How should organizational emergence be modeled based on the constructs derived from the institutional theory and the resources dependence theory?**

To answer the second research question, two different models will be produced. First, the integration of the identified constructs from the resource dependence theory and the institutional theory will produce a *theoretical model* and provide a theoretical understanding of organizational emergence. The integration effort starts with the underlying assumption that legitimated elements and legitimated behaviors together explain a larger part of organizational emergence than each perspective does alone. Once a theoretical model of organizational emergence has been proposed, one needs to specify a *research model* for empirical investigation. To specify a research model, the constructs of the theoretical model need to be translated into observable variables. The specification of a research model uses other empirical studies as a source to identify corresponding variables

to more conceptual constructs. In addition, causal relationships among theoretical constructs are specified using an existing conceptual model, the one of Cooper (1993), as a general guiding line. The theoretical and research model together offer an explanatory mechanism for organizational emergence.

Thirds, once a plausible mechanism has been proposed in the form of theoretical and research models, it is necessary to estimate how well the plausible mechanism corresponds to the reality. That is, the validity of the theoretical reasoning needs to be tested. Without empirical verification, the plausible mechanism will remain plausible. As such, the third research question relates to concern about the explanatory power of the proposed mechanism. The third research question is the following:

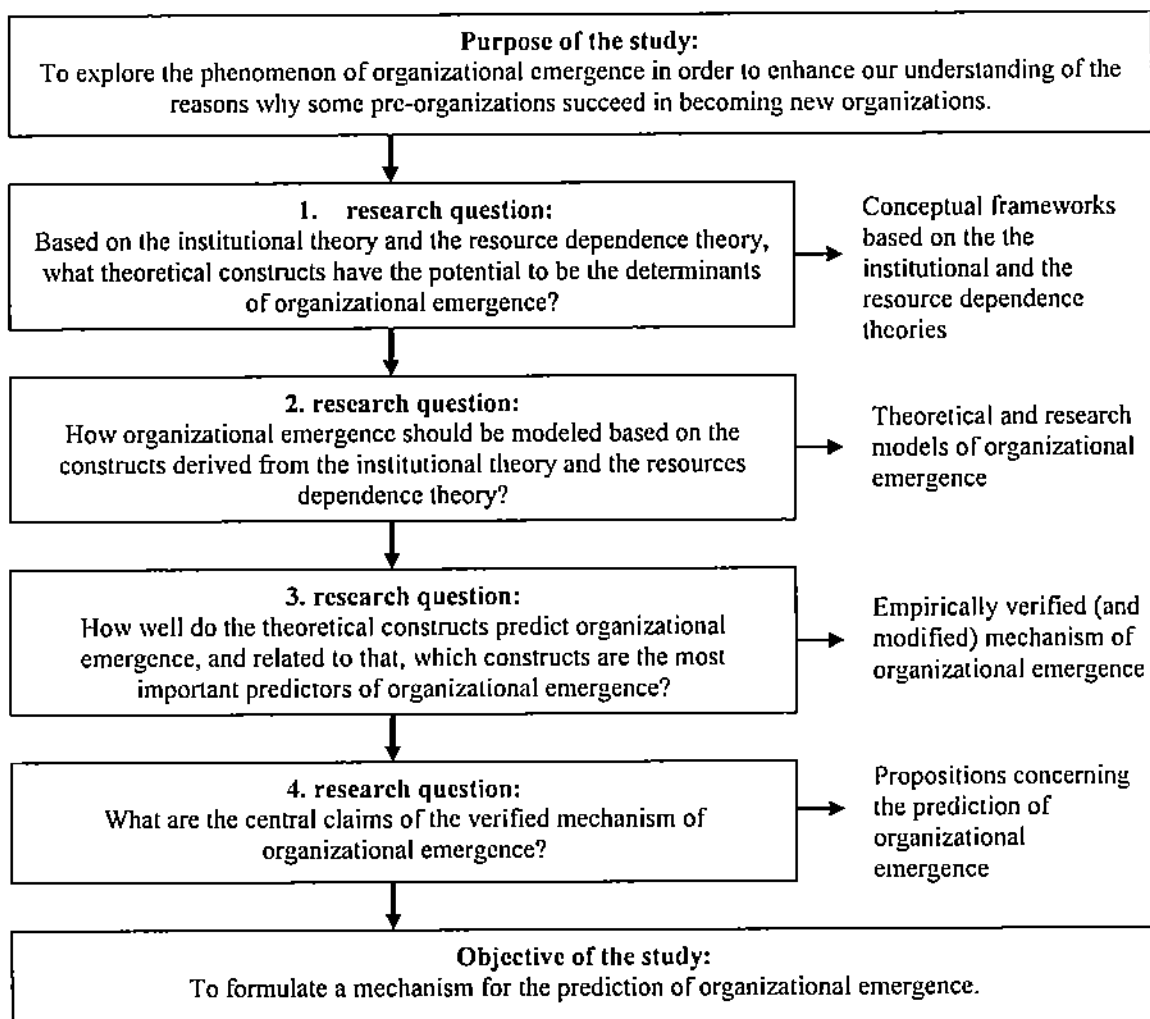
**3) How well do the theoretical constructs predict organizational emergence, and related to that, which constructs are the most important predictors of organizational emergence?**

The answer to the third question will lead to estimation about the predictive power of the plausible mechanism. If the purpose is to enhance understanding on the reasons why some pre-organizations succeed in becoming new organizations, as it is in this study, we need to have a valid mechanism able to predict the focal phenomenon. If one can predict an outcome using an explicit mechanism, the reasons leading to this outcome can be understood better. Moreover, by answering the third question, we will also get an estimation of the relative importance of the different theoretical constructs in the prediction of organizational emergence.

Finally, the fourth and the most important research question of this study is related to the mood-spoiling but so often heard statement: So what? One of the most central issues of research, and sometimes forgotten, is to reflect upon what has been learned from the theoretical discussion and empirical number crunching about organizational emergence. So, in the fourth question, we ask:

**4) What are the central claims of the verified mechanism of organizational emergence?**

The answer to the fourth question will be the most important theoretical contribution of this study. The answer is given in the form of general propositions, statements put forward concerning the phenomenon of organizational emergence and its prediction. Since a convenience sample is used to investigate the phenomenon empirically in this study, it is important to keep in mind that the findings of this study cannot be automatically generalized. Instead, propositions are put forward so that the central findings of this study can be tested in other contexts. Figure 1 illustrates the logical linkages between the purpose of the study, the objective of the study, and the research questions.



**Figure 1.** General logic of the study.

Reaching the objective of the study, answering the research questions, and fulfilling the purpose of the study are needed to ensure that the study can make a scientific contribution. To do all this, several critical milestones need to be achieved. This study has six critical milestones to be achieved:

1. Task of conceptualizing: The main concepts of this study need to be explicitly defined so that ambiguous constructs and models are not put forward.
2. Task of reviewing: Broad themes in the literature known at a point of time need to be summarized to make an integrative review about organizational emergence.
3. Task of modeling: The institutional theory and the resource dependence theory need to be reviewed, analyzed, and synthesized to integrate the two theories to build a theoretical model of organizational emergence. Moreover, the main constructs need to be specified, and a plausible mechanism needs to be proposed to link the variables to each other. That is, the theoretical model needs to be specified and operationalized into a research model.
4. Task of designing: Suitable methodology needs to be adopted to test the research model. The main variables need to be transformed into measures, a survey instrument designed, a sample located, and data collection planned. Moreover, reliability and validity issues related to the measures need to be discussed.
5. Task of exploring: The proposed mechanism needs to be explored empirically, and reformulated, if needed.
6. Task of theorizing: Conclusions and implications need to be set forth. Propositions need to be put forward for future testing, and limitations need to be discussed. In addition, avenues for future research need to be considered.

### **1.3 Delimitations of the study**

Delimitations are important in the sense that they narrow the scope of a study (Creswell 2003: 148). This study moves at the crossroad between entrepreneurship and organizational theories, which is why it is important to try to establish the boundaries and expectations inherent in this study.

First, between entrepreneurship and organizational theories, this study is delimited primarily to organizational theories. Echoing Gartner and his colleagues (1992), in this study we feel that there is no need to develop new theories about the phenomenon of organizational emergence because existing theories can be used. To develop a model of organizational emergence, this study leans on the institutional theory and the resource dependence theory, both of which emerged because of an effort to understand organizations and their relationship with the environment. The special flavor brought by this study comes from the fact that the empirical context of the study coincides with the one of entrepreneurship field, namely new business creation. As such, organizational theories are applied to entrepreneurial context. To put it the other way around, this study is interested in seeing entrepreneurship as a process of organizational emergence, rather than as attributes of entrepreneurial individuals. As such, the study echoes Gartner and his colleagues (1992), who suggest that thinking of entrepreneurship as a process of emergence offers a very fruitful metaphor for relating entrepreneurship to other disciplines. Several organizational and entrepreneurship scholars have made the connection between entrepreneurship and firm organizing metaphor (e.g. Bygrave & Hofer 1991; Gartner 1988; Cole 1959; Harbison & Myers 1959; Collins & Moore 1964).

Second, this study is limited to the specific phase of organization creation process. Reynolds (1994) divides the organization creation process into four phases: conception, gestation, infancy, and adolescence. To use the previous terminology, this study is not interested in the conception phase, even though opportunity discovery and evaluation are crucial events for entrepreneurship field (Shane & Venkataraman 2000). As such, in this study, we are not interested to know why some entrepreneurial individuals want to become entrepreneurs or how they search and evaluate novel ideas. We are neither interested in what happens to new organizations at the infancy or the adolescence stage, i.e. this study does not focus on new organizations. In this study, we are not interested in knowing which *new* organizations survived or performed well in terms of growth, profitability, etc., or which new organization reached the initial public offering (IPO) stage. As it turned out, in the sample of this study, there were new organizations that terminated their activities few months after making the transformation from a pre-organization into a new organization. From the point of view of many small business scholars, these new organizations were

unsuccessful, but from the point of view of this study, they were successful in the emergence process. This study focuses on the gestation phase of organization creation process, where an opportunity has been identified and a decision has been made to start to create a new organization. As such, the study is limited to gestation stage, which is situated between the conception and the infancy stages of the organization creation process.

Third, this study is also limited to investigating only a certain type of legitimacy. Suchman (1995) points out that three broad types of legitimacy exist in the literature: pragmatic, moral, and cognitive legitimacy (also Aldrich & Fiol 1994). All three types of legitimacy include a generalized perception or assumption that organizational activities are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions, but rest on a somewhat different behavioral dynamic (Suchman 1995). While pragmatic, moral, and cognitive legitimacy co-exist in most real-world settings, legitimacy becomes more elusive to obtain and more difficult to manipulate as one moves from pragmatic to moral, and to cognitive. For example, for a new organization, it may require years to achieve taken-for-granted existence in the market place. The taken-for-granted aspect of an organization's existence refers to cognitive legitimacy (Suchman 1995: 582). Instead of looking at moral or cognitive legitimacy, this study limits itself to pragmatic legitimacy. Therefore, when a pre-organization becomes a new organization, this implies that the new organization possesses pragmatic legitimacy.

Fourth, this study is also limited to a certain research design and method of data collection. By trying to formulate a mechanism for the prediction of organizational emergence, the study adopts a deductive research method. In a deductive method, theory generation generally takes place in a deductive manner, starting with reviews of existing literature and operating out of prior theories (Gil & Johnson 1991). As will be seen in Chapter 4, the data needed for the exploration of the mechanism of organizational emergence is collected using a survey, which produces a cross-sectional quantitative data: a snapshot of reality at one point of time. The survey instrument also collected data in relation to timing of certain events. For example, the instrument asks when nascent entrepreneurs achieved sales or hired new employees. Yet, it was not possible to use this information because only few respondents provided answers to these questions. As a result, all the data is cross-sectional.

Fifth, this study is also limited to a certain level of analysis. Entrepreneurship research is known for its interest in explaining success in business creation at individual level. Indeed, factors related to individuals should not be excluded from the explanation of organizational emergence because they interact with other dimensions of the organization creation process, as demonstrated by the framework of Gartner (1985). Factors related to entrepreneurial individuals are also part of the model of this study, which intends to predict organizational emergence. However, while using factors related to individuals, the study does not intend to explain the success of entrepreneurial individuals. Nor does this study try to explain environmental-level phenomena, like population ecology does (e.g. Hannan & Freeman 1977; Aldrich 1979). The emphasis of this study is on organizations and on explanations of pre-organizational success. Therefore, the level of analysis of the study is organization, more specifically, pre-organization.

Sixth, this study is limited to a certain empirical context. As will be seen in Chapter 4, the empirical data concerning pre-organizations was collected in France using a convenience sample made up of the participants of a national business plan competition, in which mainly technologically oriented pre-organizations participated. The technology-based sector has some particular characteristics, which separate technology-based pre-organizations from other pre-organizations. For example, it is a sector where new ventures rely almost exclusively on up-front and subsequent external funding by the VC community. As such, this study focuses on technology-based pre-organizations, and, more specifically, on French technology-based pre-organizations.

Seventh and related to the previous point, this study is also limited to a certain context of organization creation. Organization creation can take place in many different contexts (Gartner 1993). Corporate entrepreneurship is concerned with starting new organizations within established organizations. A new organization can also be the result of joint efforts of two or more established organizations. Community activity can also lead to the creation of new organizations. This study only concentrates on new organizations, which result from an independent activity, i.e. *de novo* start-ups. The mechanism of organizational emergence applies mainly to independent start-ups.

Finally, this study is limited to a certain national economical context. The pre-organizations used in this study were identified in 2001 and 2002. Throughout the 90's, the national economy of France grew along with the other Western economies. Yet, the growth rates started to decrease during 2000 and the recession hit in 2001. The events of September 11 in the US accelerated the economic downturn further. As such, the year 2001 was very difficult for entrepreneurs compared to the previous years. Moreover, the beginning of the year 2002 was not much better for new start-ups. For example, during the first trimester of 2002, there was a reduction of 4.5 per cent in the rate of new firm creations in Paris, compared to the same period in 2001<sup>1</sup>. In addition, available venture capital financing decreased considerably during 2001. As such, this study identified the pre-organizations while the economy was experiencing a downturn, and collected the data from the identified pre-organizations in 2003, when the economical situation had improved somewhat.

#### **1.4 Significance of the study**

According to Whetten (1989), there are two main possibilities of making contributions of sufficient magnitudes. First, scholars can simply try to add or subtract factors from existing models. The value of adding or subtracting factors needs to be demonstrated clearly. For example, scholars can demonstrate that adding or subtracting a factor affects the accepted relationships between variables. A second way to contribute is to challenge the underlying rationale supporting accepted theories. According to Whetten, this is perhaps the most fruitful approach, but also the most difficult one to achieve in theory development.

This study leans towards two accepted theories, namely the institutional theory and the resource dependence theory. This study does not challenge the underlying rationale of these theories. Instead, it extends the two theories into a new area – i.e. organizational emergence –, which is one of the characteristics of explanatory research. In addition, a mechanism to integrate the two theories is proposed and tested empirically. As a result of the empirical testing, propositions are put forward about the discovered and verified mechanism of

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<sup>1</sup> Source: Le baromètre du greffe du Tribunal de commerce de Paris pour mars 2002.



organizational emergence. Therefore, the theoretical contribution of this study is closely related to the first possibility of making contributions, i.e. adding or subtracting factors from existing models. The difference between the contribution of this study and just adding or subtracting factors from existing models comes from the fact that no models of organizational emergence exist. This study will suggest one.

By raising the research questions, this study follows the logic of new venture performance studies, where the important dimensions of a focal phenomenon are generally linked to specific outcomes (see Section 2.5). The aim of this study is not to list variables and detect connections between them. Instead, in this study we hope that the question will guide us far beyond the simple “variable listing” level in search of an explanation. It is important to identify relevant determinants (variables), but it is more interesting to discover how the variables relate to abstract concepts and how the abstract concepts are related to each other. Once we are able to identify important concepts and their interaction, we have a theory. As such, this study follows the recommendation made by Davidsson (1991), who stresses that to advance further, the field of entrepreneurship should focus on more abstract concepts, rather than testing low-level variables.

In the field of entrepreneurship, several scholars have longed for the development of better theories (e.g. Bygrave & Hofer 1991; MacMillan & Katz 1992), and, more precisely, of well-developed theories of causal relationships (VanderWerf 1989). Low and MacMillan go even further, claiming that “*The field must move to the stage where exploratory case analysis or cross sectional census taking studies that are not theory driven and do not test hypothesis are no longer acceptable*” (1988: 155). Even though these ideas were put forward more than ten years ago, they still hold true, as can be seen from the below empirical review (see Chapter 2). Facing this realism, this study makes a modest attempt towards the direction of moving the field of entrepreneurship to the next level. Just as the advancement of the strategy field has depended and continues to depend upon the ability to explain and predict organizational success and failure (Rumelt, Schendel & Teece 1994), in this study we believe that the advancement of entrepreneurship field increasingly depends upon building theories that help explain and predict organizational emergence.

Furthermore, it is difficult to model human conduct as opposed to natural phenomena. Scientists are able to predict the functioning of the natural world with relatively high accuracy. Social scientists, on the other hand, have difficulties to predict social phenomena before their occurrence. The determinants of a phenomenon are generally found after the event has occurred. The objective to discover an explanatory mechanism to predict organizational emergence is influenced by scientific objectives. Yet, the present study belongs to social sciences and accepts the impossibility of finding a perfect explanatory mechanism for human conduct.

In order to add rigor to advance entrepreneurship field and to model social conduct, i.e. organizational emergence, this study will deploy the structural equation modeling (SEM) technique in the statistical analysis of the empirical data. What is interesting in the SEM is that instead of being a strictly confirmatory technique, it also includes some exploratory elements. The SEM technique allows interplay between theory and data. This study aims to discover a mechanism that connects legitimated elements and legitimating behaviors together to predict organizational emergence. SEM will allow us to play with the data and the model to look for the best explanation for organizational emergence. Similar efforts to model complex social phenomena have been done for example in connection with explaining small firm growth (e.g. Davidsson 1991; Delmar 1996; Wiklund 1998), the performance of small firms (e.g. Yli-Renko 1999), and opportunity recognition behavior (e.g. Puhakka 2002). SEM has also been used in strategy research, see for example Hulland (1999) for a critical analysis of four studies using SEM.

From a practical point of view, this study tries to shed light to the complex phenomenon of organization creation by showing what the important determinants of successful organization creation are. The lack of knowledge about determinants of organizational emergence has rendered our ability to communicate sound advice to practitioners involved in the pre-organization stage severely deficient. It may be that the high failure rates of newly formed firms are a reflection of the knowledge of this area. Thus, this study seeks to add to the collective knowledge of the pre-organization stage, and in so doing, offer practical advice to nascent entrepreneurs involved in creating a new firm. If certain legitimated elements and legitimating behaviors increase the probability of organizational

emergence, nascent entrepreneurs can appraise their pre-organizations accordingly. By trying to discriminate between different legitimated elements and legitimating behaviors, this study has the potential to demonstrate to nascent entrepreneurs what matters in the organization creation process. Similarly, the vast population of the immediate audience of pre-organizations can benefit from the study. In addition, educators can benefit from the findings in this study to focus their courses in entrepreneurship on relevant issues, which seem to make the difference in organizational emergence.

### **1.5 Main concepts of the study**

The need for developing precise concepts cannot be overstated because they add precision to a scientific study (Firestone 1987). Concepts are the building blocks of science upon which proposition are based (Osigweh 1989). The inability to produce conclusive definitions of key concepts seems to be distinctive to social sciences and to entrepreneurship literature in particular. Rather than reaching global definitions, scholars are encouraged to be specific in their own ideas and assumptions. Indeed, a lot of ambiguity in research can be created if the main concepts are loosely defined, or if no definitions are provided at all. What can be said about the following type of definition: "*A venture is considered new if it has not reached a phase in its development where it could be considered a mature business*" (Chrisman et al. 1998)? Definitions like this are a perfect way to create conceptual debates among organizational scholars and lead to ambiguous research propositions. To avoid the same trap, it is necessary to define what is meant by the central concept of this study. As such, a critical milestone for this study, the Task of Conceptualizing will be achieved in this chapter.

This study does not define what an entrepreneur is. This is because the study does not focus on entrepreneurs or entrepreneurship as such. Scholars are free to debate whether organization creation is an entrepreneurial event or not. For example, Shane and Venkataraman (2000: 218) regard the phenomenon of organization creation to be problematic from the point of view entrepreneurship field because if one concentrates only on organization creation, it leads one to neglect to measure opportunities, which is another

nexus of entrepreneurship. Whether organization creation is a sign of entrepreneurial activity or not, it is still the focus of this study. The interest of this study lies in organization creation.

This section discusses and develops the central concepts of this study. The main concepts of this study are the following ones: pre-organization, legitimating behaviors, legitimated elements, organizational emergence, legitimacy, and mechanism of organizational emergence. In addition, the discussion focuses on the main concepts by trying to relate them to other similar concepts. The purpose of the debates is to justify the decision to choose a particular concept over other ones. Table 1 summarizes the definitions.

**Table 1.** The main concepts and corresponding definitions of the study.

CONCEPT	DEFINITION
Pre-organization	An entrepreneurial project, which aims at creating a new business organization and which has at least one but less than four emergence properties (intention, boundaries, exchange, resources) of established organizations.
Legitimizing behaviors	Set of activities carried out during the gestation stage of organization creation intended to acquire legitimacy proactively from the immediate audience and to succeed in creating a new organization.
Legitimacy	A generalized perception or assumption that the actions of an organization are desirable, proper, or appropriate.
Legitimated elements	Characteristics and qualities of a pre-organization that conform to the demands of the most immediate audience of the pre-organization.
Organizational emergence	The successful acquisition of all emergence properties, which result in a new organization.
Mechanism of organizational emergence	Explains "why" things happen: a mechanism presents the key constructs, the relationships between the constructs, and the theoretical rationale to predict organizational emergence.

### 1.5.1 Pre-organization

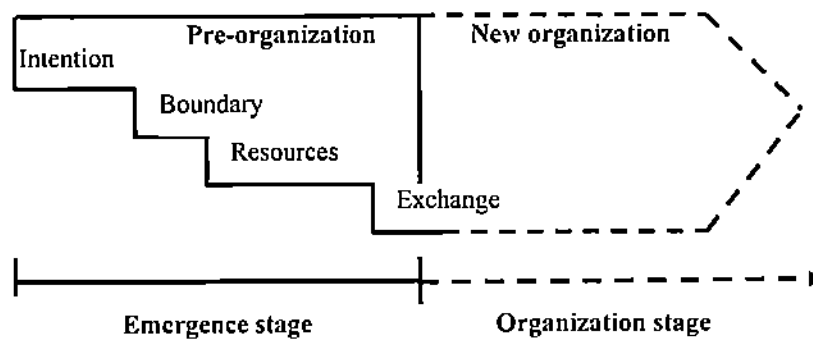
Most studies in entrepreneurship use the concept of 'new venture'. As will be seen, in most cases this concept actually refers to a "new organization", as researchers usually concentrate on identifiable organizations, i.e. organizations that already have been established (Katz & Gartner 1988). This study, however, concentrates on pre-organizations, which are more like entrepreneurial projects, organizations-to-be-created, etc.

The definition of pre-organization, as the term is used in this study, originates from the Katz and Gartner's (1988) conceptualization of emerging properties. According to the authors, there are four emerging properties, namely intention, resources, boundary, and exchange, which can be used to identify emerging organizations.

First, an individual, or group of individuals, generally have characteristics that demonstrate the purpose and goals of creating a new organization (intention). Indeed, an entrepreneurial mind starts the organization creation process (e.g. Schendel & Hofer 1979; Westley & Mintzberg 1989). Second, to realize the intentions to create something new, physical components, such as human and financial capital, need to be combined (resources). In most cases, a pre-organization has to look for external resources, because it can survive and grow only if it secures critical resources from its environment. Third, a barrier between a pre-organization and its environment needs to be created (boundary). That is, an organization with distinctive characteristics – such as incorporation, phone listing, or tax identification number – needs to be separated from its environment. Fourth, the boundary creation is needed before a pre-organization can engage itself in cycles of transactions (exchange) with its environment. Indeed, exchange – such as sales, loans or investment – is commonly taken as the indicator of the birth of a new organization. According to Katz and Gartner (1988), all four emergence properties would need to be manifest in order for an emerging organization to become a new organization.

Following the conceptual development of Katz and Gartner (1988), this study adopts the idea that a new organization is born when a pre-organization has all the four emergence properties. If none of the emergence properties is present, nothing exists, not even a pre-

organization. A **pre-organization** is an entrepreneurial project, which aims at creating a new business organization and which has at least one but less than four emergence properties of established organizations. The emergence properties are intention, boundary, exchange, and resources. Figure 2 illustrates conceptually the difference between a pre-organization and a new organization. Even though the four emergence properties are illustrated in a linear fashion from intention to exchange, in reality any of these four emergence properties can be the first to occur.



**Figure 2.** Pre-organization, new organization and the emergence properties.

#### Clarifications and debatable issues

This study is interested in pre-organizations, which could be characterized as organizations not yet created. Scholars have used different terms, such as gestation (Whetten 1987; Reynolds & Miller 1992), start-up (Van de Ven, Angle & Poole 1989), organization *in vitro* (Hansen & Wortman 1989), conception and development (Kazanjian 1988), prelaunch (McMullan & Long 1990), organizational emergence (Gartner et al. 1992) to describe the phase where a new organization does not yet exist but something is in the process of being formed.

While being a valuable contribution to organizational emergence discussion, the four emergence properties proposed by Katz and Gartner (1988) fail to make an explicit distinction between the emergence of an organization and a business. An individual may succeed in generating sales, which indicates the emergence of a new business, without having created an organization. Vice versa, an individual can first create an organization, for example, by hiring employees and setting up a management team, before making any

sales. The creation of the business may be the most important focus of a nascent entrepreneur, but an organization is the engine of any running business. Therefore, the organization creation side of organizational emergence is more about the creation of a formal structure, whereas business creation is more about creating exchange relationships with other organizations. In this study, the interest lies in investigating a phase in which both an organization and a business have been successfully created. Therefore, *the emergence of an organization includes the creation of a formal organization (structure) and a business (exchange relationships)*. As such, any attempt to investigate organizational emergence should include measures related to the emergence of a formal organization and a business.

Some of the four emergence properties mentioned by Katz and Gartner (1988) can rather easily be attributed to the emergence of formal organization or business. First, the property of *boundary* could be related to the emergence of a formal organization. What separates an organization from its environment are different boundary features, such as name, logos, tv-numbers, etc. Second, the property of *exchange* is part of the business creation side of organizational emergence. For example, sales indicate that an exchange relationship has been formed with other organizations. In addition, the establishment of a credit account with a supplier could be taken as an indicator of exchange (i.e. Gartner, Carter, Lichtenstein & Dooley 2003). Third, the property of *intention* is somewhat more problematic because it is usually related to an individual, i.e. nascent entrepreneur. Intention can be regarded as a more general property of an individual, which directs the action and behavior of an individual to start a new organization without separating a new business and a new formal organization. The property of *resources* is also a more complicated one to be attributed directly to emergence of a formal organization or a business. Organizations are made of a bundle of resources, such as human resources, financial resources, equipment, facilities, personal investments of time and money, etc. While some of the resources do not require an exchange relationship with the environment, like personal investments of time and money, other resources do indicate an exchange relationship, such as obtaining of external financing. In other words, some of the resources indicate the emergence of a new formal organization and others the emergence of a new business, respectively. So, whilst Katz and Gartner (1988) do not explicitly speak about the emergence of a formal structure and

business when talking about organizational emergence, a closer look at the four emergence properties shows that they indeed cover both the emergence of formal structure and business.

### 1.5.2 Legitimizing behaviors

The concept of legitimating behaviors comes from the resource dependence theory. For example, Dowling and Pfeffer (1975: 130) give an example of an organization engaged in a variety of legitimating behaviors when faced with a problem legitimacy. Moreover, they view legitimacy as a resource, which an organization can attempt to acquire. Echoing these ideas, this study defines that **legitimizing behaviors refers to set of activities carried out during the gestation stage of organization creation intended to acquire legitimacy proactively from the immediate audience and to succeed in creating a new organization.** Later, legitimating behaviors is further divided into specific sets of activities.

#### Clarifications and debatable issues

The focus of this study is on legitimating behaviors, which enable the creation of an organization, rather than on the behaviors related to growth, maintenance, or change of established organizations (Gartner 1993; Carter et al. 1996). Moreover, the above definition of legitimating behaviors *does not* refer to any individual task (e.g. asking for funds) undertaken by an individual and/or a group of individuals in order to create a new organization. Neither does the definition of legitimating behaviors equal with so called gestation activities. Indeed, nascent entrepreneurship studies in the USA have produced descriptions of important gestation activities associated with a nascent entrepreneur's activities.

For example, Carter and her colleagues (1996) observed that nascent entrepreneurs could be involved in the following 14 different activities in attempting to establish a new business:

- Organizing a team
- Preparing a plan
- Purchasing facilities/equipment
- Renting facilities/equipment



- Looking for facilities
- Investing own money
- Asking for funding
- Getting financial support
- Developing models
- Devoting oneself full-time
- Applying for a license/patent
- Forming a legal entity
- Hiring employees
- Saving money to invest

Whilst being an important contribution to the discussion about nascent activities, this study questions whether some of the activities listed are really activities. Take for example, “getting financial support”. This study would not consider getting financial support as an activity. Rather, “getting financial support” is a result or a milestone, which has been achieved. Moreover, the milestone has been achieved thanks to other kinds of activities. For example, a nascent entrepreneur may use “important others” to get access to a bank manager, that is, a nascent entrepreneur would use networking as a behavior to get financing. While seeing the bank manager, a nascent entrepreneur may deploy different behaviors to convince the bank manager to lend money to the pre-organization, such as acting as if the pre-organization was already in business (Gartner et al. 1992). Therefore, “getting financial support” is not an activity, but an important task to be achieved before a new organization has emerged. Some of these tasks are more crucial to the pre-organization than others, and can be labeled as milestones. In fact, Gartner and his colleagues (2003) introduce the concept of “new firm markers”, which represent various aspects of the four emergence properties. New firm markers are critical milestones to be achieved before a new organization is born.

Therefore, scholars have produced lists of important gestation activities. Some of these gestation activities are important milestones to be achieved, whereas some other gestation activities are part of more general behavior. As defined earlier, this study will use the concept of legitimating behaviors to describe a certain set of activities that nascent entrepreneurs carry out during the organization creation process, and as will be defined later (see Section 3.2.1.7), this study will use the term “new organization markers” to find empirical counterparts to the four emergence properties when operationalizing the dependent variable of this study.

### 1.5.3 Legitimacy

Legitimacy is one of the central notions in this study. In reality, pre-organizations need to overcome the liabilities of newness to become new organizations. According to Stinchcombe (1965), legitimacy is an antidote to the liability of newness. Echoing DiMaggio and Powel (1991), and especially Suchman (1995: 574), this study views **legitimacy as generalized perception or assumption that the actions of an organization are desirable, proper, or appropriate** within some socially constructed system of norms, values, beliefs, and definitions. As such, legitimacy is a conferred status and controlled by those outside the organization (Pfeffer & Salancik 1978: 194). Moreover, legitimacy is possessed objectively, yet created subjectively. Legitimacy is perception or assumption in the sense that it represents a reaction of outsiders to the pre-organization, the way they perceive it. The fact that legitimacy is created subjectively makes it difficult to measure. The fact that legitimacy is possessed objectively leaves room to speculate that the purpose and actions of a pre-organization were legitimate if it became a new organization.

Furthermore, as pointed out earlier, when using the notion legitimacy, the focus is on pragmatic legitimacy. Pragmatic legitimacy is based on the self-interests of the external audience. In its simplest form, pragmatic legitimacy can be seen as a sort of exchange-legitimacy, which derives from an organization's most immediate audiences. The immediate audiences of an organization are likely to become constituencies, which either support the organization's actions or not. (Aldrich & Fiol 1994; Suchman 1995)

#### **Clarifications and debatable issues**

As the above arguments suggest, legitimacy is an unobservable construct; it is a perception held by an organization's external audience. As such, to the extent that a sample size exceeds much beyond one, measuring the perceived legitimacy of the individual organizations in that sample in any rigorous manner is exceedingly difficult, if not impossible. Therefore, despite the centrality of the concept of legitimacy, this study does not aim to measure legitimacy directly. The central performance construct of this study, organizational emergence, conceptually refers to the successful acquisition of four emergence properties, rather than to the acquisition of legitimacy.

However, there is only a thin line separating organizational emergence from legitimacy as a performance construct. To develop the conceptual similarity between our dependent construct – organizational emergence – and legitimacy, we lean on Terreberry (1968). He defines that legitimacy is mediated by the exchange of other resources. Legitimacy is assessed by the existence of economic transactions between organizations. If organization A does business with X, and organization B is favorable in getting in economic transactions with X, then X is legitimated. In this study, performance is conceptually related to the four emergence properties. One of them, exchange, refers to economic transactions. Since legitimacy is mediated by the exchange of resources, according to Terreberry (1968), this study is, in fact, close to assessing legitimacy when measuring performance. Indeed, many studies view legitimacy retrospectively; i.e. the survival of an organization indicates that legitimacy is present (Zimmerman & Zeitz 2002).

This study follows the previous logic. Legitimacy is inferred through the actions of external audiences. While not measuring legitimacy acquisition or conformity to the demands of immediate audience directly, the transformation of pre-organizations into new organizations indicates that legitimacy is present. That is, as soon as a pre-organization becomes a new organization –i.e. as soon as the pre-organization has the four emergence properties– this transformation to a new organization is a sign that liabilities of newness have been overcome. In other words, a pre-organization is considered legitimate when it becomes a new organization in this study.

Even though the presence of legitimacy is indicated by the successful establishment of new organizations, this study does not label the central performance concept as the "legitimacy of the new organization". The problem with the previous definition by Terreberry (1968) is that economic transactions are not identical with legitimacy: there are legitimate organizations, which are not able to obtain adequate resources. Therefore, concentration on measuring legitimacy would lead us to a different kind of debate than the one about organizational emergence. Moreover, the choice to concentrate on "organizational emergence" is made in the belief that the concept would convey better the message that the study is interested in the becoming of new organizations and not their legitimacy as such.

#### 1.5.4 Legitimated elements

The concept legitimated elements comes from the institutional theory. For example, Zucker (1987) points out that organizations need to exhibit legitimated elements conformed by the social institutions in order to survive. With legitimated elements, Zucker (1987: 443) refers to such issues as standard operating procedures, professional certification, and state requirement. In this study, legitimated elements refer to **those characteristics and qualities of a pre-organization that conform to the demands of the most immediate audience of the pre-organization**. Legitimated elements can be related to the different dimensions of organization creation process, i.e. individual(s), organization, and environment. A pre-organization does not have the power to decide which characteristics or qualities would legitimate it. The decision is made by the immediate audience of the pre-organization.

#### Clarifications and debatable issues

What is important to notice is that legitimated elements could be labeled as initial founding conditions. This is because legitimated elements are characteristics of pre-organizations before they succeed in becoming new organizations. As will be seen in the review of new venture performance studies (see Section 2.5), initial founding conditions generally refer to issues such as organizational conditions and environmental circumstances (Schoonhoven, Eisenhardt & Lyman 1990), top-management team, technical strategy, and competitive environment (Eisenhardt & Schoonhoven 1990), the founders' track records, the characteristics of the founding team, target market, and technology strategy (Roure & Maidique 1986), and founding strategies (Freeser & Willard 1990), just to list some of them. The previous different dimensions of initial founding conditions also fall under the four dimensions of new organization creation process. For example, the "founder's track record" could be part of the individual dimension, and the "founding team" or the "top-management team" can be part of the organizational dimension of a new organization creation process. "Target market", on the other hand, could be part of the environment dimension, and so on.

Despite the wide use and scholarly acceptance of the concept of initial founding conditions, this study has chosen to use the concept of legitimated elements for three main reasons. First, the institutional theory promotes this concept. Since the institutional theory has a central part in this study, it is logical to use concepts derived from the theory. Second, at the time of conducting the data collection for empirical investigation, this study investigates certain characteristics of pre-organizations. For this study, it does not make a difference if the characteristics of a pre-organization have changed since the decision to start a new organization, or if they are still the same at the time of data collection. The “initial founding conditions” of the pre-organizations may have changed between the beginning of the process and the data collection point. This means that, in this study, legitimated elements do not necessarily equal to the “original” initial founding conditions. Third, since this study is not looking at new organizations but pre-organizations, the adoption of the concept of legitimated elements hopefully directs the attention of other scholars to this specific context, rather than assimilating the study with other initial founding conditions and new venture performance studies where the focus is on new organizations.

### 1.5.5 Organizational emergence

Pre-organization was defined as having at least one but no more than three emergence properties, whereas a new organization has all the four emergence properties. The definition of the dependent construct of this study, “organizational emergence”, is directly related to the difference between a pre-organization and a new organization. Each time a pre-organization acquires a new emergence property, it has achieved an important milestone. Once a pre-organization has all the four emergence properties, it has made the transition into a new organization. As such, the dependent construct is related to the achievement of critical milestones (e.g. Reynolds & Miller 1992; Hansen 2000; Hoang & Antoncic 2002). Conceptually, **organizational emergence is defined as the successful acquisition of all emergence properties, which result in a new organization.** To be qualified as a new organization, it needs to have four emergence properties, namely intention, resources, boundary and exchange.

### **Clarifications and debatable issues**

This study seeks to explain organizational emergence. In a sense, this study is trying to explain the performance of pre-organizations; the best performing pre-organizations succeed in making the transition from a pre-organization into a new organization. When is a new organization born? As pointed out in the opening chapter, entrepreneurship scholars consider that sales or a sales level is a good proxy for the birth of a new organization. That is, sales or a sales level determine when a new organization is born. However, studies have shown that sales can be the first key event of a pre-organization, while other important “new firm markers” (Gartner et al. 2003) have not been experienced. For example, Reynolds and Miller (1992) analyzed nascent activities through four key events that all new organizations have experienced, namely commitment, initial hiring, initial financing, and initial sales. The authors observed substantial variation in the length and patterns of the gestation process. Every possible sequence of events was reported. The most common first event experienced was a personal commitment. The second most common experienced event was sales. Hiring and financial support were equally likely to be among the first experienced events. Moreover, Gartner et al. (2003) speak about “new firm markers” which reflect different properties of new organizations. Pre-organizations need to acquire several critical milestones, i.e. new firm markers, before they become new organizations. As such, sales alone do not create new organizations.

### **1.5.6 Mechanism of organizational emergence**

Since the main objective of this study is to discover an explanatory mechanism to predict organizational emergence, there is a need to specify what is meant by the concept of mechanism.

In this study, ‘mechanism’ refers to a model/theory. Theory and model are generally used as synonymous concepts (e.g. Whetten 1989; Dubin 1978). A model is an answer to the question ‘why’: a model is about the connections behind the phenomenon, a story about why acts, events, structure, and thoughts occur. A model emphasizes the nature of causal relationships, identifying what comes first, as well as the timing of such events (Sutton &

Staw 1995). According to Whetten (1989), a complete theory/model must contain the following four elements:

- (1) Factors (variables, constructs, concepts) that logically should be considered as part of the explanation;
- (2) Relationships (and causalities) between these factors;
- (3) Underlying logic: the assumptions that justify the selection of factors and the proposed causal relationships;
- (4) The temporal and contextual factors that set the boundaries of generalizability.

Labovitz and Hagedor (1981) bring up the notion of *theoretical rationale*, which specifies how and why the variables and the relational statements are interrelated. In this study, a **mechanism answers the question “why”**: presents the key constructs, the relationships between the constructs, and the theoretical rationale to predict organizational emergence. The generalizability of a mechanism is bounded by the limitations.

#### **Clarifications and debatable issues**

A causality model must be a causal *chain*: no loop can exist in the model. A model that does not have loops is called recursive. As such, this study is interested in discovering a recursive model of organizational emergence.

Whetten (1989) does not explicitly state what the difference between a variable and a concept is. However, a concept is a broader and more abstract term than a variable, at least in the case where a variable is regarded as the operationalization of a specific concept (Bacharach 1989). This study will use two types of notions: constructs and manifest variables. Constructs are abstract expressions, and used to generate generalized theoretical models from theories. An equivalent term for construct is *latent variable*. The notion of latent variable will be discussed in the methodology chapter. When specifying the theoretical models into a research model, constructs are translated into *manifest variables*, i.e. measurable indicators are generated for each construct. For example, as will be seen later, the dependent construct of this study is organizational emergence, which is reflected in two manifest variables, namely the perception of the lead entrepreneur and a composite measure made of five new organization markers. Moreover, a construct that never appears

as a dependent variable, is called an *exogenous* construct. If a construct appears as a dependent variable, it is called an *endogenous* construct.

Furthermore, relationships can be described either through propositions or through hypotheses. Again, propositions are more general statements about the relationships between different constructs, whereas hypotheses refer to the relationships between different variables (e.g. Dubin 1978). Propositions are important from the point of view of making a theoretical contribution. Whilst the objective of this study is to formulate a mechanism for the prediction of organizational emergence, this study cannot put forward a mechanism intended to be applied to every pre-organizational context. Instead, while producing a mechanism as an objective of this study, an important part of the model will be propositions. The propositions can be used in future studies to test the generalizability of the findings of this study.

An important component of this discussion is related to the basic scientific position of the study. This study could be classified as belonging to a functionalist paradigm, which seeks to examine regularities and relationships that lead to generalizations and, ideally, universal principles (Gioia & Pitre 1990). In functionalism, theory generation generally takes place in a deductive manner, starting with reviews of existing literature and operating out of prior theories, which was done in this chapter. Indeed, this study seeks to discover a mechanism – regularities and relationships – to predict organizational emergence. Existing theories and research results are used to construct a research model. Yet, the ambition of this study is not to discover universal principles. In this study, we do not believe that a universal mechanism would exist to explain a social phenomenon like emergence of organizations, simply because the process varies across industries and times. Pre-organizations are a heterogeneous group and are not similar to each other. What we can do is to moderate our theoretical ambition and seek for midrange theories (Merton 1968; Pinder & Moore 1979).

As such, while aiming to discover a mechanism, due to a restrictive sample, an important part of the objective of this study is propositions. Once the research model has been empirically tested, and modified if needed, propositions for future research are put forward.



## 1.6 Outline of the Study

According to Hofer and Bygrave (1992), there are two phases in any good research. The first step is about theory building and the second one about testing.

In this study, the theory building steps are discussed in Chapters 1 to 3. More precisely, **Chapter 1** presents the problem statement, the rationale of the study, the research objective and questions, as well as defines the main constructs of this study. The first critical milestone of this study, the Task of conceptualizing, is achieved. **Chapter 2** presents a short review of empirical studies seemingly related to organizational emergence. The second important milestone for this study, the Task of reviewing, is achieved. **Chapter 3** starts by discussing the characteristics of organizational theories in general. Then, Section 3.1 presents the institutional theory and the resource dependence theory. General frameworks are put forward and an effort is made to integrate the two perspectives into a theoretical model. Moreover, Section 3.2 takes the theoretical model and specifies it into a research model. As such, a plausible mechanism of organizational emergence is proposed. The first and the second research questions are answered in this section. In addition, the third critical milestone of this study, the Task of modeling, is achieved.

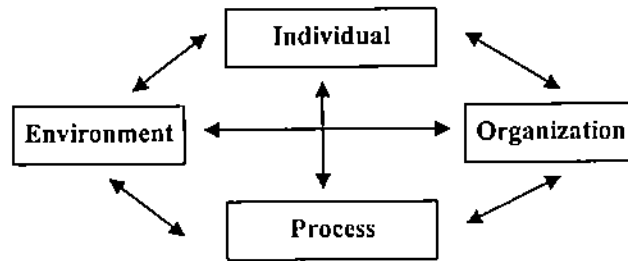
The testing part of the study is discussed through Chapters 4 and 6. More specifically, **Chapter 4** discusses the research design issues. The main variables are transformed into measures, a survey instrument designed, a sample located, and a plan for data collection laid out. Moreover, reliability and validity issues related to the measures are discussed. As such, the fourth critical milestone of this study, the Task of designing is achieved. **Chapter 5** presents the empirical findings of this study. First, pre-organizations and new organizations are compared in terms of number of dimensions. Second, the PLS estimation method is used to estimate the research model. The third research question is answered, and the fifth critical milestone of this study, the Task of exploring, is achieved. Finally, **Chapter 6** draws the conclusions, sets implications forth and puts forward theoretical propositions for future testing. As such, the fourth and the most important research question is answered, and the last critical milestone of this study, the Task of theorizing, is achieved.

## **2 EMPIRICAL STUDIES ON ORGANIZATIONAL EMERGENCE**

The second critical milestone of this study, the Task of reviewing, is achieved in this chapter, as some of the empirical research streams seemingly touching the phenomenon of organizational emergence are reviewed. A literature review is essential at this stage because it helps to elaborate the various possible relationships that might exist between, and impinge upon, the organizational emergence phenomenon (i.e. Gill & Johnson 1991). A literature review also provides a framework for establishing the importance of the study as well as a benchmark for comparing the results of the study with other findings (Creswell 2003). When making a review of specific literature, one can, for example, do a historical review, which traces the development patterns of an issue over time. A theoretical review, on the other hand, compares how different theories address an issue. Here, the main point is not seeing how different theories see the phenomenon, but what we know about the phenomenon thanks to empirical research. A theoretical review is made in Chapter 3, in which the institutional theory and the resource dependence theory are reviewed. Another possibility is to make an integrative review, which summarizes broad themes in the literature known at a point of time (Cooper 1984). An integrative review about organizational emergence will be done next.

For the integrative review, several important sub-fields or research traditions in management and organizational studies are reviewed. A few of the most promising research traditions are reviewed to see what kind of empirical evidence has been produced over the years. The review of empirical studies will help us to position this study against the existing literature.

The review will discuss some of the empirical studies that seemingly touch upon the organization creation phenomenon. According to the seminal work by Gartner (1985), it is not possible to understand the organization creation process unless the four dimensions of organization creation are investigated, and an attempt is made to discover how constructs interact with each other. Figure 3 presents the framework proposed by Gartner.



**Figure 3.** The four dimensions of organization creation by Gartner (1985).

According to Gartner, the organization emergence process involves individuals and different activities undertaken by those individuals, takes place under specific environmental conditions and results in a new organization. The above framework takes into account different questions related to the organization creation: who (individual) is doing what (organization), how (process), and where (environment). While being overly general, the framework of Gartner will be used as a tool to evaluate existing studies to see how well the different dimensions of organization creation have been taken into account. Moreover, attention is also paid to on what of the following phases of organizational creation process the different research streams concentrate: conception, gestation, infancy, or adolescence (Reynolds 1994).

## 2.1 Organizational life cycle studies

Since this study concentrates on pre-organizations, it is natural that we look first into the organizational studies to see how the topic has been treated. Most of the organizational studies are related to the functioning of existing organizations. In organizational studies, there is a research stream that touches upon the issue of organizational emergence, namely life cycle studies.

Many organizational scholars have been interested in understanding the organization creation process by trying to identify the different stages along an organization's life cycle. The intellectual origins of the life cycle models are in a biological metaphor. Like a living organism, an organization is thought to have a life cycle. The basic assumptions of this

biological metaphor is that the development of an organization is sequential in nature, the sequences occur as a hierarchical progression that is not easily reversed, and involve a broad range of life stage-specific organizational activities and structures (Quinn & Cameron 1983).

Since the adoption of the biological metaphor in the early 60's, management scholars have proposed different life cycle models including a varying number of stages (e.g. McGuire 1963; Christensen & Scott 1964; Steinmetz 1969). In organization studies, the use of the life cycle concept was popularized by the work of Greiner (1972). Greiner's model consists of five different stages of growth where each stage of an organization's life is characterized by a particular managerial style and a set of management problems. As the key problems change, so should the design of an organization's configuration. Following this path, organization scholars have proposed different organizational life cycle models (see Levie & Hay (1998) for a comprehensive review).

As pointed out by Churchill and Lewis (1983), the models developed by organization theorists were designed to describe how business organizations make the transition from small to large. Therefore, they do not capture the process by which new firms come into existence. To fill the void, entrepreneurship scholars have set to develop life cycle models of the formation and growth of new ventures (e.g. Osborne & Dvorak 1985; Kazanjian 1988). For example, Kazanjian (1988) articulated a four-stage model of technology-based organizations' birth and growth. His model comprises four stages: Conception and Development, Commercialization, Growth, and Stability. The first stage, "Conception and Development", refers to the period prior to the creation of an organization (incorporation or gaining of a major source of initial financial backing). At this stage, the primary focus is on the invention and development of a product or technology. Once a technology-based pre-organization secures financial backing, the focus shifts towards developing the product or technology for its commercialization. One of the main issues at the Commercialization stage is to learn how to make the product work well and how to produce it. It is toward the end of this stage that a pre-organization's product is publicly announced or first made available for sale. When the product is technically feasible and achieves market acceptance, a period of high growth (in both sales and number of employees) will typically follow. At

the Growth stage, the main challenge is to produce, sell, and to distribute the products in volume. As the markets mature, an organization enters the Stability stage where the main challenge is to maintain the growth momentum and the market position.

As a criticism against life cycle models, it has been pointed out that organisms have a time-consistent pattern of development, but organizations do not (McGuire 1963). According to Levie and Hay (1998), all the recent large-scale empirical evidence indicates that organizations do not develop according to a pre-set sequence of stages. In addition, Reynolds and Miller (1992) did not find support for the biological theory of organizational birth and development in their study of nascent entrepreneurs and their gestation activities. Moreover, even though life cycle models are usable as heuristic devices, they do not explain what causes a venture to move from one stage to another. That is, the determinants of success are left out of the description. Life cycle models are generally descriptive, and concentrate on the organization dimension of organization creation.

While it can be argued that life cycle models tend to be too linear and sequential, the importance of the life cycle metaphor also comes from the fact that the problems and challenges change during the life cycle of an organization. An organization at the conception stage does not have the same priorities as an organization at the maturity stage. It is relevant and useful to think of the development of an organization in terms of distinctive stages. Because the challenges and problems of organizations vary at different phases of the process, organizational researchers have also proposed that effectiveness criteria should change with the dominant problems. For example, Cameron and Whetten (1981) and Quinn and Cameron (1983) have observed that organizational effectiveness criteria change along the life cycle of the organization. Cameron and Whetten also recalled that several earlier organizational researchers (e.g. Greiner 1972; Kaufman 1975) had acknowledged that effectiveness criteria used by organizational members change over time. For example, Greiner suggested that the decline of an organization decline begins when the members focus on performance criteria that were relevant in a past stage of the organization's development. As such, life cycle studies have demonstrated that it seems reasonable to expect that predicting organizational emergence would require a different equation than the prediction of, for example, new venture performance at the growth stage.

## 2.2 Entrepreneurial events

The entrepreneurship research field is famous for its quest for explanation at the individual level. The entrepreneurship field strongly believes that an organization is the extension of its founder (Chandler & Jansen 1992; Dyke, Fischer & Reuber 1992; Peteraf & Shanley 1997). Indeed, entrepreneurship scholars persist that an individual level of analysis is a legitimate point of departure because the entrepreneur is the one who makes the decision to start a business (e.g. Naffziger 1995). Economic circumstances, carrying capacities, role models, social networks, and public aids are important for pre-organizations, but none of these creates a new organization. In other words, no confluence of contextual circumstances can by itself create a new organization (Herron & Sapienza 1992): people create organizations (Reynolds 2000). The bias towards successful individuals has created a tremendous amount of research in entrepreneurship. The vast research on entrepreneurial individuals is divided into three groups of research streams.

First, in some of the studies, the essential point is that an individual has to *identify himself as an entrepreneur*. The individual goes through some kind of mental activity or internal struggle before such an identity is formed. For example, according to Collins and Moore (1964), the organization creation process starts with the idea of going in business. The would-be-entrepreneur has to shatter his previous life patterns. That is, an individual goes through an internal psychodynamic complex. Furthermore, an individual has problems fitting into conventional role structures in society and organizations. Through self-realization, the individual finds his place in society, and decides to create an organization. Related to this, Kets de Vries (1996) speaks about a psychodynamic mode, which holds that the reasons for legitimating behaviors can generally be found in the childhood of the individual: today's behavior tries to compensate for some needs that were lacking in childhood. The emphasis on the self-realization process is shared by Schendel and Hofer (1979) and Westley and Mintzberg (1989), who stress that an entrepreneurial mind starts the organization creation process. Some authors also speak about an 'anticipatory socialization' process that precedes the cognitive choice to become an entrepreneur (Starr & Fondas 1992).

Second, following the tradition started by Collins and Moore, Martin (1984) also concentrates on the individual and his decision to become an entrepreneur. Martin's model has two stages, namely the "Free-Choice Period" and the "Identification of Venture Opportunity", which lead to new venture start-up. Clearly, he wants to make a separation between a self-realization event and an opportunity recognition event. Also according to Moore (1986), it is important to distinguish between the development of an idea and the entrepreneurial event, which succeeds the former. As such, in addition to the identification as an entrepreneur, an individual *needs to search for a novel idea*. That is, an opportunity needs to be discovered. This approach is more or less based on the definition of entrepreneurship put forward by Kirzner (1973). His definition of entrepreneurship emphasizes the alertness of individuals. Individuals perceive opportunities in the market and base their action on superior information: the entrepreneur is a broker and an organizer between supply and demand. There are numerous studies made on opportunity recognition where researchers look at cognitive heuristics and biases as an explanation for entrepreneurial behavior (e.g. Long & McMullan 1984; Kaish & Gilad 1991; Hansen & Allen 1992; Baron 2000; Puhakka 2002). Several studies have shown that entrepreneurs view some situations as opportunities, whereas non-entrepreneurial persons perceive only a little potential (e.g. Corman, Perles & Vancini 1988; Palich & Bagby 1995). For example, Kaish and Gilad (1991) studied the information seeking behavior of entrepreneurs. They observed that entrepreneurs spent significantly more time searching for information in their off-hours and through nonverbal scanning. Entrepreneurs employed different sources than executives and paid special attention to risk cues about new opportunities. Moreover, Palich and Bagby (1995) tried to explain the differences in how entrepreneurs and non-entrepreneurs categorize information, especially related to risk. As a result, the entrepreneurs did not perceive themselves as being any more predisposed to risks than the non-entrepreneurs are. However, the entrepreneurs categorized an equivocal business scenario significantly more positively than others did. That is, the entrepreneurs viewed some situations as opportunities even though others perceived them to have little potential [see also Corman, Perles & Vancini (1988) for similar results].

Third, some authors point that the discovery of an opportunity is a necessary condition for entrepreneurship, but not sufficient (Shane & Venkataraman 2000). Therefore, after the

self-identification and the discovery of the opportunity, an *entrepreneur needs to make decision whether to continue to exploit the opportunity*. This has led to numerous models, which concentrate on the decision-making process of the entrepreneurs (e.g. Campbell 1992; Learned 1992; Minniti & Bygrave 1999). The dependent variable of these studies is related to an individual's decision-making: to start a business or not. For example, the Decision Theory Model of Campbell (1992) echoes Casson (1982) by offering an economic explanation to an individual's choice between entrepreneurship and employment. The model put forward by Katz (1992), on the other hand, looks at psychological, sociological, and cognitive factors to explain individuals' employment status choices. The model of Learned (1992) suggests that there are three dimensions to the founding process, which culminate in a decision to found, or not: propensity to found, intention to found, and sense-making.

Some scholars combine the previous three centers of interests. For example, the "Venture initiation model" of Herron and Sapienza (1992) combines all the three events (identification, opportunity search, and decision-making) into a single model. At the end of the process, the individual either decides to launch the organization or not.

The three events of the organization creation process – self-identification, opportunity recognition, decision-making – concentrate on the individual dimension or organization creation. Self-identification, opportunity recognition, and decision-making are, in a narrow sense, internal psychological events of individuals. The "dependent variable" of these studies is the decision to go or not to go for organization creation from the point of view of an individual.

### **2.3 Environmental school: Population ecology and industrial economics**

The environmental school starts with the assumption that the environment is the origin of company births, growths, declines, and exists. Two different research perspectives are shortly discussed here, namely population ecology and industrial economics.



**Population ecology and founding rates**

The population ecology approach finds its origin in the ideas of Hannan and Freeman (1977) and Aldrich (1979). The approach uses a metaphor from biology to study populations of organizations. The central focus is on explaining why certain types of populations of organizations exist and why some other forms disappear. To explain the dynamics of any population of organizations, the three central concepts used are variation, selection, and retention. The variation process produces alternative solutions to existing forms of organizations. The organizational form is defined as the core properties that make a set of organizations ecologically similar (Hannan & Carroll 1995). The environmental selection process ensures the survival of some new variations. Selection results from the degree of fit between organizations and their environments. As soon as a new alternative solution is shown to be successful, imitators appear and the variation is retained inside a population.

Moreover, another important concept of population ecology is struggle. Underlying environmental selection pressure and the search for effective variations is the scarcity of resources (Aldrich 1999). Resources are not evenly distributed, and organizations need to compete to get an access to them. A population of organizations occupies a niche, which consists of social, economic, and political conditions that can sustain the functioning of organizations that embody a particular form (Hannan & Carroll 1995). Because of resource scarcity, each niche has a carrying capacity. That is, only a limited number of organizations can exist in a niche. The driving force of transformation is environmental selection, not organizational adaptation. Organizations are constrained by their structural inertia, which prohibits them to adapt to changing environmental conditions.

Population ecology scholars have built sophisticated models of population dynamics, using large data sets covering long spans of time that yield few details about particular organizations. By focusing on aggregates of organizations, population ecologists have downplayed the role of individual actors and obtained only limited information on the internal structural features of the organizations in a population. Since the focus is on demographics of populations, such as patterns of founding, transformations, and disbanding, the population ecology approach cannot explain the performance of individual

organizations (Aldrich 1999). In fact, the survival or the success of any particular new organization is irrelevant to the overall success of the industry (Van de Ven, Hudson & Schroeder 1984).

Aldrich (1990) attempted to introduce the population ecology approach into study of organizational founding. According to him, founding rates are constrained by death rates in two ways. First, high death rates may lead to subsequent high birth rates as dissolutions create resource openings for new organizations. Second, a high rate of dissolutions may also work as a negative psychological signal for prospecting entrepreneurs. That is, potential founders may be frightened by relative high death rates. These two ecological hypotheses have received mixed support in empirical research. The negative effect seems to get more empirical support, whereas Delacroix and Carroll (1983) observed, in fact, that prior deaths and foundings had a curvilinear relationship.

Ecology scholars have also looked for a curvilinear relationship between prior and subsequent foundings. Prior and subsequent foundings have a hypothesized relationship in the sense that entrepreneurs learn from their environments by imitating what others have done. Resource scarcity limits the number of subsequent foundings. This hypothesis has received support in empirical research (Delacroix & Carroll 1983; Hannan & Freeman 1987; Staber 1989). In addition, population density can have consequences on founding rates. Several factors increase foundings, such as rising legitimacy and the institutionalization of an organizational form, the increasing availability of knowledge and skills necessary for founding, and the possibility of collective action, whereas diminishing returns and smaller potential gains realized from foundings as competitors become more numerous can have a negative influence on foundings.

### **Industrial economics and entry strategies**

Like in the population ecology approach, industrial economics (Mason 1939; Bain 1968; Porter 1981) uses a macro-level analysis and leans on deterministic ideas about reality. It gives a prominent role to the environment, focusing on different aspects of the environment and their influence on the firm's performance. The difference is that instead of focusing on populations of organizations and resource scarcity per se, industrial economics stresses the

structural characteristics of industries to explain why some organizations can earn above average rents compared to other organizations. That is, the competitive advantage of an organization derives from the match between its strategies and the structural features of an industry. Industries have five structural characteristics: competition inside the industry, barriers to entry, the threat of substitutes, the bargaining power of suppliers, and the bargaining power of customers.

The structure of an industry is economically and technically determined. Industry structures are independent from actions of individual organizations, and have a constraining role for pre-organizations. As such, industry structure seems to have relevance when investigating organizational performances. Kunkel (1991) reviewed major theoretical and empirical works in the fields of industrial organization, strategic management, and entrepreneurship to determine the relative importance of 50 industry structure variables. He determined that the most important industry structure variables are: (1) life cycle stage (related to growth rate); (2) industry concentration; (3) entry barriers; (4) product differentiation. The importance of the life cycle stage was confirmed by Robinson (1998). He made an interesting comparison between industry structure and eight alternative measures of performance. He observed that industry concentration, entry barriers, and product differentiation did not have statistically significant relationships with any of the eight alternative measures of performance. Instead, the stage of the life cycle of the industry entered was the most important determinant of performance. Through the concept of "industry life cycle", scholars describe an industry in general terms, related to growth versus stability or maturity (Keats & Bracker 1988). Yet, empirical results are somewhat mixed. For example, Robinson (1998) observed that new organizations where industries entered in the introductory stage of their life cycles, achieved a superior level of performance. On the other hand, Eisenhardt and Schoonhoven (1990) observed that emerging markets were not associated with growth performance. Instead, growth performance was achieved best when the markets were in the growth stage.

Industrial organizational theory predicts that certain structural characteristics such as scale, capital, and product differentiation act as barriers to entry into an industry. Such barriers may be viewed as something requiring new entrants to pay a fee not borne by those already

in the industry, and therefore allow incumbents to enjoy above average profitability (Bain 1956; Caves & Porter 1977; Porter 1998). McDougall et al. (1992) observed that new organizations were able to successfully enter and compete in a high-barrier industry by employing strategies emphasizing superior product quality and higher customer service. Alternatively, when entry barriers were low, strong marketing skills offered the best advantages.

Industrial economics laid the foundations for the work of strategy scholars, too. Firms need to study the structural features of an industry before making the entry. In order to succeed in entering a new industry, the industry and the strategy should fit (McDougall & Robinson 1988). Strategy scholars have conceptualized many entry strategies that new firms can deploy to occupy ideal position in the industry (e.g. Schoenecker et al. 1998). Moreover, small business research has also deployed these two notions largely when studying the performance of young/small organizations (e.g. McDougall et al. 1990; Durand & Coeurderoy 2001). Strategy and entrepreneurship scholars have integrated concepts from industrial economics into the study of new venture performance in the hope to improve the explanatory power of performance models (Carter, Stearns, Reynolds & Miller 1994; Sapienza & Grimm 1997). For example, Sandberg and Hofer (1987) observed that industry structure, together with strategy, had an impact on performance. In a similar vein, McDougall (1987), Freeser and Willard (1990), and Keeley and Roure (1990) found proof for this linkage. McDougall, Robinson and DeNisi (1992) found that new venture strategy and industry structure, as well as their interaction, are essential for understanding performance.

There is some evidence to support the claim that industry structure has no impact on the performance of pre-organizations. For example, as pointed out earlier, Eisenhardt and Schoonhoven (1990) studied U.S. semiconductor new ventures. The authors observed that the effects of the founding environment are negligible in the first two years of life. The effects of the founding environment become significant in the third year of life and then grow, not fade, with time. In other words, industry structure would not have an impact on the performance of pre-organizations. This is somewhat in contradiction with the basic thesis of industrial economics, but receives some support from other scholars too. For

example, Carter et al. (1996) found no industry effect among nascent entrepreneurs. In addition, Delmar and Shane (2004: 388) propose that competition from established organizations may not influence the survival of pre-organizations until it has created a product demanded by customers, and established organizations have responded to this product.

## **2.4 Networking and gestation activities**

During the last two decades, studies in entrepreneurship seem to shift their focus from entrepreneurial individuals to process issues. As already pointed out, for example, Bygrave and Hofer (1991), Gartner, Bird, and Starr (1992), and Gartner (1988) all have associated entrepreneurship with organization creation, organizing activities, or with the emergence metaphor. Earlier, Cole (1959), Harbison and Myers (1959), and Collins and Moore (1964) made this connection. According to Bygrave and Hofer (1991), an entrepreneurship process involves all the functions, activities and actions associated with the perception of opportunities and the creation of an organization based on those opportunities. Indeed, organizational scholars have been interested in entrepreneurship processes since the mid 80's (e.g. Shapero 1984; Gartner 1985; Van de Ven 1992; Naffziger 1995; Steyart 1998). Under this stream of research, two traditions are discussed, namely networking and gestation activities studies.

### **Networking studies**

Networking has become an important concept of organizational scholars. Network-based research emerged some 15 years ago (e.g. Bird 1985; Johannisson 1987, 1988) within the field of entrepreneurship. Hoang and Antoncic (2002) reviewed the literature related to networking and were able to identify over 70 papers on this topic.

The networking view has been contributed to by diverse scholars, such as Bird (1985), Aldrich & Zimmer (1986), Johannisson (1987, 1988), and, more recently, Larson and Starr (1993). There are several studies that focus on personal networks as a dependent variable, i.e. how personal networks are created, and how they change during the organization

creation process. Yet, the following discussion concentrates only on issues where the personal network is an independent variable. That is, a personal network is a variable that affects the outcome of the organization creation process.

Aldrich & Zimmer (1986) argue that an entrepreneur is embedded in a social network that plays a critical role in the organization creation process. Aldrich, Rosen, and Woodward (1987) are ready to claim that entrepreneurs who lack extensive interpersonal networks are less likely to create new organizations. Johannisson (1987, 1988) promotes the idea of the entrepreneur as an intermediary in a network. In general, networking seems to be an important phenomenon for high-tech new organizations. At least, Johannisson (1998) observed that knowledge-based entrepreneurs were more concerned with networking than traditional entrepreneurs were.

As part of the central concepts of networking, Burt (1992) introduced the notion of structural holes. When a person is the bridge between two unconnected actors, he is occupying a structural hole. Structural holes provide, for example, access to novel information. If there are no structural holes in the entrepreneur's network, i.e. everyone is connected to everyone, information circulates freely between all the members of the network. If there are structural holes in the network, information does not reach everyone and becomes scarce. Related to the same phenomenon, Granovetter (1973) introduces the notions of weak and strong ties, which are derived from direct and indirect linkages. The intensity of contacts defines whether a contact is weak or strong. The more intense the relationship, the stronger the tie. Weak ties are generally associated with access to new information and ideas.

Empirical studies on networks seem to confirm a linkage between the key constructs of networking and the outcomes of the organization creation process. For example, entrepreneurs who lack extensive interpersonal networks are less likely to create new ventures (Aldrich, Rosen & Woodward 1987). Moreover, weak ties seem to be linked to opportunity recognition. Singh et al. (1999) observed that in the information technology industry, nascent entrepreneurs with weak ties reported a higher number of opportunities identified within 12 months' period than those with fewer weak ties. Strong ties, on the

other hand, seem to be associated with other measures of success. Honig and Davidsson (2000) observed that strong ties appear to influence the persistence of nascent entrepreneurs to continue in their start-up activities. In addition, Bruderl and Preisendorfer (1998) supported this finding by observing that strong ties were linked to the survival of new organizations. Weak ties allow nascent entrepreneurs to get access to heterogeneous information, whereas strong ties do not provide as rich information. Survival, on the other hand, may be a simple question of mental and moral support from close friends and associates that cannot be acquired from weak ties.

Network structure does not predict attitudes or behaviors directly. Instead, network structure predicts similarity between attitudes and behaviors (Burt 1992). For example, Lazarsfeld, Berelson, and Gaudet (1944) observed how an individual's vote was associated with party affiliations of friends. This is to say, that if I know to which party your close friends belong, I know for whom you are going to vote. To translate this one for the present purpose, resources available to any nascent entrepreneur are contingent on the resources available to individuals socially proximate to the nascent entrepreneur (e.g. Burt 1992). Competition is a matter of relationships, not of attributes. In addition, the size of personal networks has been related to superior performance. For example, Hansen (1991) observed that those individuals who succeeded in creating high-growth new organizations had larger networks than those who did not.

Recently, organizational scholars have started to talk about social capital (e.g. Nahapiet & Ghoshal 1988; Tsai & Ghoshal 1998; Tsai 2001; Adler & Kwon 2002). Nahapiet and Ghoshal (1998: 243) define social capital as: "*...the sum of the actual and potential resources embedded within, available through, and derived from a network of relationships possessed by an individual or a social unit*". The definition stresses that social capital is not only limited to the structure of the relationship network, but also includes the actual and the potential resources that can be accessed through the social contacts of the networks (e.g. Bourdieu 1986, 1994; Putnam 1995). The concept has recently been applied in a wide range of organizational studies dealing with the social context of intra- and inter-organizational relationships (Burt 1992; Nahapiet & Ghoshal 1998).

Yet, the size of a personal network does not create an organization. Actions and behavior do. Moreover, social capital is not necessarily a fixed stock. Instead, nascent entrepreneurs usually find ways to grow the stock of social capital. For example, Hansen (2000) observed that those nascent entrepreneurs who succeeded in creating a new organization were able to accrue additional social capital along the way. Therefore, in addition to the stock of social capital, it is necessary to gain an understanding of how social capital is built. Larson and Starr (1993) made a valuable contribution to this direction. They conceptualized a network model of organization formation. The model describes a process by which the essential relationships between nascent entrepreneurs and resource providers evolve along the organization creation process.

### **Gestation activities**

Gartner et al. (1992) point out that a large part of the problem with talking about the nature of organizational emergence is the failure to recognize the variation in how and when cycles of interactions are assembled. Studies on nascent entrepreneurs have the potential to advance organizational theories and our understanding on how pre-organizations make the transition into new organizations (e.g. Honig 2001). Nascent entrepreneurs are individuals who were identified as taking steps to found a new business but who have not yet succeeded in making the transition into new business ownership (Carter et al. 1996). In order to create a new organization, nascent entrepreneurs engage themselves into different gestation activities, such as organizing a team, business plan preparation, investment of own money, acquisition of external funding, model development, patent application, money saving, etc.

In different industrialized countries, the Panel Study of Entrepreneurial Dynamics research project (Reynolds 2000) concentrates on nascent entrepreneurs and their gestation activities. The PSED project has generated a database about nascent entrepreneurs, which, in turn, has started to produce studies related to nascent activities (e.g. Carter, Gartner, Shaver & Gatewood 2002; Davidsson & Honig 2003; Delmar & Shane 2004; Gartner et al. 2003; Manolova, Brush & Edelman 2002; Samuelsson 2002, 2004).



Reynolds and Miller (1992) were one of the first ones to study nascent entrepreneurs and their gestation activities. Their analysis of four key events of the gestation process (commitment, initial hiring, initial financing, initial sales) indicated substantial variation in the length and patterns of the gestation process. Every possible sequence of events was reported. The most common first event experienced was a personal commitment. The second most common experienced event was sales. Hiring and financial support were equally likely to be among the first experienced events. According to the authors, the most important finding was the lack of support to the biological theory of gestation, i.e. life cycle models. There was substantial difference in the number of events reported, extreme diversity in the order of events, and substantial variation in the length of the gestation process.

The previous work was continued by Carter and her colleagues (1996). Among nascent entrepreneurs, the authors identified three groups of individuals. First, successful individuals – the ones who were able to start a new business – were more aggressive in making their business real, and seemed to act with a greater level of intensity. Second, another group of individuals engaged in a similar pattern of behavior as the successful ones, but made the decision not to pursue the opportunity at some point of the venturing process. In other words, they gave up after trying hard. A third group of individuals was still trying to create their organization. According to the authors, these individuals did not seem to put enough effort into the start-up process in order to find out whether they should start the business or give up. The study was able to demonstrate that the behaviors of nascent entrepreneurs who started a new organization successfully can be identified and differentiated from the behaviors of nascent entrepreneurs who failed.

The above findings seem to confirm the importance of the “acting as if” principle (e.g. Gartner et al. 1992) in the organization creation process. According to the acting-as-if principle, nascent entrepreneurs should undertake activities that make their business tangible to others. Rather than preparing business plans or saving money for future investments, nascent entrepreneurs should, among other things, be looking for and buying facilities and equipment to legitimize the pre-organization. Delmar and Shane (2004) also concentrated on the legitimacy generating activities of nascent entrepreneurs. They

observed that legitimacy generating activities (i.e. establishing a legal entity and completing a business plan) had a positive impact on the early survival of new organizations. Moreover, Delmar and Shane (2004: 406) also observed that completing a business plan and establishing a legal entity early in the life of a new venture are advantageous to new venture because these activities facilitate the transition to other organizing activities.

Davidsson and Honig (2003) observed that success in the exploitation process of organization creation was affected only by one indicator of their social capital construct, namely being a member of a business network. Furthermore, the authors observed that the effects of human capital indicators were weaker and much less consistent in regards of success in the exploitation process. In fact, some of the indicators of human capital (i.e. formal education and previous start-up experience) helped to predict who among a cross-section of the general Swedish population would attempt to engage in any nascent activities. That is, this observation about the role of formal education and previous start-up experience explained why someone would decide to engage him or herself in entrepreneurial ventures. Again, this study about nascent activities seems to confirm the observation made by life cycle studies: predicting organizational emergence would require a different equation than the prediction of, for example, a decision to engage oneself in entrepreneurship process in the conception stage.

## **2.5 New venture performance**

New venture performance studies are keen to identify predictors of successful ventures. Therefore, one could assume that they could shed some light on the predictors of new organizations.

What explains a new venture's performance, i.e. what are the determinants of performance? Some of the performance models look at a venture's internal factors as an explanation to superior performance. This line of performance research has been able to produce lists of firm-internal success factors, such as the various aspects of the founder, management team and the product. In this line of research, the level of analysis is in the organization or in the

individual. When performance is analyzed at the level of an individual, the focus is on the founder's characteristics, such as need for achievement, internal locus of control, risk taking propensity, etc. For example, Chandler and Jansen (1992) showed that the founder's self-assessed competencies were linked to superior venture performance, when performance was measured with a two-dimensional measure (profitability and growth), and the sample consisted of a variety of manufacturing (ceramic pottery, upholstered furniture, animal kennels, medical devices, electronic instruments etc.) and service firms (restaurants, plumbing, rest homes, security systems).

When the level of analysis is the organization, researchers try to find the right combination of organizational characteristics that could explain the performance. For example, the focus can be on the characteristics of the founding team or the management team. Roure and Maidique (1986) linked prefunding factors to high-technology venture success. The prefunding factors included the joint working experience of the management team, the completeness of the management team, the function-specific experience of the management team members, and previous experience from high-growth firms in the same industry. Successful ventures targeted also markets that had a higher buyer concentration. Bollinger et al. (1983) found in their review that the most successful technology-based ventures were started by greater management teams, and more technology had been transferred from incubating organization. Moreover, the focus can also be on the structural features of ventures, like the centralization or formalization of decision-making (e.g. Kazanjian & Drazin 1990). Earlier, Cooper and Bruno (1977) studied the survival of 250 technological firms. They observed that the most successful organizations were founded in teams, and had one or more founders with prior experience in the markets or technologies they addressed. In addition, entrepreneurs with prior experience in "large" organizations were more likely to be successful.

The study by Roure and Maidique (1986) contributes to our understanding about the initial founding conditions and subsequent performance of new organizations at the growth stage of the venturing process. The authors concentrated on prefunding factors influencing the success of high-tech new organizations. A successful organization was defined as a firm that has been incorporated for more than three years, has reached a sales level of over 20

million USD, and has achieved after-tax profits greater than 5 per cent of sales. The authors observed a linkage between the subsequent performance of new organizations and the founders' records of accomplishment, the characteristics of the founding team, the target market, and the technology strategy. The results seem to support the idea that initial founding conditions have a long-lasting impact on the development of new organizations.

A study made by Feeser and Willard (1990) is a good example of studies where the authors speak about founding conditions and new organizations, and yet concentrate on publicly traded companies. The authors studied Inc. 100 companies, that is, fastest growing companies, which have witnessed a percentage increase in net sales over a 5-year period, and which are publicly traded. The authors compared the founding strategies of a group of organizations in the computer industry that had grown very rapidly with those of a group of similar organizations with much less vigorous growth. Founding strategies refer to the characteristics and experiences of the entrepreneurs as well as to the technologies regarding markets, technologies and competitive postures pursued by the firms. Performance was defined as the compound rate of growth of sales revenues. The authors found support for the experience in the same product/market, the size of the founding team, the geographic extent of market coverage, and the stability of the initial product focus factors.

In new venture performance research, the researchers have started with the assumption that an organization's internal characteristics or the characteristics of the founder could explain new venture performance. However, the results of this stream have not provided conclusive evidence on this linkage (Cooper & Gascon 1992). To improve the explanatory power of the performance theories, researchers have been trying to integrate concepts from strategic management and industrial economics into models of new venture performance (Carter, Stearns, Reynolds & Miller 1994; Sapienza & Grimm 1997). For example, Sandberg and Hofer (1987) have developed a model of new venture performance that focused on the entrepreneur (E), the strategy (S), and the industry structure (IS). The results of their study did not support the importance of the entrepreneur's biographical background, instead the strategy and the industry structure did have an impact on performance. In a similar vein, McDougall (1987), Freeser and Willard (1990), and Keeley and Roure (1990) have shown the importance of the strategy and the industry structure on performance. Yet, Herron

(1990) provided empirical evidence of the importance of the entrepreneur. Eisenhardt and Schoonhoven 1990 included the characteristics of the founding team in the Sandberg and Hofer's model, and measured performance (sales growth) in the semiconductor industry. The results indicate a significant interaction effect between the founding top-management team and the market stage on performance. McDougal, Robinson and DeNisi (1992) studied maximum eight-year-old ventures in the information processing industry. They found that new venture strategy and industry structure, as well as their interaction, are essentials for understanding performance, whereas the origin of the venture is of secondary importance.

Schoonhoven and her colleagues (1990) made an interesting study on the early performance of new organizations in the U.S. semiconductor industry. They tried to identify founding conditions (organizational conditions and environmental circumstances) that influence how long it takes new organizations to ship their first products for revenues. They found support for technology innovation, organization structure, financial resources, and competition. They did not observe a linkage between performance and founders' experience in the industry, start-up experience, or joint work experience.

The previous findings about performance determinants do not hold any more when we change the performance indicator. Eisenhardt and Schoonhoven (1990) used the same sample of the U.S. semiconductor organizations as Schoonhoven et al (1990). This time, they tried to link organizational growth with founding conditions, including the top-management team, technical strategy, and competitive environment. Organizational growth was defined in terms of sales growth. The oldest ventures in their sample were 10 years old, and the youngest 3 years, respectively. The authors found support for the growth stage of markets and the team members' joint work experience. The authors also used successive regression to link the founding conditions with sales in each of the first six years of life. By using this analytical technique, the authors were able to observe how relationships between founding conditions and growth changed with time. Technological innovation has an early impact on sales but then decays in the course of time. The top-management team has a significant impact on sales through the whole period of the study. Most importantly, the

effects of the founding environment are negligible in the first two years of life of a new venture.

Cooper (1993) presented a conceptual article in which he reviewed the current state of new venture performance studies. Even though he did not contribute to new venture performance studies with empirical work in his article, he proposed an interesting framework for the analysis of new venture performance. The framework consists of four sets of constructs that can be studied during the organization creation process and that have an effect on the performance of new ventures: the entrepreneur's characteristics, founding processes, environmental conditions, and initial firm attributes (see Figure 6). These are the same dimensions of organization creation that Gartner (1985) presented earlier as the necessary dimensions for the understanding of the organization creation process. The framework of Cooper goes a bit further than the one of Gartner by proposing a causal chain between different constructs and relates them to a dependent construct indirectly and directly. Later, the framework of Cooper (1993) will be the guiding line when the institutional theory, the resource dependence theory and the respective constructs from the two theories are integrated to build a theoretical model of organizational emergence.

## **2.6 Summary and discussion**

This section was started with the presentation of the framework by Gartner (1985). The framework described four dimensions of organization creation process (individual, organization, process, and environment) that need to be investigated if we want to understand organizational emergence. Some central research traditions of organizational and entrepreneurship fields, which had the potential to concentrate on pre- and new organizations, were reviewed. The review concentrated mostly on empirical studies. The aim of the review was not to capture all the richness of different research tradition. This kind of complete review would not have been possible to do, nor necessary. The purpose of the review was to form an integrative view of the phenomenon and to get a broad understanding where we are now in regards of knowledge about organizational emergence. The framework of Cooper (1993) was found to integrate the whole discussion and further

developed the framework of Gartner (1985), and thus was adopted for further investigation in the coming chapters.

In sum, life cycle models are convenient heuristic tools to describe how organizations go through different stages during their life cycles. While life cycle models do not predict organizational emergence, they do indicate that performance may mean different things to organizations at the early stages of the organization creation process than to organizations at a later stage of the process. Therefore, one should not use performance models, designed for new organizations, in investigating the performance of pre-organizations.

To summarize the discussion about entrepreneurial event models, we can say that researchers have identified some of the key events of the organization creation process, like self-identification, opportunity recognition, and entrepreneurial decisions. These events, however, do not concentrate on the gestation stage of the organization creation process. They are very important pre-events, which seem to be the catalysts of the organization creation process. Even though it is very important – and interesting for psychology, cognitive, and sociological researchers – to know why individuals decide to create an organization and how they recognize opportunities, we still do not understand why some pre-organizations make the transition into new organizations. The focus of these models is on the individual dimension and on the conception stage of the organization creation process. Learned (1992: 41) made a difference between two phases of the organization creation process: *“Through the organizing process, the founder’s thoughts are sometimes (but not always) translated into a preorganization (an attempt to found), and then sometimes (but not always), an organization (a successful attempt to found)”*. In other words, the decision models concentrate on how a founder’s thoughts are translated into a pre-organization, rather than how a pre-organization makes the transition into a new organization.

To summarize the environmental school, we can first say that the population ecology approach has enhanced our understanding about the role and the impact of the environment on the rates of organizational emergence. The population ecology approach has shown that population level changes affect directly the resource bases on which every pre-organization

is dependent. We have also learned that an individual may be the initiator of the organization creation process, but if the environment does not contain the resources needed, the pre-organization will not take off, no matter how much the individual will possess required ambitions and characters. In other words, the environment is the source of constraints that affect pre-organizations. All pre-organizations are dependent on resources, which are not evenly distributed, nor unlimited. Yet, the population ecology approach does not explain why some pre-organizations are more capable to resist than others. In other words, population ecology explains organization creation as only based on environmental antecedents and consequences, and ignores all organizational and individual influences (Shane & Venkataraman 2000). Despite the recent efforts to include the individual dimension in their models, population ecology has little to say about the successful creation of new organizations. That is, organizational emergence is not the dependent variable of these studies. The studies are prediction-oriented, but predictions hold only at the level of populations of organizations. Secondly, the industrial economics complete the notion of 'resource scarcity' of the population ecology by stressing the structural features of particular industries. Pre-organizations, of which the majority enter established markets, need to analyze carefully the competitive environment before choosing an entry strategy.

As a summary of recent trends in entrepreneurship studies, we looked at networking studies and gestation activities. The studies on nascent entrepreneurs and networking tend to be descriptive in the sense that they describe either a situation in which entrepreneur should be in order to be successful (center of big personal network composed of strong and weak ties), or the type of behavior the nascent entrepreneur should undertake in order to be successful (acting-as-if). That is, they focus on the process dimension of organization creation, which is important but does not answer the question why a limited number of pre-organizations make the transition to become new organizations. The contribution of these recent trends of entrepreneurship studies lies in the understanding of the importance of behavior and actions. For example, networking studies highlight the importance of (1) using social contacts to get access to resources and of (2) using social contacts to build new social relationships. Studies related to the nascent entrepreneur have described in what types of activities these individuals should engage themselves in order to increase the likelihood of survival.



Moreover, while bringing up interesting issues about organization creation, the studies about gestation activities have some conceptual problems. For example, gestation activities generally include a wide variety of activities (see for example Carter et al. 1996). In other occasions, researchers call these activities “new firm markers” that can be used to identify when organization creation efforts result in the formation of new firms (Gartner & Carter 2003). That is, some activities are labeled as markers of new organizations, as the first sales or personal investment in the pre-organization. Therefore, gestation activities are either activities nascent entrepreneurs undertake or critical milestones to be achieved in the process of organization creation. The problem may be result from the vague definition of when a new organization has been born. Scholars use different indicators of organizational emergence such as sales and profitability (Davidsson & Honig 2003), entrepreneurs’ perception of being in business (Gartner et al. 2003), or the experiencing of four key events (Reynolds & Miller 1992). What is needed is the clarification of the use of different activities versus organizational markers.

The findings of Eisenhardt and Schoonhoven (1990) and the whole literature on new venture performance and initial founding conditions are extremely important to the present study. Even though performance studies concentrate mainly on existing organizations, the performance models developed, and the combined use of several theoretical frameworks has helped the strategy field to understand the performance of existing organizations.

Table 2 summarizes the main issues of the previous empirical review. This study is also positioned based on the same issues.

Table 2. Positioning the study in light of existing empirical studies.

	Organizational studies	Entrepreneurship	Strategy	Environmental school	Networking & gestation	This study
Reviewed stream of research	Life cycle models	Event models	New venture performance	Population ecology & Industrial economics	Networking studies, Gestation activities	Pre-organizational performance
Dimension taken into account	Organization, environment	Individual	Environment, organization, individual	Environment	Process	Organization, environment, individual, process
Type of research	Descriptive	Prediction oriented	Prediction oriented	Prediction oriented	Descriptive	Prediction oriented
Dependent variable	Generally no dependent variable	Reasons to become an entrepreneur	Organizational performance	Rates of foundings and disbandings	No dependent variable	Organizational emergence
Subject of study	Organizations' life cycles	Individual	Organization	Populations of organizations	Networks & gestation activities	Pre-organization
Phase of org. creation	From conception to adolescence	Conception	Infancy and adolescence	Infancy and adolescence	Gestation stage	Gestation stage
Main idea or constructs to be retained	Performance determinants & indicators vary along the process	Importance of the individual	Integrated frameworks and models	Industry conditions; Environmental munificence	Behavior & activities	Legitimated elements and Legitimizing behaviors
Some exemplary studies	Christensen & Scott (1964); Greiner (1972); Kaufman (1975); Osborne & Dvorak (1985); Kazanjian (1988)	Collins & Moore (1964); Kirzner (1973); Martin (1984); Long & McMullan (1984); Kaish & Gilad (1991)	Chandler & Jansen (1992); Sandberg & Hofer (1987); Eisenhardt and Schoonhoven (1996); Cooper & Bruno (1977);	Delacroix & Carroll (1983); Hannan & Freeman (1987); Porter (1981); Kunkel (1991)	Aldrich & Zimmer (1986); Larson & Starr (1993); Reynolds & Miller (1992); Carter et al. (1996); Delmar & Shane (2004)	

### Dimensions taken into account and subject of the study

As pointed out several times, this study is interested in understanding why some pre-organizations succeed in becoming new organizations. To have a comprehensive understanding of the reasons for organizational emergence, four dimensions of organization creation need to be taken into account: individual, organization, process, and environment. The reviewed studies took these four dimensions into account with varying degrees of success.

Strategy research has the potential to form models that include all the four dimensions of organization creation. Strategy research generally takes into account variables from the environmental, the organizational, and the individual levels. When researchers try to determine the causes of the performance of new organizations, they usually have looked at the individual, the organizational, or the industry characteristics. Indeed, researchers have put forward a strong effort to integrate concepts from strategic management and industrial economics into the study of new organizations (Carter, Stearns, Reynolds, & Miller 1994; Sapienza & Grimm 1997). As a result, little by little, the performance models include the idea of interaction between the entrepreneur and the environment reflected by some of the earlier interaction models (e.g. Gartner 1985), even though the role of the entrepreneur is faded in some studies (e.g. Sandberg & Hofer 1987). What is usually missing is the process dimension of organization creation in these two streams of research. A notable exception is made in the framework by Cooper (1993). Yet, Cooper presents a theoretical framework, and does not use it in empirical research.

Networking and gestation activities, on the other hand, generally tend to emphasize the process dimension of organization creation and to leave the other three dimensions out of the descriptions. These studies stress the importance of the behavior and actions of individuals. Gestation activities studies describe what types of activities individuals should engage themselves in to increase the likelihood of survival. Behavior is a very interesting and often forgotten dimension in entrepreneurship research, as psychological traits or intentions are often measured without references to action. Indeed, entrepreneurs are able to take action: "*Effective entrepreneurs are dreamers who do*" (Smilor 1997: 342). Moreover, the action dimension and visioning are also interrelated: "*The entrepreneur must take short-term actions while maintaining long-term vision*" (Smilor 1997: 344). Rather than just thinking about or waiting for opportunities to come, entrepreneurs do things.

Entrepreneurial event models concentrate on the individual dimension of organization creation. This tradition stresses the psychological decision-making process of individuals to explain why some individuals engage themselves in an entrepreneurial career. While being interesting, these studies do not advance our knowledge about pre-organizations. Instead,

the studies seem to look at organizational emergence solely from the point of view of the individual.

The environment school advances our understanding of the role of the environment in the organization emergence process. The population ecology and industrial economics approaches have shown that environment is an element that should not be forgotten in any analysis where the aim is to understand the formation rates of new organizations. The characteristics of the environment determine the rates of new organization founding: given sufficient availability of resources, entrepreneurs will emerge (Romanelli 1989 b). Both of these approaches, while not being able to tell us why some projects make the transition into new organizations, yet help us understand how the structural characteristics of the environment, or the industry, set constraints for every pre-organization. Pre-organizations are dependent on environmental resources, which tend to be scarce. Besides the scarcity of resources, the structural features of an industry are important elements to be included in any attempt to understand new organization formation.

### **Phase of the process**

This study focuses on the gestation period of organization creation. The short review was enough to show that the mainstream organizational studies seem to ignore the gestation period. For example, strategy research generally concentrates on new ventures when they are in the infancy stage of development all the way to adolescence, as is the case with environmental school. The entrepreneurial event models, on the other hand, concentrate on the conception stage of organization creation, i.e. on the stage that precedes the gestation period. The only research streams that have their eyes on the gestation period are networking and nascent entrepreneur studies, which are interested in describing what kinds of behavior nascent entrepreneurs engage themselves in while trying to start a new business.

Life cycle models are convenient heuristic devices describing some important problem situations faced by organizations along their life cycles. What life cycle models indicate to us, and what is their biggest contribution to this discussion, is that problems and challenges do change along the life cycle of an organization. The problems at the conception stage are

different from the ones at the growth stage of the process. Therefore, performance indicators and determinants may also have different roles at the different stages of the organization creation process.

## 2.7 Conclusions and challenges

The logical conclusion this study is compelled to draw from this brief overview of research on entrepreneurship, organizations, and new ventures is that every thing seems to matter. An individual's background, his experience, decision-making process, the characteristics of the founding team, strategy, industry structure, barriers to entry, networking, acting-as-if behavior, social capital, etc. have all been shown to contribute to organizational success in one way or another at some point of the phase of organization creation process. This is precisely the key issue: if every thing matters in organizational emergence, we are then taken back to square zero in terms of producing a scientific account of organizational emergence (e.g. Bouchikhi 1993).

Despite an impressive body of research and publication about organizations and their success and failures, there seems to be a general feeling among scholars and practitioners that existing theories and models have not yet produced conclusive evidence about why some new organizations succeed and why others fail (Bygrave 1989; Bouchikhi 1993; Murphy et al. 1996). In a similar vein, our knowledge about the performance of emerging organizations remains limited (Ripsas 1998; Wennekers & Thurik 1999; Davidsson & Honig 2003). Two conclusions can be drawn from this state of affairs. Either we accept Bygrave's (1989) contention that organization creation processes are unique, chaotic, and unpredictable and, therefore, we give up the search for explanatory models of performance; or moderate our theoretical ambitions and pursue context-specific or mid-range theories that focus on a limited range of issues (Merton 1968; Pinder & Moore 1979). The difference between midrange theories and grand theories is that the former are more focused: midrange theories have fewer constructs and variables within their structures, present clear propositions and are presented in a more testable form (McKenna 1997; original Merton 1968). Echoing Poole and Van de Ven (1989), this study believes that a good theory is a

limited and fairly precise picture. Therefore, while the insight of Bygrave may not be easily discarded, in this study we believe that there are enough commonalities among organizational creation processes in similar contexts to justify the pursuit of local, context sensitive theories.

In this thesis, we believe that scientific work begins when one is able to say that some things are more important than others are in a particular context. Progress is indeed possible if scholars give up the pursuit of "universal" organizational theories and work on the development of sector and maturity dependent theories (Bouchikhi & Tornikoski 2002). Maturity dependent theories imply that the phase of development of an organization needs to be taken into account when designing any studies that intend to measure performance outcomes such as success or failure. The focus of this thesis is on pre-organizations, which is a completely different context and maturity level than the one of a rapidly growing new organization. As such, the challenge is to build a theory to explain the performance of pre-organizations.

Even though new venture performance studies generally focus on new organizations rather than pre-organizations, they are a benchmark to this study. From the short review on performance research, we learned that the field has managed to borrow concepts from other fields with success and used different dimensions of organization creation. Performance studies have succeeded in integrating different theoretical perspectives and levels of analysis to explain the performance of new organizations. The framework of Cooper (1993) was thus adopted. Yet, we cannot borrow new venture performance models or frameworks directly. The framework of Cooper (1993) needs to be explored in the pre-organizational context.

This study lays critique on performance studies, because the field seems to have engaged itself in variable listing activities. That is, performance studies liberally build on existing studies, but not on developing knowledge on a more general level, but by generating lists of variables. It is relatively easy to add new performance determinants to equations without theoretically justifying the choice of the variables added. For example, based on a comprehensive review of empirical studies on organizational growth and performance,

Wiklund (1998) points out that the overwhelming majority of the studies are empirical and often with a relatively low degree of conceptualization. Therefore, another conclusion to be drawn from the previous review is that, to have relevance, the field of organizational studies needs to be conceptually strong. As pointed out by Davidsson (1991), in order to advance further, the entrepreneurship field should focus on more abstract concepts, rather than testing low-level variables. Once we are able to identify abstract constructs and the relationships between different abstract constructs, we have a theory. Theory development does not advance when variables are confirmed to have an impact on other variables. We advance in theory building when rigorous empirical testing confirms or disconfirms the linkages between more abstract constructs.

Therefore, it is of no use to try to explore the framework of Cooper (1993) in the pre-organizational context only by looking at empirical studies. Instead of just looking at empirical studies to understand what the predictors of organizational emergence could be, we should try to identify relevant constructs in existing theories. Once the relevant constructs for the prediction of organizational emergence have been identified, we can try to translate the constructs into observable variables. The reviewed streams of studies will be useful once we have identified the relevant construct. For example, industrial economics and population ecology speak on behalf of the environmental and industrial conditions. Networking and gestation activities studies emphasize different behaviors and activities as important for the entrepreneurial outcome. The challenge of the following chapters is to justify the use of these concepts from a theoretical point of view in order to explain the phenomenon of organizational emergence.

### **3 A MODEL OF ORGANIZATIONAL EMERGENCE**

The third critical milestone of this study, the Task of modeling, is achieved as a model of organizational emergence is put forward. At the same time, the first and second research questions are answered. That is, the central constructs of organizational emergence are identified and a plausible mechanism is put forward in the form of research model.

A scientific study can get legitimacy only if it can make a distinctive contribution in its field. The contribution does not have to be huge or earth breaking, but distinctive enough to allow other scholars identify the new piece of the puzzle that the study is offering for the science. A first step towards making a distinctive contribution is to understand the broader theoretical field where the study intends to occupy a place. To develop a preliminary understanding of the theoretical foundations of this study, this chapter will briefly touch some of the central issues related to organizational theories. As such, the theoretical review is made with the focus on how different theories address the issue of organizational emergence. This will help one to form a theoretical model of organizational emergence. Then, the theoretical model is specified into a research model. Finally, the proposed mechanism of organizational emergence is evaluated.

#### **3.1 Towards a theoretical model of organizational emergence**

In this section, the institutional theory and the resource dependence theory will be presented and discussed. In addition, the new venture performance framework of Cooper (1993) will be discussed and used as a guideline to bridge between the two theoretical perspectives. As a result, a theoretical model is constructed. When constructing a theoretical model of organizational emergence, the emphasis is put on theoretical assumptions regarding organizational emergence, rather than on empirical findings. In Section 3.2, the theoretical model will be specified and operationalized into a research model of organizational emergence.



### 3.1.1 Organizational theories

Organizations are social inventions (Kimberly 1980), the fundamental building blocks of modern societies, and the basic vehicles through which collective action occurs (Aldrich 1999). A central problem in social sciences is that of accounting for the functioning of some kind of social system (Coleman 1990). There is a debate between deterministic and voluntaristic assumptions of human nature. Organizational theorists have long been puzzled by a dualism between structure and agent, which is one of the living paradoxes of social sciences (Poole & Van de Ven 1989). A traditional sociological explanation includes the idea that human and organizational behavior is the function of structural determination (Burrell & Morgan 1979), whereas the psychological explanation of the same phenomenon gives individuals and organizations free will (Shaver & Scott 1991). The dualism is very visible in studies that, for example, concentrate on organizational change and evolution. During the past few decades, the leading questions of the organizational change literature have included the following two ones: (1) can changes in organizational forms be explained by internal adaptation or by environmental selection?; and (2) is organizational life determined by intractable environmental constraints, or is it enacted through managerial choices? (Astley & Van de Ven 1983)

To address the first question, theoretical approaches like contingency theory (Lawrence & Lorsch 1967) stress the fact that organizations respond to change by modifying or elaborating their internal structures to maintain isomorphic relationship with their environment. Population ecology (Aldrich 1979; Hannan & Freeman 1977) stresses the difficulty, rarity, and liabilities of organizational change. While debating on an organization's ability to change, both of these approaches start with the assumption that environment is the origin of changes. The difference between the opinions is due to different levels of analysis: the population ecology approach looks at populations of organizations, whereas the contingency approach has the eyes on an organization.

The second question juxtaposes, for example, industrial economics with the managerial choice perspective. Between these two camps, there is a fundamental difference on how they see the role of environment. Industrial economics (e.g. Porter 1981) assumes that all

organizations face the same industry conditions, which limit the strategic choices of organizations, whereas the advocates of the managerial choice perspective (e.g. Barnard 1968; Child 1972; Pfeffer & Salancik 1978; Miles & Cameron 1982) argue that environment is not to be viewed as a set of intractable constraints. Instead, managers have the power to change and manipulate the environment. Again, these two camps do not share the same level of analysis. Industrial economics looks at industries as a whole, while the managerial choice perspective focuses on individual actors (organizations, individuals).

The purpose of this section is not to make another review of these debates. This has been done by several scholars earlier (e.g. Weeks 1973; Driggers 1977; Burrell & Morgan 1979; Van de Ven & Astley 1981; Astley & Van de Ven 1983; Gioia & Pitre 1990; Bouchikhi 1993; Vesalainen 1995). Yet, what is usually forgotten in organizational theories is the question how and why organizations emerge. Organization theories generally take the existence of organizations and their context as given (e.g. Kimberly 1980). For example, Astley and Van de Ven (1983) reviewed central perspectives and debates in organization theory. The authors stressed six debates on the nature and structuring of organizations, none of which included a question about the emergence of organizations. Moreover, Aldrich (1999), who is an advocate of evolutionary theory, is not able to give an answer to the question why organizations are formed. According to him, it is more fruitful to ask how new organizations are created. Answering the former question (i.e. why) usually requires that we concentrate on individuals and their psychological dispositions to understand why they decided to create an organization, whereas the latter question (i.e. how) concentrates on the process.

Aldrich (1999) made a good point, but he also seemed to oversimplify things. To know why some organizations are created does not refer only to characteristics of individuals, as Aldrich would like us to think, but also to characteristics related to organization and environment dimensions. As soon as an entrepreneurial action set (Hansen 2000) has started to work on a business opportunity, it is not an individual alone who decides whether a project is terminated or translated into a new organization. A team is working and deciding about the future of a project. Team members come and go: the ones who do not want to continue with the realization of a business idea will leave. Moreover, sometimes the

immediate audience of a pre-organization may decide whether a project is continued or not. For example, the power of a venture capitalist may be decisive when considering the future of a pre-organization. Therefore, to look at the issue why organizations are created is not related only to the characteristics of individuals. It is a fruitful question to ask. Indeed, Coleman (1990) has pointed out that social theory continues to be about the functioning of social systems, whereas empirical research is often concerned with explaining individual behavior. Therefore, because some scholars tend to overlook the issue of why new organizations emerge, we lack knowledge about the determinants of organizational emergence.

Another problematic area in organizational emergence is related to the nature of the phenomenon. How could we describe the period of organizational emergence? Does organizational emergence resemble more a chaotic situation or is it possible to identify distinctive patterns of development? Again, two different camps of scholars can be identified. For example, Bygrave (1989) sees that all occurrences of organizational emergence are unique, chaotic, and unpredictable processes (also Aldrich & Martinez 2001). Meanwhile, Kazanjian (1988), Van de Ven et al. (1984), and other scholars in the entrepreneurship field point out that the distinctive phases of organizational development can be identified. These two camps hold very different views about organizational emergence. If we accept Bygrave's chaotic view on pre-organizations, there is not much that scholars can do to understand or to control the phenomenon because chaotic systems are very sensitive to initial conditions where incremental changes in initial conditions result in unpredictable consequences (Gleick 1998). Meanwhile, if we accept that distinctive phases of organizational development can be identified, we are on the way to build models to predict the organizational emergence phenomenon.

Most organizational theories belong to the latter camp. In other words, most organizational theories start with the assumption that organizations evolve through predictable patterns (Aldrich 1999). If it is true that organizations develop through distinctive patterns, then we should have solid theories on organizational development processes by now. However, a look at the field shows that we are far from having reached this objective. For example, Levie and Hay (1998) reviewed 63 separate stage models of organizational growth between

1960 and 1996. According to the authors, all the recent large-scale empirical evidence indicated that organizations do not develop according to a pre-set sequence of stages. Instead, organizations "... appear to evolve through their own unique series of stable and unstable states" (1998: 29). In addition, Reynolds and Miller (1992) observed substantial variation in the length and patterns of the gestation activities of nascent entrepreneurs. Evolution and revolution seem to succeed each other in organizational emergence. Organizational phenomena are far too complex to be described adequately by any single theoretical approach (Tolbert 1985).

Therefore, instead of using our time to prove that one of the perspectives is right and the other one wrong, it could be more fruitful to build theoretical and methodological bridges between different approaches (e.g. Gersick 1991, 1994). Echoing Gioia and Pitre (1990), this study views theory building not as a search for truth, but rather as a search for comprehensiveness stemming from different worldviews. As stressed by Van de Ven and his colleagues (1984), Gartner (1985), and Chandler and Hanks (1994), organization creation is a phenomenon, which cannot be understood without looking at the environment, individual, the pre-organization, and the behavior of the focal persons. One theoretical perspective hardly takes into account all of the previous dimensions of organization creation. Therefore, researchers should try to integrate several theoretical perspectives in order to arrive at more complete view of organizational emergence.

Then, what could be integrated? As already pointed out in the opening chapter, one way to approach the integration is to look at theories that address the notions of liabilities of newness and legitimacy. Indeed, organizational theories seem to treat legitimacy in two ways (Oliver 1991; Elsbach 1994; Suchman 1995). According to the first tradition, pre-organizations either conform to the environmental demands or fail to be legitimated (Zucker 1987). Legitimacy is something that is not under the direct control of an individual organization. The institutional theory is a strong advocate of this standpoint. According to the second view, legitimacy can be viewed as a resource, which can be acquired from the environment (Dowling & Pfeffer 1975). An organization can influence its environment and acquire legitimacy. A theoretical perspective advocating this view is the resource dependence theory. While the institutional theory gives rather a passive view about

organizations, the resource dependence theory promotes a more active image of organizations. As already discussed in the opening chapter, this study will build a model around the institutional theory and the resource dependence theory. Both theories have the potential to offer something useful for the construction of a compelling rationale for organizational emergence.

The integration of the institutional theory and the resource dependence theory for the organizational emergence context is supported and encouraged by the very nature of human conduct. The external environment (e.g. industry competition, resource scarcity, etc.) may be the same to all pre-organizations. Yet, some pre-organizations succeed better than others. Some may be stopped by the structural properties of the environment, whereas others find ways to overcome these constraints. Therefore, as much as we need to understand the constraining role of the environment, we also need to complement the picture with a view that would reflect differences between pre-organizations and their behavior in order to understand better why some succeed better than others. This study aims to promote a view of organizational emergence where pre-organizations are partly constrained by the structural features of the environment, but also actively engaged in manipulating and controlling the environment to gain access to and control over the resources they need. An integral part of constructing such a view on organizational emergence is the integration of the resource dependence theory and the institutional theory.

The integration is also supported and encouraged by the success of similar efforts in other fields of organizational studies. For example, Tolbert (1985) integrated the institutional theory and the resource dependence theory to explain administrative differentiation in colleges and universities. Her analysis suggests that an institutional perspective defines the conditions under which the resource dependence perspective will hold. More specifically, increasing dependence does not necessarily produce administrative differentiation, as the resource dependence theory would predict. In fact, when resource dependence relations are institutionalized, the predictions of the resource dependence theory do not hold. Only when the dependence relations are not institutionalized, increasing dependence is strongly associated with the development of separate administrative offices to manage them. Tolbert was able to demonstrate that a straight resource dependence explanation is ruled out

(Zucker 1987). The explanation offered by the resource dependence theory needed to be complemented by the institutional theory to get a more comprehensive understanding of reality.

In another example, Sherer and Lee (2002) integrated the institutional theory and the resource dependence theory to argue that resource scarcity drives and legitimacy enables institutional change in the context of large law firms. Their results show that the early adopters of new practices are motivated by competitive pressures to acquire alternative human resources and are able to change by their prestige. More specifically, the resource dependence theory predicts that in the face of resource scarcity, organizations are pushed to innovate in order to find alternative ways to use resources. Yet, the resource dependence theory does not specify which at-risk organizations will be the initial users of alternative resources. To this last question, the institutional theory provides an important contribution. The institutional theory helps to identify organizations, which are most apt to be initial innovators. Without legitimacy, organizations will not initially be enabled to change.

These two short examples of integration of the resource dependence theory and the institutional theory are encouraging enough to lead us to take the same path. Two theories and one theoretical framework will be presented, analyzed and synthesized. The discussion will continue as follows. First, the institutional theory will be discussed. Then, the resource dependence theory will be discussed. After the discussion about the two theories, the new venture performance framework by Cooper (1993) will be analyzed. After the discussion on the three perspectives, the discussion concentrates on the question as to how the different perspectives could be used to construct an integrated theoretical model of organizational emergence.

### **3.1.1.1 Institutional framework**

For the effort to construct a theoretical model of organizational emergence, the institutional theory is the first important element. The institutional theory draws on the works of organizational such scholars as Parson (1956), Berger and Luckmann (1967), Meyer and

Rowan (1977), Zucker (1977), Scott and Meyer (1983), and DiMaggio and Powell (1983), to name few of them. The central notion of the institutional approach is institutionalization. For example, according to Berger and Luckmann (1967) institutionalization is a process of reality construction. Individual actors create realities, which are taken as real and internalized by others. That is, the institutionalization process creates new norms and rules, which become an objectified reality. The institutional theory conceptualizes the environment in terms of understandings and expectations of appropriate organizational form and behavior that are widely shared (Zucker 1977). Organizations face an environment composed of social institutions. Social institutions include regulatory structures, governmental agencies, laws, courts, and professions (Oliver 1991), which lay pressure on organizations and constrain them.

The early works of institutional scholars were looking at the question why organizations are homogenous in their forms and practices (DiMaggio & Powell 1983). The homogenization process is captured by the notion of isomorphism. Isomorphism is a process that forces an organization to resemble other organizations facing the same set of environmental conditions (Hawley 1968). In other words, organizations tend to become alike over time. DiMaggio and Powell (1983) point out that there is a distinction between competitive and institutional isomorphism. For example, the early work in population ecology by Hannan and Freeman (1977) is based on competitive isomorphism, which assumes system rationality that emphasizes market competition, niche change, and fitness measures. Institutional isomorphism, on the other hand, is a useful tool for understanding the politics that pervade much of modern organizational life. Indeed, organizations compete not only for resources and customers, but also for political power and institutional legitimacy (DiMaggio & Powell 1983).

According to Meyer and Rowan (1977), there are three mechanisms through which institutional isomorphic change occurs: coercive, mimetic, and normative. For example, when a venture capitalist wants to change the composition of the founding team of a venture as a condition for a positive financial decision, this represents a coercive pressure. As such, coercive isomorphism is based on formal and informal pressures exerted on organizations by other organizations. A particular organization is not necessarily under the

pressure of all other organizations. Coercive pressure on a particular organization is the result of this organization's dependence on other organizations. That is, coercive pressure is built into exchange relationships. On the other hand, when there are a lot of uncertainties (problems with ambiguous causes or unclear solutions, technologies poorly understood, etc.), organizations may model themselves on other organizations that they perceive to be more legitimate or successful. Thus, mimetic isomorphism is generally the result of uncertainty. Finally, normative isomorphism results from professionalization. The fact that a successful organization tends to recruit candidates from the same prestigious school and offer them similar career paths inside the organization tends to produce individuals who think the same way and respond to problems in a similar fashion. High mobility among professionals in regard to changing jobs and organizations also tends to drive organizations to look similar.

Isomorphism is important to organizations because organizations that exhibit practices and procedures defined by institutions increase their legitimacy and survival prospects (Meyer & Rowan 1977). That is, organizations need to exhibit legitimated elements (Zucker 1987) conformed by social institutions in order to survive. For example, Deephouse (1996) observed that one possible way to be legitimated is to conform to the strategies used by other organizations. Concern over legitimacy forces organizations to look alike and not to be different for the fear of lacking credibility (Scherer & Lee 2002), whereas organizations that innovate in important structural ways bear considerable cost in legitimacy (Meyer & Rowan 1977).

Yet, conformity to existing institutional rules, and the almost guaranteed survival that accompanies it, is possible only in an environment with highly institutionalized structure (Meyer & Rowan 1977). Isomorphism has no relevance in environments that do not have institutionalized structure. Some emerging industries could offer such a context where institutions have no rule-like existence. For example, Schumpeterian (1934) entrepreneurship is based on the idea that an entrepreneur introduces a novel innovation and breaks the existing equilibrium. In instances like this, old institutions are destroyed while new ones are in the middle of being structured. Most organizations, however, are founded within existing and relatively stable populations, imitating the structures, routines, and



goals of established organizations (Aldrich & Martinez 2001). In addition, most opportunities are reproducing rather than innovative (Samuelsson 2004: 157).

### **The institutional theory and organizational emergence**

The institutional theory takes the existence of organizations for granted (Zucker 1983). The theory is not so much concerned about pre-organizations. As such, the theory seems to have a space boundary. The theory is built for a certain types of organizations, i.e. existing organizations that operate in an institutionalized environment. Even though the institutional theory has not been interested in organization creation as such (Scott 1995; Aldrich 1999), the theory offers an interesting account on what a pre-organization should look like in order to be legitimated.

As already developed in the opening chapter, pre-organizations generally have limited access to capital, material, and labor markets, and they lack a record of accomplishment of success. The situation faced by pre-organizations is described well by Aldrich and Fiol (1994: 645): *"In addition to the normal pressures facing any new organizations, they also must carve out a new market, raise capital from skeptical sources, recruit untrained employees, and cope with other difficulties stemming from their nascent status"*.

Based on the institutional approach, isomorphism holds that a pre-organization is positioned within a preexisting institutional regime (Suchman 1995). Pre-organizations do not enter into a vacuum. Instead, an existing institutional regime can generally be identified. A pre-organization is legitimated if it conforms to the dictates of preexisting audiences within the pre-organization's current environment. If a pre-organization exhibits configurations similar to existing organizations, it is legitimated. For example, an organization can exhibit a certain structure or superficial appearance to be legitimated. Violation of institutionalized configurations may affect the ability of the pre-organization to obtain resources and social support. In this study, conformity to established models or standards is related to the legitimated elements of the pre-organization. If the organization exhibits legitimated elements conform to the demands of the environment, the pre-organization increases its likelihood for success.

Assuming that isomorphism will lead to the selection of those pre-organizations that exhibit the legitimated elements prescribed by the environment, what are these isomorphic characteristics, or legitimated elements, that are important to the process of organizational emergence? Unfortunately, referring to institutional theory is of little assistance in identifying such constructs as the theory does not explicitly define them. For example, in discussing the nature of homogeneity necessary among organizations Zucker (1987: 443) refers to legitimated elements and speaks about: "...*standard operating procedures to professional certification and state certification*". At the same time, he refers to structures, actions, and roles as institutional elements, which are authorized to legitimate other elements. Meyer and Rowan (1977), on the other hand, speak about institutionalized products, services, techniques, policies, and programs, which many organizations adopt ceremonially. Moreover, Powell (1991) points out that rather than evaluating organizations based on the appropriateness of their form, like in institutional environments, organizations are evaluated more by their outputs in technical environments. In technical environment, organizations closely monitor production and buffer their technical cores from environmental influences. Along this vein, it seems that an organization's legitimacy is evaluated as a function of its various inputs and outputs.

Unfortunately, many of these inputs and outputs do not exist for pre-organizations. For example, depending on the development stage of the pre-organization, it may not yet have in place all of the measurable inputs identified above, such as formal operating procedures or structures. Furthermore, unlike existing organizations, pre-organizations are in the process of creating their first outputs, and as such, outputs are unknown. Therefore, in order to apply the institutional theory to the present problem, the specific context of the organizational emergence process must be examined in order to identify those legitimated elements that are relevant for pre-organizational success.

As already pointed out in the opening chapter, pre-organizations generally need to acquire external resources to become viable entities (e.g. Zimmerman & Zeitz 2002). Because they need to acquire resources, pre-organizations are generally very dependent on external parties at the time of their founding. Zimmerman and Zeitz (2002: 417) argue that legitimacy is a resource necessary for the acquisition of other resources and for survival.

Echoing the previous logic, the exhibition of legitimated elements increases a pre-organization's chances to obtain external resources. Continuing to lean on Zimmerman and Zeitz (2002: 416), this study assumes that legitimated elements help motivate the *immediate audience* of the pre-organization by signaling that the pre-organization is properly constituted. Pre-organizations need to create a group of external audience who contribute the resources and support necessary for it to continue. Accepting the previous arguments leads this study to look into the coercive pressure, i.e. one of the three mechanisms through which institutional isomorphic change occurs (Meyer & Rowan 1977). As pointed out, coercive isomorphism is based on formal and informal pressures exerted on organizations by other organizations. In the present context, pre-organizations face coercive pressure from their immediate audience and need to exhibit legitimated elements. For example, the exhibition of legitimated elements can make the credit position of an organization more favorable; loans, donations, or investments can be more easily obtained (Meyer & Rowan 1977).

Then, what constitutes the immediate audience of pre-organizations that exercise coercive pressure on pre-organizations? According to Pfeffer and Salancik (2003: 24), any interest group that is in contact with a pre-organization can, and probably will evaluate the pre-organization, decide what activities and outputs to assess, and determine the criteria that will be used. Because it is practically impossible to name all the interest groups that make the immediate audience of each pre-organization, this study focuses only on some of the most common ones found in the literature concerning new ventures. As such, one important immediate audience of pre-organizations, and especially technology-based ones, is venture capitalists. Even though venture capitalists do not necessarily understand how they make decisions (Zacharakis & Meyer 1998), they still represent an important immediate audience from the point of view of the pre-organization. This is because pre-organizations generally have a need for external capital, advice, and connections to other important parties. It must be noted that although not all pre-organizations require or seek external financing, the venture capitalist literature is one of the few streams of literature in the entrepreneurship field that examines the perceptions of pre-organizations by external audiences.

When making investment decisions, venture capitalists generally look at the lead entrepreneur (Macmillan et al. 1985) or the founding team (Goslin & Barge 1986; Riquelme & Watson 2002). In addition, strategy research in industrial economics has placed significance on overall market conditions as part of venture capitalists' decision criteria (Shepherd 1999). Based on the above discussion, this study adopts the position that there are at least three potential legitimated elements for the prediction of organizational emergence.

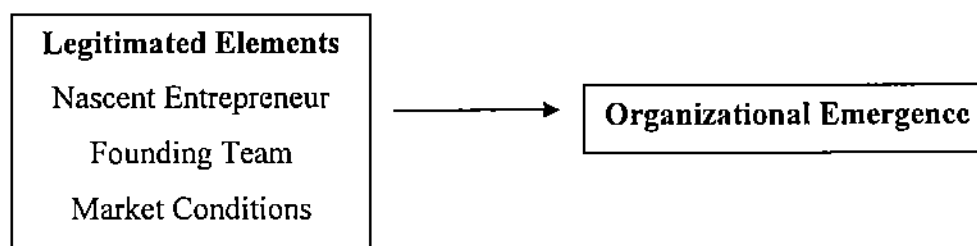
First, the nascent entrepreneur and his/her background and characteristics seem to bear relevance in organizational emergence from the point of view immediate audience. That is, resource gatekeepers generally use a nascent entrepreneur's background and characteristics in their evaluation of a pre-organization's legitimacy. Those nascent entrepreneurs whose background and characteristics conform to the institutionalized expectations of the immediate audience are legitimated and, in turn, will likely be afforded greater access to the resources controlled by these external audiences. Therefore, this study adopts the construct of *Nascent Entrepreneur* to refer to the background and characteristic of the nascent entrepreneur.

Second, the founding team also seems to be an important factor when considering organizational emergence from the viewpoint of immediate audience. The abilities and access provided by an experienced, educated founding team seem to be institutionalized in the environment. Those pre-organizations whose founding team is in accord with the expectations of resource gatekeepers will likely be afforded access to critical resources. Therefore, this study adopts the construct of *Founding Team* to refer to issues related to the qualities of the founding team.

Third, in addition to the characteristics of the people involved in the pre-organization, the degree to which the environment in which the pre-organization operates or in which it plans to operate is well accepted, is also among the essential legitimated elements of pre-organizations. It seems that in order to be maximize its access to needed resources, a pre-organization must also conform to the institutionalized expectations regarding credible operating conditions. As such, the operating conditions of the chosen industry and target

markets seem to be an important factor for organizational emergence from the point of view of immediate audience, and should therefore be taken into consideration. Therefore, the notion of *Market Conditions* will be adopted by this study to refer to the environmental and industrial conditions of the emerging organization.

Based on the previous arguments, a pre-organization increases its chances to become a new organization through the background and characteristics of the nascent entrepreneur (Nascent Entrepreneur), background of the team (Founding Team) and operating conditions of the chosen industry and target markets (Market Conditions). These three legitimated elements increase a pre-organization's chances to overcome liabilities of newness by conforming to the demands of the immediate audience of a pre-organization. As such, this study argues that an experienced nascent entrepreneur and a strong founding team generally increase the credibility of a pre-organization, whereas an inexperienced lead entrepreneur with no or a minor founding team generally does not find success among external audience. A pre-organization also needs to intend to occupy a lucrative market position before the offer is considered as credible. If markets are saturated with competitors and competing products, and resources are scarce, the creditability of a pre-organization is in question. A pre-organization with a competent leader and experienced team working in a favorable environmental context is bound to conform to the expectations of its immediate audience and lead to organizational emergence. At the same time, the three legitimated elements represent three of the four dimensions of the framework of Gartner (1985), namely individual, organization and environment. Figure 4 illustrates how this study divides the concept of legitimated elements into three central constructs.



**Figure 4.** Institutional framework.

As a summary, the institutional theory is the first important element for the effort to construct a theoretical model of organizational emergence. Even though the institutional theory is not directly concerned with pre-organizations, the theory can be applied to a pre-organization by using the notion of legitimated elements. The way the pre-organization can reach conformity to the demands of its immediate audience is to have the right configuration of legitimated elements. Using the institutional theory, we got an understanding that a favorable configuration of legitimated elements increases a pre-organization's chances to become a new organization. While it could be possible to identify several potential legitimated elements, this study decided to examine three potential legitimizing forces (i.e. Nascent Entrepreneur, Founding Team, and Market Conditions) as they act upon organizational emergence.

### **3.1.1.2 Resource dependence framework**

The second important element for the effort to construct a theoretical model of organizational emergence is the resource dependence theory. The intellectual origins of the resource dependence theory can be found in the social exchange theory from the 1960s and 1970s (e.g. Emerson 1962, 1976; Cook 1977; Blau 1964; Jacobs 1974). Lately, the resource dependence theory is attributed to the works of Pfeffer and Salancik (1978, 2003). The perspective considers the organization not internally self-sufficient and emphasizes the interdependency of the firm with external resources. That is, organizations are constrained by resource interdependence with other organizations (Jacobs 1974). The need for external resources determines the degree of dependence on the environment (Boyd 1990). Environment is conceptualized in terms of other organizations with which an organization engages in exchange relations. A dependence situation automatically implies the existence of power in a relationship (Emerson 1962). Indeed, the resource dependence theory may be best known for dependency and power relation.

The resource dependence theory, while stressing the dependence of organizations on external resources and the active role of the management in the resource acquisitions, also deals with the legitimacy issue. Rather than seeing legitimacy as something derived from

cultural norms, the resource dependence theory depicts legitimacy as an operational resource (Ashforth & Gibbs 1990; Dowling & Pfeffer 1975; Suchman 1988, 1995). For example, Dowling and Pfeffer (1975: 125) view legitimacy as "... a resource which given focal organization attempts to obtain and which, occasionally, competing organizations may attempt to deny". In other words, legitimacy can be extracted from the environment, like any other resource. Zimmerman and Zeitz (2002) support this view by arguing that legitimacy is a resource for new ventures.

Organizations may seek legitimacy through the active control of shaping the institutional environment (Dowling & Pfeffer 1979; Pfeffer & Salancik 1978). Thus, instead of remaking their organization to conform the environment, as suggested by the institutional theory, the organization can move beyond conformity to other, more proactive strategies (Suchman 1995). For example, an organization can make efforts to select an environment that will grant the organization legitimacy. In addition, an organization can also recruit co-optation targets that are credible to the immediate audience of the organization. In addition to choosing the right environment, an organization may seek to manipulate the environment. Especially innovators often need to develop bases of support specifically tailored to their distinctive needs by intervening preemptively in the cultural environment (Aldrich & Fiol 1994; Suchman 1995). Manipulation can also take the form of product or image advertising. Furthermore, through an accumulated record of technical success, an organization may establish new grounds for legitimacy. Lobbying, event sponsorship, litigation, and scientific research, on the contrary, are examples of concrete actions of environmental manipulation in order to gain legitimacy (Suchman 1995).

### **The resource dependence theory and organizational emergence**

Bruno and Tyebjee (1982) point out that the resource dependency perspective is not directly concerned with applying its model to the creation of new organizations. This would imply, again, that the resource dependence theory has a spatial boundary. The theory is about existing organizations. Yet, the resource dependence theory has demonstrated that entrepreneurs need to combine the spirit of independence with the reality of resource dependence (Zhao & Aram 1995). Resource dependencies are relevant for pre-organizations. Pre-organizations lack records of accomplishment with external parties.

Therefore, it is difficult for them to establish exchange relationships (Stinchcombe 1965). In the case of technology-based pre-organizations, their knowledge-intensive nature also contributes to dependence. Technological knowledge is often difficult to document and to transfer. Moreover, technology-intensive organizations may have highly specialized and narrow market niches, which makes the organizations dependent on few customers.

Based on the resource dependence theory and along the discussion earlier, it has become clear that some studies stress a particular behavior in which a nascent entrepreneur needs to engage himself to realize his project. Indeed, behavior is a key aspect of entrepreneurship (Covin & Slevin 1991). The intensity of activities is another important issue. The study by Carter and her colleagues (1996) suggests that the intensity of activities could explain why some nascent entrepreneurs succeed in creating a new organization while others fail. The study seems to indicate that we should also look at the intensity with which tasks are performed by the pre-organizations. Echoing these ideas, this study assumes that nascent entrepreneurs and their particular behavior and actions have a central place in explaining organizational emergence. Legitimacy can be acquired from the environment, like any other resource, through proactive behavior (Dowling & Pfeffer 1975). A nascent entrepreneur can engage in a wide array of possible behaviors (Gartner et al. 1992). In this study, the behavior and actions intended to overcome the liabilities of newness and to succeed in creating a new organization are labeled as *legitimizing behaviors*.

Then, in more specific terms, what activities constitute legitimizing behaviors? In terms of the resource dependence theory, Pfeffer and Salancik (2003) dichotomize legitimacy-seeking behavior within existing organizations as activities aimed at guiding and controlling the environment and activities aimed at adjusting to the environment. In the first set of activities, a manager seeks to create an environment more favorable to the organization, whereas in the second set, a manager actively attempts to conform to the expectations of the social context. In addition to Pfeffer and Salancik, other scholars have put forward classifications of strategies for legitimacy acquisition (e.g. Suchman 1995; Zimmerman & Zeitz 2002).



While Pfeffer and Salancik speak in terms of established organizations, the two sets of activities can be related to the context of organizational emergence. For, by engaging in the first set of activities, nascent entrepreneurs may alter the state of the pre-organization's environment by shaping the perspectives of those external parties with which they may engage in future exchanges. By engaging in the second set of activities, nascent entrepreneurs may discover additional metrics by which external audiences measure a pre-organization's legitimacy and engage in action that can provide evidence of the pre-organization's legitimacy in those regards. In support, Deephouse (1996) observed that organizational credibility is often acquired by conforming to the strategies used by other organizations.

A similar argument is put forth by Delmar & Shane (2004). These authors contend that when nascent entrepreneurs create new organizations, they engage in three distinct types of activities: legitimating, networking and resource combination. Though Delmar and Shane (2004) regard that networking and resource combination activities do not influence legitimacy acquisition, this study contends that such may not necessarily be the case. For as Pfeffer and Salancik (2003) argue, behavior can enable the acquisition of legitimacy to the extent that it increases an organization's compliance to institutionalized expectations. This is quite different from the discussion of legitimated elements, which passively exist and cannot be altered (such as years of experience, educational attainment, and product innovativeness). Instead, by networking and combining resources, a nascent entrepreneur may actively transform the external perception of a pre-organization so that it appears more legitimate to external audiences. More specifically, improvising<sup>2</sup> activities can increase legitimacy by portraying the image that the pre-organization is already operational. Resource combination activities can increase a pre-organization's legitimacy to the extent that it results in tangible outputs such as products or at the very least prototypes. Networking activities can increase legitimacy by strengthening the pre-organization's tangible resource base through access to others' resources and intangible resource base through access to others' contacts.

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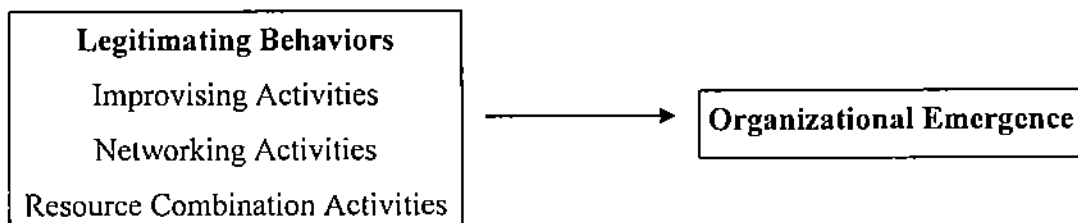
<sup>2</sup> Note that since we argue that all behaviors facilitate the acquisition of legitimacy, we use the term "improvising activities" in lieu of Delmar & Shane's (2004) "legitimizing behavior."

Based on the above discussion, this study adopts the position that there are at least three important sets of legitimating behaviors for the prediction of organizational emergence. First, a pre-organization can try to improvise to create an impression about an existing organization in the eyes of its immediate audience. That is, pre-organizations act as if they had a more permanent position in the market place (i.e. Gartner et al. 1992). Since the idea of what constitutes a successful organization is socially constructed (Powell 1991), nascent entrepreneurs may oftentimes improvise in such ways that their organizations look to external audiences “as if” they are operational when in fact they may not be. Therefore, this study adopts the notion of *Improvising* activities to refer to the illusion creation activities of pre-organizations.

Second, although improvising activities creating the appearance of an operational organization, it is largely superficial; that is, it is generally manifest in non-operational outputs. Thus, in order for a pre-organization to appear more legitimate to external audiences, it must engage in activities that results in outputs that are more tangible. Arguably, the most concrete of organizational outputs is products (or services). Thus, by engaging in the product development process, whether or not it results in the completion of a finished good, is important in that it provides a real assessment of what the pre-organizations is actually organized to do. Indeed, *Resource Combination* is one of the basic functions of entrepreneurs and entrepreneurial firms (Johannisson 1987, 1988; Leibenstein 1968; Schumpeter 1934).

Lastly, *networking* activities are also important in the attainment of legitimacy since they enable pre-organizations to manipulate the environment (Delmar & Shane 2004; Pfeffer & Salacik 2003). In support, Larson & Starr (1993) argue that new organizations often emerge by engaging in multi-dimensional exchange relationships with important social contacts. In this study we contend that to the extent that nascent entrepreneurs interact with their external audiences, they may increase their opportunities to convince such parties that their pre-organizations are legitimate. While not all such efforts will prove successful, we argue that each social contact made will increase a nascent entrepreneurs access (either directly or indirectly) to valuable resources in that each such contact will serve as a signal to other parties that the pre-organization is legitimate in the eyes of that resource provider.

Based on the previous arguments, a pre-organization increases its chances to become a new organization through improvising, networking, and resource combination activities. These three sets of activities aim at overcoming liabilities of newness through the acquisition of legitimacy from the immediate audience of a pre-organization. A pre-organization can use its time to develop new social contacts, combine resources, and/or try to improvise to create an impression of an existing organization. At the same time, the three activities represent the process dimensions of the framework of Gartner (1985). That is, they try to capture what is done during the gestation period. Figure 5 illustrates how this study divides the concept of legitimating behaviors into three central constructs.



**Figure 5.** Resource dependence framework.

To summarize, the resource dependence theory is the second important element for the effort to construct a theoretical model of organizational emergence. The theory starts with the notion that organizations are dependent on external resources. Instead of seeking conformity to external demands, the resource dependence theory introduces the notion about active pre-organizations, which can extract resources from the environment, and even manipulate the environment. Using the resource dependence theory, we got an understanding that legitimating behaviors increase a pre-organization's chances to become a new organization. Again, while nascent entrepreneurs and pre-organizations could engage in many different kinds of activities, this study decided to examine three potential sets of activities (i.e. improvising, networking, and resource combination) as they act upon organizational emergence.

### 3.1.1.3 New venture performance framework

The third important part of the effort to construct a theoretical model of organizational emergence is the new venture performance framework of Cooper (1993). He developed an interesting framework for the analysis of new venture performance. The framework consists of four sets of constructs that can be studied during the organization creation process and that have an effect on the performance of new ventures: entrepreneur's characteristics, founding processes, environmental conditions, and initial firm attributes. Figure 6 presents the framework of Cooper.

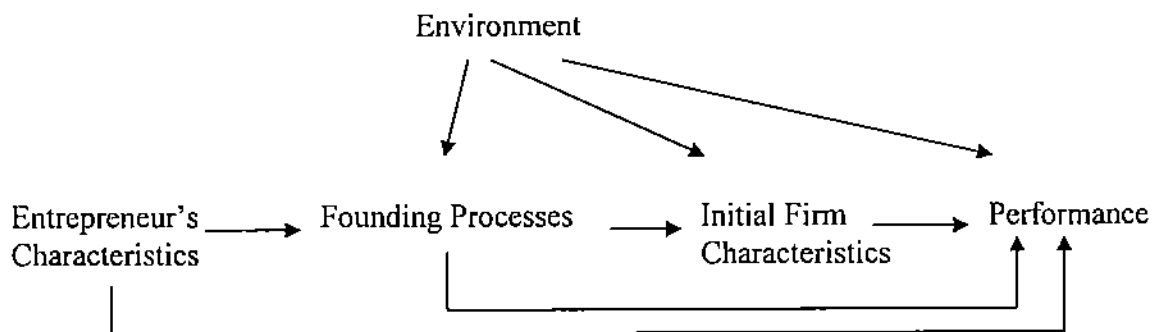


Figure 6. Framework of new venture performance by Cooper (1993).

As can be seen from Figure 6, the framework nicely brings together the different dimensions of new venture performance that have been discussed earlier. The framework includes constructs related to the individual, the organization, the process and the environment. An individual's characteristics, such as gender, need for achievement, education, management experience, and goals are widely focused on in entrepreneurship studies. The Founding Processes dimension includes the following areas: planning, risk management, use of information sources and networking, team formation, and financing. Initial Firm Characteristics include areas like the strategy of the firm and the characteristics of the founding team.

The framework of Cooper (1993) will be the starting point of this study in an effort to explore the determinants of organizational emergence and to understanding why some pre-organizations succeed in becoming new organizations for two reasons. First, the above

framework includes the same constructs as the framework of Gartner (1985), so it is possible to understand the organization creation process by using this framework. Second, the framework of Cooper goes a bit further than the one of Gartner by proposing a causal chain between different constructs and relating them to a dependent construct indirectly and directly. The framework of Gartner (1985) does not have a dependent construct; instead, it suggests that all constructs are related to each other. The framework of Gartner (1985) is a convenient heuristic tool to understand the important dimensions of the new venture creation process, while the one of Cooper provides a more explicit description of causality between different constructs. As such, the framework can be regarded as a theoretical model. However, the framework needs to be challenged in the context of organizational emergence because generally new venture performance studies are concerned with the performance of small businesses rather than pre-organizations.

The framework of Cooper (1993) is based on interaction effect between endogenous and exogenous constructs. Endogenous constructs represent issues related to individual or organization itself. In the case of new venture performance, the endogenous constructs are related to the individual, founding processes, and to organization. If one only takes into account these three constructs, the new venture performance framework of Cooper (1993) would convey a strong message in support of managerial choice. That is, it is only the individual/organization that has relevance in explaining an outcome. The framework also includes an exogenous construct, which refers to things outside an individual/organization, the environment. As such, Cooper has taken into account the possibility that the individual/organization is not the only one to have something to say about the outcome. In addition, the exogenous construct is not only directly connected to the outcome construct, but also directly connected to some of the endogenous constructs. This last aspect of the framework of Cooper (1993) makes it an interaction framework: endogenous and exogenous constructs together form a framework.

There are two very important aspects present in the framework of Cooper (1993). First, when looking at the endogenous constructs, one notices that the different constructs are in a linear sequence. That is, the construct of Entrepreneur's Characteristics affects the construct of Founding Processes, which, in turn, affects the construct of Initial Firm Characteristics.

The second important aspect of the framework comes from the fact that the exogenous construct of Environment affects the endogenous constructs of Founding Processes and Initial Firm Characteristics, but not the construct of Entrepreneur's Characteristics. Thanks to these two aspects, the framework of Cooper (1993) is close to a model in the sense that it presents a causal chain. That is, different constructs are presented as being linked to each other with one-way arrows to indicate causality and direction of causality. In order to present causal relationships, a theoretical rationale, that is a mechanism, needs to be explicit.

What is the rationale of the framework presented by Cooper (1993)? Cooper does not present an explicit theoretical account as to why the constructs have been placed they way they are present in the framework. Instead, he took four sets of variables, which can be studied at the time of founding, and arbitrarily proposed a framework of path analysis. Furthermore, Cooper states that instead of a causal framework, the framework could as easily be a moderator type. While not presenting a theoretical rationale, Cooper calls for better theoretical frameworks and more theory-driven empirical research.

In the absence of an explicit mechanism, there are other ways to offer a rationale for the presence of causal relationships in the framework of Cooper (1993). The placement of the different constructs can be done by using the notion of distal and proximal constructs (e.g. Delmar 1996: 246). Indeed, when theoretical information about the relationship between different constructs is quite low, constructs could be divided into two categories: distal and proximal constructs. Distal refers to constructs, which are general. They are constructs that are relatively stable at and are relatively difficult to change. By contrast, proximal constructs refer to measures that are more associated with a particular situational context and are more task specific. Furthermore, to form causal relationship one has to make the assumption that distal constructs, which are difficult to change, influence proximal constructs, which are more situational and task-related. Distal variables are assumed to cause variation in dependent construct directly or indirectly via constructs that are more proximal. A proximal construct can only cause the variation in the dependent construct directly or via another proximal construct.

The framework of Cooper (1993) starts to make more sense when we use the notions of proximal and distal constructs. As can be seen from the framework of Cooper, the constructs of Entrepreneur's Characteristics and Environment are considered as distal constructs, because no other construct affects them. What is characteristic of distal constructs is that they are rather stable over time. Indeed, at the time of organizational founding, an individual has little means to change his/her background, for example. In a similar vein, for an individual/organization it is difficult to change the environment.

Furthermore, the construct of Founding Processes and the construct of Initial Firm Characteristics are considered as proximal constructs. These two constructs are affected by distal constructs. A characteristic of a proximal construct is that it is more situational and task-specific. Indeed, the Founding Process, such as different gestation activities, can be adapted to the specific tasks or situations confronted by pre-organizations. In a similar vein, Initial Firm Characteristics can be changeable, if required. For example, venture capitalists, an external audience of a pre-organization, may require (i.e. they use coercive pressure) that the composition of the founding team needs to be changed before a capital investment is made.

As a sum, the third important element for the effort to construct a theoretical model of organizational emergence is the framework of Cooper (1993). While not presenting a theoretical rationale to justify the framework of path analysis, the use of the notions of distal and proximal constructs helped us understand the placement of different constructs in the framework. As such, the next section will take the central constructs of the institutional theory and the resource dependence theory and aims to construct a theoretical model using the notions of distal and proximal constructs.

### **3.1.2 Summary and theoretical model**

This chapter was started with a discussion about theories in social sciences. It is our interest to try to combine several theoretical perspectives to get a more complete picture about the organizational emergence, rather than leaning on only one perspective. Two theories, which

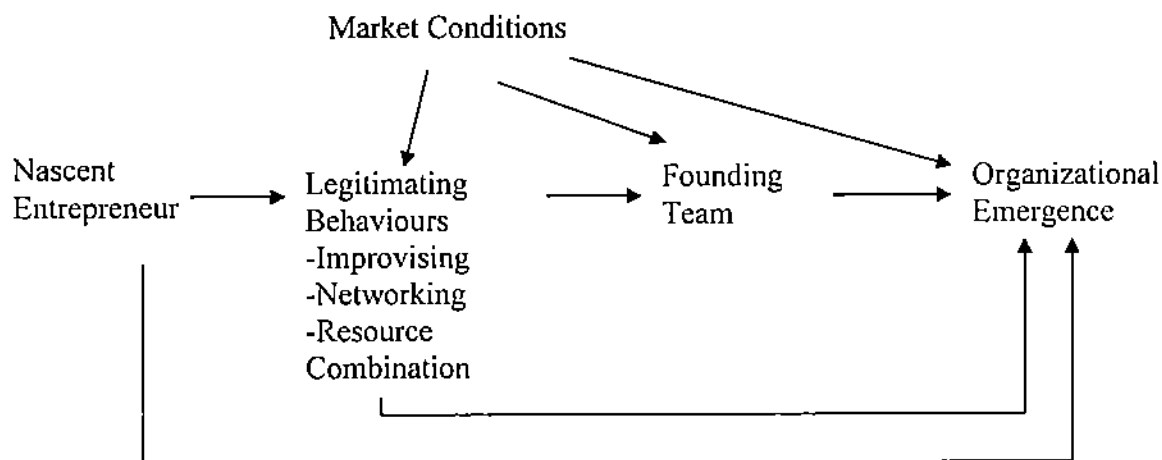
explicitly deal with legitimacy, were identified and discussed with the aim of determining how well they address the organizational emergence phenomenon and what are the key constructs brought up by them to predict organizational emergence. This section makes an effort to integrate the two perspectives on organizational emergence. For the integration, the framework of Cooper (1993) will be used as a guiding line.

Based on the resource dependence theory, we got an understanding that a pre-organization can transform itself into a new organization through legitimating behaviors. The resource dependence theory sees organizational legitimacy as an operational resource, which organizations can extract from their environment through legitimating behaviors. On the other hand, we learned from the institutional theory that a pre-organization can transform itself into a new organization if it has a favorable configuration of legitimated elements. The exhibition of legitimated elements leads to a conformity to the demands of the pre-organization's immediate audience.

As noted by Astley and Van de Ven (1983), a general problem in organizational studies is related to the fact that different approaches tend to focus only on single sides of issues and use such different logics and vocabularies that they do not speak to each other directly. For example, the institutional theory looks at organizations from the environmental perspective, whereas the resource dependence theory analyzes the situation from an organization's point of view. Because of the incompatibility in perspectives, it is no use to lay critic on different approaches. When the purpose of an approach is to explain how the overall cultural institutions penetrate organizations, as in the institutional theory, it cannot, and does not intend to explain why some individual organizations succeed in acquiring legitimacy while other similar organizations do not. However, in our study, we believe that by combining these two views, an integrative, and thus more comprehensive, picture of the determinants of organizational emergence can be constructed. Indeed, rather than just trying to identify the best theoretical perspective for the present purpose, this study adopts the view that it is more fruitful to try to integrate the two perspectives. In doing so, this study echoes the main conclusion made by Samuelsson (2004: 155): founding conditions (i.e. legitimated elements) and characteristics in the nascent venturing process (i.e. legitimating behaviors) have profound effects on subsequent venture-level performance. Figure 7 presents a



theoretical model of organizational emergence. The rationale of the theoretical model is explained thereafter.



**Figure 7.** Theoretical model of organizational emergence.

Rather than stating that the resource dependence theory and the institutional theory have an interaction effect on organizational emergence, or that one of the perspectives has a mediating role in explaining organizational emergence, the above theoretical model implies that the picture may be more complex. The theoretical model is a causal model presenting several causal paths between different constructs. The central constructs from the institutional theory and the resource dependence theory jointly form a more complex picture about organizational emergence. Since the theory behind the integration of these two theories is not solid or strong, the integration has been made by using the logic of the framework presented by Cooper (1993) and the notions of distal and proximal constructs (Delmar 1996).

As can be seen from Figure 7, the three constructs of legitimated elements and the construct of legitimating behaviors form the theoretical model. First, like in the framework of Cooper (1993), the dependent construct Organizational Emergence is affected by three different legitimated elements and three constructs of legitimating behaviors. That is, the market conditions, the founding team, and the nascent entrepreneur have a direct effect on organizational emergence. Moreover, the three constructs of legitimating behaviors have a direct effect on organizational emergence. The framework also indicates that the nascent

entrepreneur has an effect on legitimating behaviors, which, in turn, affects the founding team. On top of all this, the market conditions have a direct effect both on the legitimating behaviors and the founding team.

The three constructs of legitimating behaviors are derived from the resource dependence theory and are proximal constructs. That is, these constructs are situational and task-specific, and thus easily adapted to changing conditions. Depending on the specific tasks, different legitimating behaviors can be carried out. Moreover, some of the constructs derived from the institutional theory are distal. That is, nascent entrepreneur and market conditions are relatively difficult to change in short term. One needs to replace a whole person to change the nascent entrepreneur of a pre-organization. Likewise, once a pre-organization has committed itself to a certain opportunity, the market conditions related to competition or the environmental characteristics related to resource munificence are difficult to change by a pre-organization, especially when the pre-organization does not have legitimacy from the beginning. These ideas go well with the basic ideas of the institutional theory: The immediate audience of the pre-organization legitimates the right kinds of pre-organizations with the right combination of legitimated elements and has therefore a pro-founding impact on the survival chances of pre-organizations.

One construct derived from the institutional theory does not have a distal role. The construct of Founding Team is proximal instead of distal. While the founding team has an important meaning in the eyes of pre-organization's external audience, it can be changed in a relatively short period. A new team member can be added to the existing body of the founding team members, or excluded.

Other potentially important legitimated elements and legitimating behaviors do exist. The aim of this study is not to discover all legitimated elements or legitimating behaviors to predict organizational emergence. Instead, in this study we believe that it has identified potential legitimated elements and legitimating behaviors to examine their effect on organizational emergence. The proposed central concepts cover the essential dimensions of new venture creation (e.g. Gartner 1985). Moreover, the chosen construct also fits in the

framework of Cooper (1993). As such, this study examines three potential legitimated elements and legitimating behaviors as they act upon organizational emergence.

This chapter developed a theoretical model of organizational emergence based on the institutional theory and the resource dependence theory, as well as used the framework of Cooper (1993) as a guiding line to make the integration. The next section will specify the theoretical model into a research model.

### **3.2 Specifying a research model of organizational emergence**

An integral part of any effort to explain or predict something is to be able to build testable models. This section will specify the previously constructed theoretical model into a research model of organizational emergence, which can be tested empirically. The emphasis will be on specifying the independent and dependent variables corresponding to the constructs presented by the framework. In addition, one needs to specify extraneous variables whose influence must be controlled. To do this, due attention needs to be paid to any existing research, theory and literature relevant to the research problem (Gill & Johnson 1991).

#### **3.2.1 From theoretical model to research model**

The theoretical model presents the key constructs of organizational emergence based on the institutional and the resource dependence theories. The theoretical model aims to simplify the complexity of reality by presenting some potential constructs to understand organizational emergence.

The key constructs are not directly observable. Instead, they have many operational representations. For example, the construct of Nascent Entrepreneur can refer to an individual's internal dispositions, background characteristics, and current life situation. In this section, a research model is specified and operationalized from a theoretical model. The

specification and operationalization are needed in order to come up with measurable variables for empirical testing. The way to get from a theoretical model to a research model takes two steps in this study. First, every construct needs to be specified. Second, the specified constructs need to be translated into sets of variables.

### **3.2.1.1 Nascent Entrepreneur**

Entrepreneurship research has been particularly keen on studying the characteristics of entrepreneurial individuals. Persistent evidence seems to suggest that the start-up firm is an extension of its founder (Chandler & Jansen 1992; Dyke, Fischer & Reuber 1992). This quest for entrepreneurial individuals may be partly motivated by institutional demands. What external institutions usually look at in a project, is the nascent entrepreneur. For example, the most important finding of the study of MacMillan, Siegel and Narasimha (1985) was that it is above all the quality of the entrepreneur that ultimately determines the founding decision. Five of the top ten most important criteria had to do with the entrepreneur's experience or personality.

There are at least two notable streams of research where the focus is on individuals and their characteristics. For example, entrepreneurship scholars have been interested in the different psychological dispositions of entrepreneurial individuals as explanations for entrepreneurial success. The second stream of research looks at the demographic variables of individuals, such as experience, education, parents' occupation, minority status, sex, and socioeconomic status in connection to legitimating behaviors. These two streams are looking for different background variables or psychological characteristics to explain why some individuals are more entrepreneurial than others (Gartner 1989). From the point of view of external audience, what is more difficult to measure, are internal dispositions, such as need for achievement or heuristic biases. One could claim that the background characteristics of nascent entrepreneurs represent a necessary condition for the immediate audience.

Hence, in this study, the construct of Nascent Entrepreneur will be specified to refer to the background characteristics of nascent entrepreneurs. An individual's personal characteristics are part of the explanation because certain characteristics may lead to a successful attempt to found (Learned 1992). The more experienced and skilled the nascent entrepreneur is, the better the chances are that the project will be legitimated and that different resource providers will engage themselves in the project.

According to Sandberg and Hofer, by 1987, the most commonly examined background characteristics of entrepreneurs were 1) their education, 2) their managerial experience, and 3) their prior entrepreneurial experience. Most of these findings were negative at the time (Sandberg & Hofer 1987). Twelve years later, Sapienza and Grimm (1997) pointed out that the following variables had garnered impressive empirical or theoretical support: parental background, education, experience, orientation, and age.

Yet, one could raise the question as to why the linkage between the founder's background characteristics and performance is not conclusively shown in different studies? There may be a linkage between the founders' background characteristics and performance, but only at the very beginning of the organization creation process. However, most of the studies up to date do not consider the time dimension of the venturing process: performance is measured no matter how old the new venture is. We do acknowledge that in the later stages of the venturing process, the impact of the founders' background characteristics on the performance of the venture may easily be very small. Moreover, at the beginning of the venturing process, the impact of the founders' background characteristics may be bigger.

### **Operationalization of the Nascent Entrepreneur**

According to Shane and Venkataraman (2000), knowledge explains why certain individuals are more suited to exploit (and to discover) venture opportunities. According to Polanyi (1966), knowledge either takes the form of tacit or codified knowledge. Tacit knowledge is not easy to share with others. One likely source of tacit knowledge is *experience*. Codified knowledge, by contrast, is easily transferred between individuals. One way to acquire codified knowledge is *education*.

Based on the previous discussion, the construct of Nascent Entrepreneur is operationalized as the experience and education of the nascent entrepreneur. The key properties are the depth and breadth of experience (Reuber & Fischer 1999). Scholars generally measure the depth of experience by the duration of work experience, and, correspondingly, the breadth of experience by the diversity of management, industry, or small business experience. Earlier start-up experience usually reflects diversity. Therefore, experience is divided into former entrepreneurial, managerial, and industry experience. Education refers to the highest educational level obtained. Prior to organization creation, the experience and formal knowledge of a nascent entrepreneur are called to help in problematic situations. As such, the external audience of a pre-organization generally uses experience and education as proxies for individuals' different abilities, such as problem solving skills. It is assumed, for example, that earlier tacit knowledge deriving from experience in similar industry, start-up firms, managerial positions, large firms, or small firms would lead to more knowledgeable actions and decisions in the organization creation process. Even when entrepreneurs are unable to create long-lasting organizations, their efforts are rewarded by the acquisition of unique knowledge that can be used in subsequent founding attempts (Aldrich & Martinez 2001). Experience is also assumed to contribute to the development of the values, needs, incentives, and drives that energize the entrepreneurial idea (Bird 1993). By looking at the nascent entrepreneur, the external audience will either legitimate the pre-organization, or put a question mark on its credibility.

As such, the construct of Nascent Entrepreneur is made up of the following items: start-up experience, industry experience, managerial experience, educational level and age of the nascent entrepreneur.

### **3.2.1.2 Founding team**

The founding team is an important factor of any pre-organization, because a pre-organization does not have a formal structure against which legitimacy could be judged. There is a growing body of evidence that an entrepreneurial event is more often supported by a team of entrepreneurs than by an individual (Gartner, Shaver, Gatewood & Katz

1994). The legitimacy of a pre-organization could be judged against its founding team. Indeed, those who finance new ventures consider the "quality" of the management to be a significant factor in financing decisions (Goslin & Barge 1986; MacMillan, Siegel & Narisimha 1985). For example, venture capitalists generally pay attention to the founding team (Riquelme & Watson 2002) when making investment decisions. Therefore, the characteristics and qualities of the founding team members need to meet some minimum criteria before the immediate audience of the pre-organization is bound to legitimate the pre-organization and, consequently, to increase its the chances to become a new organization.

In similar lines with the construct of Nascent Entrepreneur, the external audience of a pre-organization uses the qualities of the founding team as one crucial pre-determinant for the success of any pre-organization. Vesper (1990) points out that even though team ventures are not desirable in all types of ventures but team ventures are preferred when substantial capital must be raised, which is the case with technology based pre-organizations. For example, Cooper and Bruno (1977) found that the more successful companies (i.e. those that survived longest) were founded by two or more founders, and had one or more founders with prior experience in the markets or technologies they addressed. Van de Ven and his colleagues (1984) found that start-up success was correlated with certain characteristics of the founders: education, experience, and internal locus of control. Moreover, Roure and Maidique (1986) found that two characteristics of the founding team affect the success of ventures: team completeness, and degree of prior joint experience. In addition, Roure and Keeley (1990) observed the completeness of the founding team to have a positive effect on the internal return of new firms.

Following similar logic as with the construct of Nascent Entrepreneur, in this study, the construct of Founding Team is specified as the background characteristics of the founding team.

### **Operationalization of the Founding Team**

In this study, the construct of Founding Team has four dimensions. First, the pure size of the founding team indicates collective ability to some extent. The underlying hypothesis is

that the more members there are in the founding team, the more capable the team is to solve problems and to navigate a pre-organization to clear waters. Second, what the external audience generally look at, after they have verified the existence of the team, is the team members' level of experience. Using the same logic as with the construct of Nascent Entrepreneur, collective experience is divided further into managerial, entrepreneurial, and industry experience of the founding team members. A founding team needs to possess a minimum level of experience in terms of managerial duties (to be able to run a business), entrepreneurial processes (to be able to pull everything together under resource constraints), and to know how the given industry operates (to identify a competitive advantage for the pre-organization). Third, the collective educational level also is a central part of the qualities of a founding team. While scholarly degrees may have been obtained years ago, the mere existence of high level of education demonstrates that a person is capable of abstract thinking and therefore more able to overcome problematic situations, which are often novel in new business creation. Fourth, team completeness is also a crucial factor of the qualities of a founding team. Instead of duplicating each other's experiences and educational levels, the experience and education of a founding team should complement each other. A business degree alone is not always sufficient to turn a pre-organization into a new organization.

### **3.2.1.3 Market conditions**

It is not enough that a pre-organization has a credible lead entrepreneur and founding team to be fully legitimated. All pre-organizations are influenced by the environment; yet the impact of the environment on performance is difficult to assess. There may be cases where well-conceived pre-organizations can fail because of unforeseen environmental shocks (Cooper 1993). Therefore, market conditions also need to meet certain characteristics before the immediate audience of a pre-organization is bound to legitimate and to give active support to it.

Generally, scholars stress different factors like entry barriers, industry life cycle, or competitive concentration when speaking about market conditions. These measures are



generally not well developed for pre-organizations. For example, competitive concentration is generally calculated in terms of percentage of sales, plant capacity, or distribution channels controlled by the largest four or eight competitors (Romanelli 1989 a). These measures are better suited to situations where markets and industries are well developed. Pre-organizations are not necessarily entering such markets. Therefore, we need to develop other measures to reflect the imminent market conditions that pre-organizations face.

In general, opportunity is related to the evaluation of the overall business idea and its positioning in the market place. For example, a pre-organization is rarely the only actor to pursue the opportunity. Instead, several competitors may be developing the same product or technology. If a pre-organization is the first one in the markets, it could enjoy short-term monopoly profits. In such a situation, the immediate audience may regard the pre-organization as credible. If a pre-organization is entering highly competitive markets, it may be difficult to get support from the external audience because the expected returns, at best, may be moderate. Roure and Maidique (1986) found in their sample that either successful ventures entered markets where no clear leader existed, or, if there was a clear leader, the ventures avoided head-to-head competition with the leader. In other words, successful ventures targeted market segments relatively uninhabited by strong competitors. As such, industry competition seems to be an important indicator of market conditions.

Moreover, Kunkel (1991) determined that the most important industry structure variable is the life cycle stage. If the industry is in an early stage of growth, this represents an opportunity to an emerging organization. In addition, Robinson (1998) observed that the stage of the life cycle of the industry was the most important determinant of new venture performance. Moreover, industry concentration, entry barriers, and product differentiation did not have statistically significant relationships with any of the eight alternative measures of new venture performance.

According to Davidsson (1991), external factors, such as industry structure and dynamics, various characteristics of the geographic and economic environment, including access to key resources, industry fragmentation, market size and growth, entry barriers, and access to capital, are likely to be relevant indicators of opportunity for growth. All these external

factors have one thing in common: they are concerned with (objective) opportunity. Objective conditions are important because they determine the quality of opportunity of the new venture (Tsai, MacMillan & Low 1991). Therefore, when a new organization is in an industry, which is at an early growth stage with no big competitors, and there is substantial untapped market demand for the product, we generally state that quality of the opportunity is good. In other words, the discovered opportunity needs to meet some minimum criteria before the pre-organization could be legitimated in front of its immediate audience. In this study, the construct of Market Conditions is related to the characteristics of the industry sector of the pre-organization.

#### **Operationalization of Market Conditions**

This study adopts the quality of opportunity measure of Chandler and Hanks (1994) to reflect the construct of Market Conditions. They used the measure of quality of opportunity to assess the environment within which the organization operates. The construct was developed to provide estimates of the quality of the opportunity and the availability of resources. There were six items in the measure of market conditions to assess the perceived scarceness or abundance of opportunity. Market conditions are favorable when (a) there is much diversity between firms in terms of product quality, customer service, and marketing approaches; (b) there are many differences between products/services provided by various organizations; (c) there are only a few or no major competitors with roughly equal competitive positions; (d) the industry is in the early high-growth stage of development; (e) there are no companies that have been established for years; and (f) there is substantial untapped market demand for the product/service.

#### **3.2.1.4 Improvising**

The founding of new organization often requires nascent entrepreneurs to improvise (Aldrich & Martinez 2001). As pointed out, through legitimating behaviors, a pre-organization can acquire legitimacy from the organizing context, like any other resource (Suchman 1995). One way to acquire legitimacy is to engage in acting-as-if behavior (Gartner et al. 1992). That is, nascent entrepreneurs need to behave in a manner to make the

emerging organization more tangible to others. This point is well captured in the following sentence (Gartner et al. 1992: 17): *“In emerging organizations, entrepreneurs offer plausible explanations of current and future equivocal events as non-equivocal interpretations. Emerging organizations are elaborate fictions of proposed possible future states in existence.”* Gartner and his colleagues (1992) refer to Starr and MacMillan (1990) to offer an example of the acting-as-if principle: A Cuban entrepreneur who secures the use of a friend’s business resource (space, telephone, computer, copy machine, delivery van) during the start-up of his business and uses the resources to amplify the pre-organization’s size and legitimacy. Improvising activities enable a pre-organization to appear “as if” it were an existing business. Through improvising activities, a pre-organization creates an image of pertinence and acquires legitimacy from its immediate audience, who are then likely to respond to the pre-organization “as if” it were an existing organization.

Improvising activities have the potential to be a very efficient form of activities to promote organizational emergence because success is in large part socially constructed (Powell 1991), which leaves room for impression management (Suchman 1995). Indeed, impression management tactics are used to portray structures and actions in ways intended to garner endorsement and support (Schlenker 1980). Suchman (1995) offers some concrete examples of proactive strategies that organizations can deploy to manipulate their environment, such as lobbying, advertising, event sponsorship, litigation, and scientific research. In addition, symbolic management is closely related to our conception of improvising activities.

Research on organizational legitimacy in entrepreneurship has demonstrated that improvising activities are an important factor of success for pre-organizations. For example, Delmar and Shane (2004) define improvising activities as consisting of two activities: establishing a new legal entity and writing a business plan.

### **Operationalization of Improvising**

No established measures were found for the Improvising constructs. Delmar and Shane (2004), however, do talk about legitimating activities, which bear similarity to improvising activities. For example, the authors point out that to overcome stakeholders’ resistance to

reallocate resources, organizational founders often need to demonstrate the value of their ideas.

In this study, there are four different, but related, types of activities, which are assumed to create an impression that a new organizations already exists. First, a pre-organization may borrow material and equipment from friends of the founding team members, just like the Cuban entrepreneur, who secured the use of a friend's business resource during the start-up of his business and uses the resources to amplify the pre-organization's size and legitimacy. Second, a pre-organization can create logos, business cards, etc. to make the business more tangible for the outside world. If the members of the founding team can hand out business cards and approach external parties with documents showing the name and address of their pre-organization, this is bound to increase its existence. Third, a central part of impression creation is also demonstrating with all available means that a business has been created (e.g. Delmar and Shane 2004). For a start-up, the challenge is to prove that the concept works and will be the winning idea in the future. Therefore, the members of the founding team need to use all available means to demonstrate that such an idea exists and they are the ones to execute it. Finally, the members of the founding team can also use language to convey the message that a business has been created. That it, speaking as if a business exists will make the business a bit more tangible to outsiders. As such, the Improvising construct is made of four different kinds of activities.

### **3.2.1.5 Networking**

The network approach offers a rather detailed description of how new organizations emerge through the transformation of one-dimensional social contacts into multi-dimensional exchange relationships. The networking approach directs our attention to social capital, which is embedded in the personal network of a nascent entrepreneur and to the way in which a nascent entrepreneur transforms one-dimensional contacts into complex economic exchange relationships. By drawing on his social contacts, a nascent entrepreneur gains access to valuable resources, which include, among other things, legitimacy. Therefore, the

network approach offers a very interesting descriptive count on how organizations emerge from the personal networks of nascent entrepreneurs.

At the individual level, one of the basic premises of the network approach is that the actions of individuals can be best explained in terms of their position in networks of relationships (Nohria 1992). That is, an individual's network position is assumed to influence his actions. A central position in a network of relationships, for example, allows an individual to access resources through direct and indirect links. As such, the networking studies have demonstrated how entrepreneurs use interpersonal relationships as a media through which entrepreneurs gain access to a variety of resources (MacMillan 1983; Starr & MacMillan 1990). Entrepreneurs use networks to get access to different tangible resources such as capital and employees, but also to intangible resources including information and advice, as well as emotional support. Furthermore, several authors have stressed that social contacts are used to gain credibility in front of external actors (Deeds, Mang & Frandsen 1997; Stuart, Hoang & Hybels 1999). Therefore, the underlying assumption is that, in the absence of a record of accomplishment, the entrepreneur must rely upon his personal credibility in asking other parties to take a risk by providing necessary resources (Ostgaard & Birley 1996).

Network studies have demonstrated the utility of social networks and social capital to pre-organizations. The resource dependence theory would predict that nascent entrepreneurs make acquisitions to get resources because the ownership of resources decreases an organization's dependence on its environment. Two important aspects of networking are worth of distinguishing: the use of social contacts to get an access to resources, and the use of social contacts to build new relationships (enlargement of social capital). For example, Hansen (2000) observed that those nascent entrepreneurs who succeeded in creating a new organization were able to accrue additional social capital along the way. It seems that the Networking construct is often limited only to the former point of view. That is, networking is only considered from the point of view of the size and structure of an individual's personal network. Meanwhile, the networking aspect has gathered less attention. By networking is meant that an individual and a team of founders can use their network to enlarge their existing social contacts. Indeed, networking studies are criticized for

concentrating too often on the structure of personal networks and not on the dynamics of networking behavior (Monsted 1995). In this study, the construct of Networking refers especially to behavior that aims at enlarging the existing social contacts.

Therefore, a key benefit of networks for the organization creation process is the access they provide to information, advice, and resources. Depending on the size of and position in a network of connections, nascent entrepreneurs can have an access to information. Many business opportunities are discovered through personal contacts. The organization creation process is not usually a linear and rational process where the individual just connects means to ends. Instead, the process is chaotic and discontinuous, where means and ends are difficult to connect to each other. In situations like this, to be able to continue, nascent entrepreneurs need advice and support from significant others. The biggest benefit of a personal network is access to resources. Since resources generally are scarce and not evenly distributed, personal connections may facilitate the acquisition of rare resources. Many individuals share similar financial and human capital. The ones that were successful did so because of their personal connections, i.e. social capital (Burt 1992). Based on this discussion, we can see that social capital embedded in interpersonal relationships is important for a nascent entrepreneur.

In this study, the Networking constructs is specified to refer to the following two issues: (1) using existing contacts to find information and resources, and (2) enlarging activity, that is, to the building of new relationships.

### **Operationalization of Networking**

The Networking construct is made of six different, but related activities, which emphasize two issues: using social contacts to get access to information, and enlarging the existent network.

Again, no available networking measures were available. In this study, there are several different but related types of activities, which are assumed to be related to the use of social contacts for resource acquisition in the new organization creation process. First, it is important to talk with the potential and future customers of the pre-organizations to get

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information about the customers' needs, trends, and habits. Second, potential suppliers are also an important part of information gathering. Suppliers also have knowledge about existing competitors, and although they do not want to give up such knowledge, this knowledge may influence the advice given to the pre-organization. Third, the use of friends and acquaintances to get access to important gatekeepers is also a central part of networking behavior. Especially in Latin cultures, it is important to know a person before one is willing to engage in business affairs. A recommendation from a common acquaintance will open many doors.

The enlargement of the existing networks is the second important dimension of networking; the pre-organization needs to invest time and energy to find R&D partners. This is necessary especially in high-technology pre-organizations. It is not uncommon to see firms cooperating with research laboratories and universities to transfer technologies or to develop new technologies together. The fifth dimension, and closely related to the previous ones, is the need to find technological partners. This refers to the fact that it is not always possible to include all the technical knowledge inside one small pre-organization. Instead, relationships need to be built to control, but not to possess, complementing technologies. Finally, pre-organizations, and more often the technology-based pre-organizations, need to find marketing partners. Indeed, the stereotype of an engineer developing a new product and a businessperson selling it is not far from the reality of many pre-organizations, especially at the very beginning of the new organization creation process.

### **3.2.1.6 Resource combination**

Pre-organizations lack the routines related to transforming resources into products and services. Indeed, resource combination is one of the basic functions of entrepreneurs (e.g. Schumpeter 1934). The importance of resource combination is demonstrated, for example, in the definition for entrepreneurship put forward by Stevenson and Jarillo (1990). According to them, entrepreneurs are people who exploit opportunities regardless of the resources they currently possess. In addition, Johannisson (1987, 1988) puts forward an image of the entrepreneur as a person who assiduously exploits opportunities by combining

resources. The idea that entrepreneurs start in resource-poor situations is also the dominant view in this study. So, echoing Schumpeter's (1934) view of entrepreneurship, pre-organizations introduce new combination of resources. As such, the essence of organization creation is the ability to gather necessary resources and to transform the resources into products and services.

### **Operationalization of Resource Combination**

No available measures for the Resource Combination construct were found. In their own study, Delmar and Shane (2004) used the concept of resource combination to refer to activities such as obtaining inputs, undertaking product development, or initiating marketing and promotion.

In this study, the Resource Combination construct is made up of five kinds of activities. First, what is essential to pre-organizations at the very early stages of the new organization creation is the development of existing technology for the use of the pre-organization. New technology may have been initiated in an inventor's garage, but it is during the new organization creation process when the technology gets the right form to suit to the demands of the markets. Second and third, perhaps the most identifiable resource combination activities are related to acquiring facilities for the business and getting equipment. In most cases, these issues do not require much of the time and resources of the pre-organizations, but sometimes the equipment needed may be sophisticated enough to require special attention and time and resource investments. Fourth, the finalization of a prototype is a good example of resource combination. Fifth, a pre-organization may also conduct a marketing study. Contrary to networking behavior, the utilization of marketing studies demonstrates different kinds of approaches to information collection. A marketing study is the traditional approach to learn something about the customers. Therefore, it is included as one of the key aspects of Resource Combination constructs. As such, the Resource Combination construct is made up of five different activities.



### 3.2.1.7 Organizational emergence

Organizational Emergence is the dependent construct of the present study. The bottom line question is when new organizations are born. The opening chapter of this thesis criticizes the existing studies for the use of the start of sales as an indicator of the birth of a new organization. Sales may create a business, but it does not necessarily create a new formal organization. As defined earlier in this study, organization creation comprises both the creation of new business and that of a new formal organization. As such, the start of sales does not create new organizations.

It is difficult to find one single objective definition of a new organization. Leaning towards an evolutionary perspective, Delmar and Shane (2004) used survival as a measure when something is up-and-running. Whereas, Gartner and his colleagues (2003) used perception of nascent entrepreneurs to comply with the fact that they are more behaviorally oriented. Since this study leans towards the institutional theory and the resource dependence theory, the dependent construct of Organizational Emergence has two components that reflect the two perspectives.

Conceptually, the Organizational Emergence construct was defined as the successful acquisition of four emergence properties, namely intention, resources, boundary and exchange. In a way, the construct Organizational Emergence measures the performance of pre-organizations. When a pre-organization has succeeded in experiencing the four emergence properties, it has performed well and transformed itself into a new organization. This can be taken as an objective measure of organizational emergence. Certain characteristics independent of individuals need to be met by pre-organizations before they become new organizations. This view can be seen to be more close to the institutional view of organizational creation.

On the other hand, organization creation can be taken as a subjective experience of the nascent entrepreneur. It is not a characteristic independent of individuals (achievement of four emergence properties) that creates new organizations; rather, it is the perception of the nascent entrepreneur that indicates when a new organization has been created. The

perception of the nascent entrepreneur and the perception of the founding team empower the pre-organization to behave like a new business that has been created. The impression of being in business guides the decision-making and behavior of the pre-organization. Despite of some lack in more objective characteristics, a nascent entrepreneur believes and behaves like a business that has been created. This view can be seen to be closer to the resource dependence theory of organizational creation. As such, in this study, the dependent construct of Organizational Emergence has two dimensions, namely objective and subjective ones.

The objective dimension of organizational emergence looks at the four emergence properties. As defined earlier, existing new organizations have four emergence properties, namely intention, boundaries, resources, and exchange (Katz & Gartner 1988), whereas pre-organizations have at least one but no more than three emerging properties. This study used the property of intention to identify pre-organizations, that is, all pre-organizations had the intention property since they participated in a national business plan competition. Therefore, the three remaining emerging properties (resources, boundary, and exchange) were used to form the objective dimension of organizational emergence. The subjective one tries to capture the point of the view of the nascent entrepreneur, that is, his/her perception on the situation of the pre-organization.

### **Operationalization of Organizational Emergence**

The first part of the dependent construct of this study is related to the objective measure of organizational emergence, namely new organizational markers. The three emergence properties are translated into five new organization markers. The boundary property is fulfilled when (1) a pre-organization has been registered, and (2) a separate phone line or bank account has been created. The resource property is fulfilled when (3) the nascent entrepreneur has devoted himself full time or has hired someone to work for the realization of the business idea, and when (4) the nascent entrepreneur has invested his own money or acquired outside funding. The exchange property is fulfilled when (5) the first sales have been achieved.

At the same time, the five new organization markers can be divided into two categories based on whether they indicate the emergence of a new business or formal organization. The indicators of a formal organization are the following new organization markers: firm registration, separate phone line and separate bank account, full-time devotion, investment of own funds, acquisition of external financing, and the first hire. The indicator of the emergence of a new business is the first sales.

The second part of the dependent construct of this study is related more to the subjective side of organizational emergence. In essence, a new organization has been born when a nascent entrepreneur perceives that a new organization has been created. A pre-organization can also be perceived as being still in the creation process, abandoned, or in a stand-by situation. These four different views are used to operationalize the perception of the nascent entrepreneur about the state of his/her pre-organization.

### **3.2.2 The research model**

The previous discussion has produced explicit dimensions to the key constructs and variables related to them in order to develop a research model out of the theoretical model. Figure 8 integrates the discussion and presents the research model of this study. As can be seen from Figure 8, the theoretical model presents the constructs of the theoretical model and the operationalized variables. Like in the theoretical model, some of the constructs are distal (Market Conditions and Nascent Entrepreneur), while other are more proximal (Improvising, Networking, Resource Combination and Founding Team). Likewise, the paths linking the different constructs are the same as in the theoretical model.

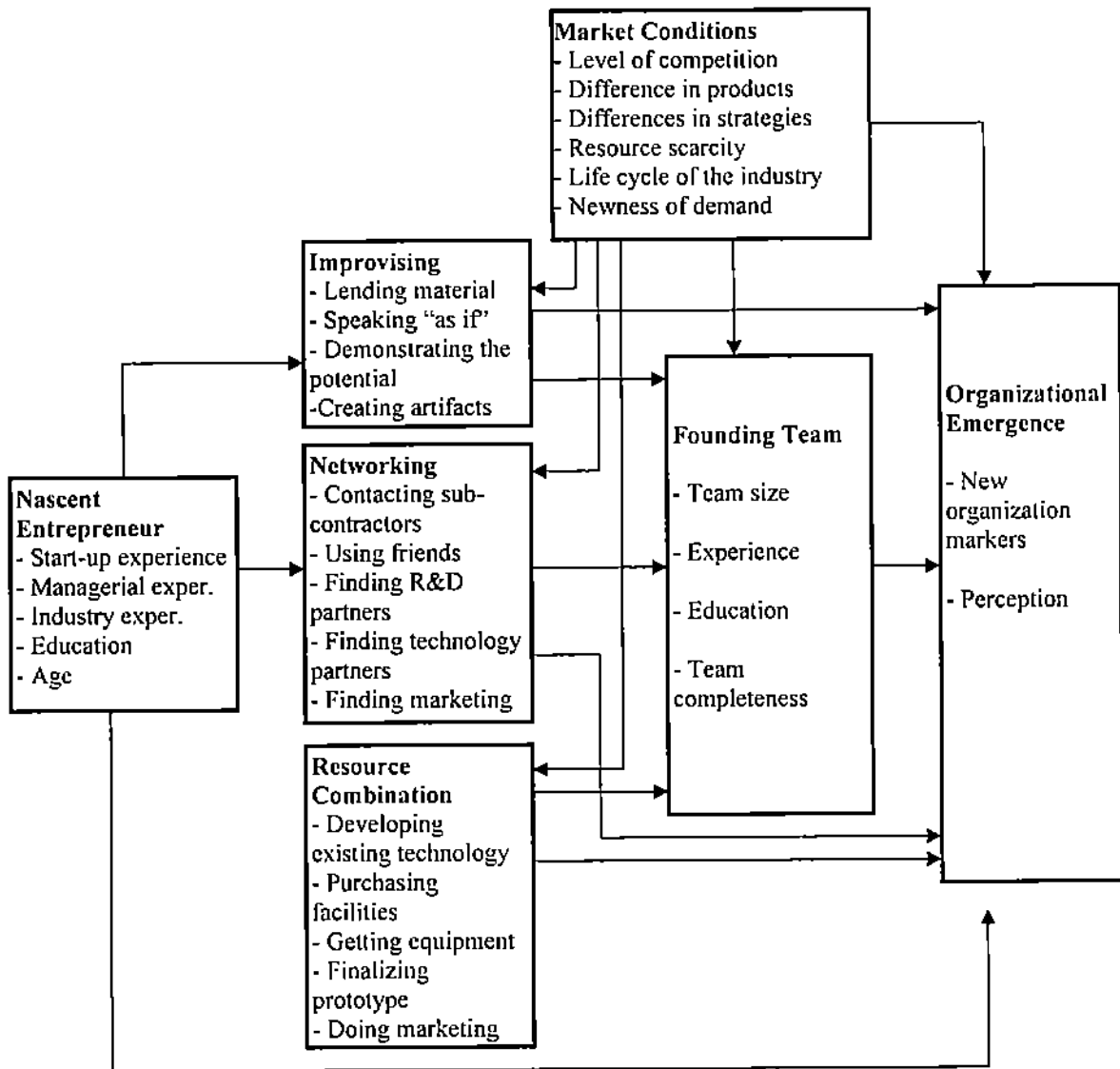


Figure 8. Research model of organizational emergence.

### 3.3 Evaluation of the research model

Based on the institutional and the resource dependence theories, this study proposes that legitimated elements and legitimating behaviors together predict organizational emergence. A theoretical model and a research model were constructed. How well do the models represent an adequate explanation for organizational emergence? A good theoretical model is the base on which causal relationships can be hypothesized (Delmar 1996). The

challenge with the research model of this study is that the theoretical information about the relation between the different determinants is very low. The study did not generate any hypothesis. It is not unusual to avoid producing hypothesis. Examples of similar approaches are offered by, for example, Delmar (1996) and Wiklund (1998). The integration is based on plausible mechanisms, which serve as a point of departure for theorizing. As such, the research model is specified as a tentative initial model, which can be re-specified based on the analysis of the empirical data. Although several models can be tested, the whole approach in this study is model generating rather than model testing.

When trying to identify potential constructs that could predict organizational emergence, there is no strong empirical evidence or theory available that would have guided the selection of relevant constructs. Take for example, legitimated elements. The institutional theory does not specify what could be the most important constructs of legitimated elements. Nor is the research in entrepreneurship able to produce a commonly accepted operationalization of the construct of Nascent Entrepreneur. In many cases, in fact, it is the researcher who decides which concepts represent the important aspects of the problem under investigation (Gil & Johnson 1991). Moreover, Miller (1983) argues that there are no general principles for determining the adequacy of a model because the selection of constructs and variables is determined by the theoretical frame of reference of the researcher and will always be open to scientific debate.

In this study, the selection of variables of the research model has been done in accordance with the existing empirical research. Moreover, the guiding themes throughout the discussion have been the seminal work of Gartner (1985) and Cooper (1993). Gartner defines that the organization creation process includes four dimensions: individual, organization, environment, and process (see Figure 2). According to him, it is not possible to understand the organization creation process unless all of the four dimensions are investigated, and an attempt is made to discover how variables of each dimension interact with variables of other dimensions. Therefore, these four dimensions are the guiding line for the search of constructs needed. Moreover, the framework of Cooper (1993) adds causal relationships to the previously identified four dimensions of organization creation process.

Legitimated elements are divided into three separate constructs. The construct of Nascent Entrepreneur represents the individual dimensions and is made up of variables related to knowledge and experience. The construct of Founding Team represents the organization dimension and is made up of variables related collective experience, collective educational level, team completeness and the size of the founding team. The construct of Market Conditions represents the environment dimension and is made up of variables related to industry competition, differences in products and strategies, resource scarcity, the life cycle of the industry and the newness of the demand. Furthermore, legitimating behaviors represents the process dimension of organization creation. It is divided into three separate constructs, namely Improvising, Networking, and Resource Combination. Each of these constructs is made up of a specific set of activities.

The previous constructs are based on a review of literature on different streams of research connected in some way to organizational emergence, and seek to attempt to abstract more lower-level variables into a small number of theoretical constructs. In addition, the theoretical and the research models were developed specially for the understanding of the organizational emergence phenomenon, not the conduct of existing organizations. Two theoretical perspectives were integrated to achieve a more complete understanding of the focal phenomenon. In addition, the models present one plausible mechanism to provide a tentative explanation of organizational emergence. As such, the integrated model attempts to achieve the following challenges laid out earlier (see 2.7.):

- To use limited number of abstract constructs and variables, instead of low-level variables. As response to the request of Davidsson (1991), this study investigates constructs that are more abstract. Indeed, the theoretical model uses theoretical constructs by abstracting a large number of low-level variables. As such, the theoretical model summarizes different theoretical perspectives into a single coherent frame, which can be used for empirical studies.
- To frame the complex phenomenon into a limited set of important dimensions. As pointed out, midrange theories have fewer constructs and variables within their structures; they present clear propositions and are presented in a more testable form (McKenna 1997: original Merton 1968). A good theory is a limited and fairly precise picture (Poole & Van de Ven 1989). By using a limited number of

variables, the models go against the logical conclusion that everyone is right and that every thing matters in organizational performance studies. The models take a firm standpoint by signaling that only some aspects of the complex phenomenon are important enough to be investigated empirically. In this study, we believe that scientific work begins when we are able to say that some things are more important than others in particular contexts.

- To increase our understanding of the organizational emergence phenomenon. Mainstream organizational studies seem to ignore the pre-organization period by placing their focus on existing organizations. The models were developed especially to take into account the specific context of organizational emergence.
- To offer a robust theoretical foundation for studies in the organizational field. The models are based on two theoretical perspectives, which offer apparently opposing views to organizational legitimacy. By integrating two apparently opposing views, a better explanation as to why and how different classes of theoretical constructs and lower-level manifest variables have an effect on organizational emergence. As such, the study draws on existing organizational theories and tries to apply them to a new context, i.e. the pre-organizational period.

## 4 METHOD

The fourth critical milestone of this study, the Task of designing is achieved in this chapter as a plan is laid out concerning empirical research of the focal phenomenon. According to Creswell (2003), there are three basic approaches to research: quantitative, qualitative, and mixed methods. The choice between these three is made largely based on the research problem. When the research problem involves the identification of factors affecting an outcome, then quantitative approach is the most suitable one. Since the objective of this study is to formulate a mechanism for the prediction of organizational emergence, it is logical that this study follows the quantitative approach. In the quantitative approach, a researcher starts with existing theories, derives hypotheses and explores them empirically. This kind of approach is called deductive. The deductive approach has already been used in this study because a conceptual and theoretical structure was developed in the previous chapters, prior to its empirical exploration. Following the deductive approach, this chapter will develop an empirical design to explore the developed research model with empirical observations.

The context of organizational emergence proposes a challenge for scholars because of the current state of affairs of the field. The fact that pre-organizations have not been a central issue of research, leads to a situation where relatively little is known about the factors influencing organizational emergence. It takes time to develop systematic knowledge about organizational emergence because access to information is limited. Nascent entrepreneurs do not have the obligation to submit information about their activities to public institutions for official statistics. Nor are they always willing to disclose critical information about their activities to third parties for confidentiality reasons. Therefore, special measures need to be taken to get access to pre-organizations. This often means that compromises need to be made concerning sample selection. Ideally, one would like to have access to all the pre-organizations at a given time period. However, for several reasons, of which the financial considerations are not the least important, one may have to accept a more restricted sample in order to have access to data. This, in turn, leads to questions about the generalizability of



the findings. All the possible tradeoffs and compromises will be discussed explicitly in this chapter.

Before getting into the details of the empirical design of this study, it is necessary to understand what is actually meant by the quantitative approach. According to Creswell (2003), three framework assumptions need to be considered for such an understanding: (1) philosophical assumptions about what constitutes *knowledge claims* (i.e. paradigmatic assumptions); (2) general procedures of research called *strategies of inquiry*; and (3) detailed procedures of data collection, analysis, and writing, called *methods*. Next, all the three framework assumptions will be summarized shortly before getting into the details.

First, in its knowledge claims, the quantitative research approach belongs to the post-positivist research tradition. Post-positivism challenges the traditional notion of the absolute truth of knowledge (Creswell 2003; original Phillips & Burbules 2000). Post-positivism recognizes that one cannot be "positive" about one's claims of knowledge when studying the behavior and actions of humans. The central notions of post-positivism are determinism and reductionism. According to the deterministic philosophy, causes probably determine outcomes. In their efforts to understand the human conduct, post-positivists seek to identify determinants that cause outcomes. Echoing these ideas, this study seeks to identify the determinants of organizational emergence, and has proposed that those determinants are legitimated elements and legitimating behaviors. Furthermore, reductionism refers to the scholarly aim to reduce ideas into a small, discrete set of ideas to test. This study has made a number of important decisions regarding the choice of different constructs that produce the integrated model. In addition, for post-positivists, the observation and measurement of the objective reality produces knowledge. Empirical investigation has also a central place in this study.

Second, strategies of inquiry provide a specific direction for procedures in a research design (Creswell 2003). The strategies associated with the quantitative approach include experimental designs and non-experimental designs. In this study, one kind of non-experimental design, that is, survey, is used as the strategy of inquiry. As a strategy of inquiry, survey has some key advantages compared to other strategies of inquiry, such as

the economy of design and the rapid turnaround in data collection (Creswell 2003). More specifically, this study adopts a cross-sectional survey strategy and uses a questionnaire for data collection. In a cross-sectional survey, the data is collected at one point of time. In this study, the cross-sectional data is collected using a self-administered questionnaire. Data collection procedures, measurement, sampling, and analysis are the major concerns of survey researchers. Furthermore, the integrated model of this study reflects an elaborate structural equation model that incorporates causal paths and the identification of the collective strength of multiple variables. A structural equation model is a more recent quantitative strategy of inquiry than traditional "true" experiments or non-experimental designs. (Creswell 2003)

Finally, to understand what a quantitative approach means, we need to look at its specific methods of data collection and analysis. Shortly, this study deploys quantitative predetermined methods with closed-ended questions and numeric data analysis. As such, this study developed a research instrument (a questionnaire) to collect numeric data for statistical analysis. Statistical analysis includes both descriptive statistics and second-generation multivariate analysis.

After the previous characterization of the quantitative approach, the discussion will next move to more specific issues regarding the research design of this study. Some key methodological issues will be discussed thoroughly: research design, population and sample size, questionnaire and pilot testing, data collection procedures, respondents' error, testing procedure, variable operationalization and measurement evaluation. As will be seen, a number of choices have been made concerning these methodological issues. It is important to be explicit about the methodological design if one intends to test theories in accordance with the standards of scientific rigor, which are guiding this study, too. As such, this study can be classified as belonging to nomothetic methodologies, which emphasize a systematic protocol and technique (Burrell & Morgan 1979).

#### 4.1 Research design

A research design is a plan specifying the methods and procedures for collecting and analyzing the information needed (Zikmund 2000). There are four basic research designs for descriptive and causal research: surveys, experiments, secondary data, and observation. A decision between different design techniques is generally based on the objectives of the study and the available data source.

The objective of this study is to formulate a mechanism for the prediction of organizational emergence. The formulation of the mechanism is done for the use of quantitative data and statistical analysis. This, in turn, calls for the use of a survey design approach. A survey design approach can be located somewhere between ethnography and experimental design (Gill & Johnson 1991). For example, the analytic survey approach has connections with the logic of deductive inquiry in its emphasis on reliability in data collection and the statistical control of variables, in place of physical control in laboratory. A survey instrument is a convenient and economical way to collect information in a larger scale. The drawback is that a survey generally limits itself to cross-sectional data. That is, data is collected at one point of time. The main data for the statistical analysis was collected using a survey instrument specially designed for this study.

In surveys, the three main data collection procedures used are mail questionnaires, telephone interviews, and personal interviews. While all the previous data collection procedures are in principle able to produce the same data by means of a structured questionnaire, there are differences between the procedures in terms of manpower required or financial costs. Telephone interviews and personal interviews require more manpower and thus may increase financial costs. Meanwhile, mail questionnaires often require less manpower and are financially less demanding. One of the main drawbacks of mail questionnaires is related to the fact that a researcher has limited ways of motivating the respondent to reply, which results in relatively poor return. Despite the drawback of a potentially low response rate, in this study, a mail questionnaire was used.

Moreover, the available data source is a more complex issue for this study. As stressed in the opening chapter, methodological convenience may be part of the explanation as to why pre-organizations have received little attention so far. The general problem is related to the identification of pre-organizations. Individuals and existing organizations are easy to identify. An individual has a name, social security number, etc. Likewise, an organization has a recognizable name, logo, and different number and codes related, for example, to TVA declarations and employer status. A pre-organization does not have the characteristics or properties of existing organizations.

Furthermore, in the case of existing organizations, many databases are available for researchers because existing, and especially listed, companies have the obligation to disclose information on their operations periodically. In the field of entrepreneurship, a nascent entrepreneur does not have any obligations to disclose information on his intentions to create a new organization. A nascent entrepreneur has all the interests to protect his ideas by keeping them for him until the project is implemented. It is a challenge to get information about a start-up when it has the status of a project. Moreover, information about incorporation or the acquisition of a business license is basically an activity of administrative duty. The possession of a business license can hardly be regarded as an organization. Since ready-made databases on pre-organizations do not exist, other ways have to be elaborated to identify pre-organizations.

#### **Finding a sample: Strategies to identify pre-organizations**

Katz and Gartner (1988) elaborated some strategies for the identification of pre-organizations by using the four emergence properties (intention, resources, boundaries, exchange). To carry out research on nascent entrepreneurs and their pre-organizations, scholars need to use one or several emergence properties to identify pre-organizations. Table 3 lists some of the potential sources of pre-organizations.

**Table 3.** Sources to identify pre-organizations by Katz & Gartner (1988).

Properties	Sources
Intention	Newspaper advertisements for potential entrepreneurs, Subscription lists to entrepreneurial magazines, Membership lists of entrepreneurial organizations, Directories of students or recent graduates, Customer lists of specialized organizations (Incubators, etc.), Participant lists of conferences on entrepreneurship
Resources	Informal investor networks, Venture capitalists' files, Bank files, Lists of new purchasers or renters of commercial equipment, Directories of new occupants in office buildings and commercial centers, Surveys of real estate agents to identify individuals inquiring about sites for firms.
Boundary	Licenses/permits, Tax numbers
Exchange	Unemployment insurance forms, Directories, Credit reports

Generally, scholars tend to focus on the boundary or the exchange properties to identify pre-organizations, whereas the intention and resource properties are less used (Katz & Gartner 1988). For example, when using the emergence property of Boundary to identify pre-organizations, one concentrates on issues such as telephone white pages, state unemployment insurance files, chamber of commerce listings, etc. (Gartner et al. 2003). Reynolds and Miller (1992) used the Boundary property to identify pre-organizations as the authors took a DMI (Dun and Bradstreet Identifier Files) listing to construct their sample. In this study, we try to avoid the use of the Boundary measure as a way to identify pre-organizations. As pointed out by Gartner and his colleagues (2003), the various Boundary property methods are not highly correlated to each other in their ability to identify the same organization; different methods for finding organizations result in substantially different numbers and types of organizations.

This study will use the property of Intention to identify pre-organizations. That is, this study identifies pre-organizations through the intentions of individuals to start a new business. Gartner and his colleagues (2003) make an important distinction between cognitive and behavioral intention. There is a difference between thinking of starting a new organization and acting to start a new organization. Before any action is taken to start a new organization, people generally think about possible business ideas. In fact, while many people think of starting a business, few people actually take actions to realize their dream.

To use only cognitive intention (i.e. when people start to think about new organizations), the process to arrive to a new organization could be very long. For example, Gartner and Carter (2003) found out from the PSED database that some nascent entrepreneurs had started to think about their business ideas in the 1950's. On the other hand, once people actually start to undertake actions the process of arriving at a new organization generally takes less time. For example, Reynolds and Miller (1992) found that about 80 per cent of pre-organizations underwent the whole gestation process within two years after starting the first event.

For this study, it is not enough to look only at the cognitive intention. What is more relevant for this study is behavioral intention. Then, what could be a manifestation of behavioral (and cognitive) intention to start a new business? While there is a debate whether formal planning and business plans have anything to do with organization creation success and performance, individuals who intend to start a new organization usually need to write a business plan. At least, this is the case today, as most of the entrepreneurship literature suggests that formal planning should take place prior to a new start-up (Coulter 2003; Sexton & Bowman-Upton 1991; Timmons 1999). A comprehensive plan assesses a pre-organization's environment and proposes strategies. A business plan is generally written in order to tell a convincing story to any individual or group of individuals who could be of help. A business plan generally includes some initial thoughts about a possible business idea and describes different aspects of the recognized opportunity. Moreover, a business plan is also an execution plan, i.e. a nascent entrepreneur lays down a plan about how to exploit the perceived opportunity. Therefore, this study uses written business plans as a sign of intention to start new businesses in order to identify pre-organizations.

An interesting question is what kind of pre-organizations feel the obligation to write business plans. Ideally, a business plan is written by the nascent entrepreneur to convince him-/herself and external parties to contribute to the pre-organization. Indeed, business plans are usually written to raise external resources, such as capital. It is very possible that a wealthy entrepreneur can start his or her business without outside help, and thus does not need to have a business plan. As pointed out earlier, this study implicitly starts with the definition of entrepreneurship by Stevenson and Jarillo (1990), who define entrepreneurs as

individuals who start businesses regardless of the resources currently possessed. Accepting the previous would mean that to succeed in organizational emergence, a pre-organization needs to acquire external resources such as manpower and financing. The need to acquire external resources leads to the assumption that pre-organizations are poor in resources.

A business plan is relatively easy to write, and, as such, there are thousands of business plans in the world. In every major business school, MBA and undergraduate students produce business plans each term. A business plan itself is not necessarily a sign of perfect commitment on behalf of its writer. However, there are at least two ways to find business plans written with some dedication and commitment. First, one can contact financial institutions, such as venture capitalists, and ask for access to their files. This method was used for example by Roure and Maidique (1986), Sandberg and Hofer (1987), and Roure and Keeley (1990). Another possibility of getting access to business plans is provided by business plan competitions. Business plan competitions are forums to which anyone can send his or her business plan in hope to get recognition, financing, or other benefits. The use of a business plan competition to get access to business plans to identify pre-organizations further supports the resource poorness assumptions; one participates in a business plan competition only when one is in need of external resources. Nascent entrepreneurs would not take their time to write a business plan and participate in a business plan competition if they had all the necessary resources. Therefore, a business plan competition is used for getting access to business plans in order to identify pre-organizations.

As such, this study uses a business plan competition to identify organizations that are in the gestation phase in their development. A business plan manifests the writer's intention to start a new business. The writer of a business plan has both the cognitive and the behavioral intention to start a new business. Generally, authors of business plans are looking for external resources if they participate in business plan competitions.

### **Sampling strategies**

Because this study uses a business plan competition to identify pre-organization, sampling becomes an interesting and challenging issue for the study. Sampling would not be an issue

if we could contact the whole population of pre-organizations. In a census study, information is gathered about every entity in a population (Fowler 2002). In reality, scholars do not have to conduct census studies. Instead, they generally use *probability sampling*. In probability sampling, every element in the population has a known non-zero probability of selection. Sampling includes any procedure that uses a small number of items or that uses parts of the population to make a conclusion regarding the whole population (Zikmund 2000). Traditionally, the discussion has concerned the choice of sampling strategy in order to be able to say something general about a given population. The chosen sample should be large enough to allow detection of general similarities and differences, because in smaller samples general similarities and differences face the risk of being confounded with the characteristics of individual cases, due to random sampling bias and stochastic variation (Wiklund 1998).

For this study, it is not possible to reach the whole population of pre-organizations in France at a given time, simply because the population is unknown. No surveys have been made concerning nascent entrepreneurs in France. Neither can we draw on a representative sample because we do not know the characteristics of the whole population in France. Since there are no official statistics about the number of people engaged in nascent activities in France, it is not possible to estimate how representative a given sample is at national level. Neither does a business plan competition provide a probability sample of pre-organizations because pre-organizations are not obligated to participate in such an event. Participation is voluntary and dependent on the choices made by nascent entrepreneurs. Because of the lack of advance knowledge about pre-organizational activity in France and of the lack of resources to conduct such a survey, it is not possible to carry out probability sampling procedures in this study.

Because this study uses a business plan competition to obtain pre-organizations, the method followed in the study is *convenience sampling*. Convenience sampling refers to the procedure of obtaining pre-organizations, which are most conveniently available (Zikmund 2000). Convenience sampling is one of the *non-probability sampling* procedures. In non-probability sampling, the probability of any particular member of the population being chosen is unknown. The consequence of using non-probability sampling is that data



projection beyond the sample is statistically inappropriate because there are no appropriate statistical techniques for measuring random sampling error. That is, there is no way to know the limits of the data used (Fowler 2002).

A drawback of the convenience sample is that it does not represent the total population of pre-organizations in France. As a consequence, based on the findings, this study cannot make generalizations about pre-organizations. The findings hold, at best, for the given sample. As such, restricted by the choice of possible sampling procedures, this study has an *exploratory* tone in its aims to investigate organizational emergence. Indeed, convenience samples are sometimes adequate for exploratory research (Sudman, Sirken & Cowan 1988). Later, additional research may be conducted with probability samples about organizational emergence. For example, the adoption of Panel Study of Entrepreneurial Dynamics (Reynolds 2000) to such countries as France and Finland would allow scholars to build a representative sample of nascent entrepreneurs, who are in the process of creating new organizations. The databases could be used, in turn, to test the propositions of this study.

## **4.2 Population and sample**

Tremplin Entreprise is a business plan competition organized by ESSEC Business School and the French Senate in France on yearly bases. The first edition of the business plan was organized in 1999. The basic idea of the business plan competition is to bring together nascent entrepreneurs, who are looking for external resources, and investors. This study has the opportunity to use two different editions of the Tremplin business plan competition, namely the years 2001 and 2002, in order to build a database of pre-organizations.

For both of the editions of the business plan competition, the submission of the business plans was done online ([www.tremplin-entreprises.senat.fr](http://www.tremplin-entreprises.senat.fr)). For the first time in 2001, the business plans were divided into two categories, namely, into the Development and the Emergence categories. When submitting their business plans, entrepreneurs chose the category to which they wanted to belong. The submission information presented to the nascent entrepreneurs included the idea that a business plan would fall into the

Development category if a firm had been formally established (incorporated). The Development projects can be seen as a sign of corporate entrepreneurship or spin-off efforts of existing organizations. Company development projects and other spin-off ventures are not the central part of the population that this study is considering. Even though corporate spin-off projects may share similar characteristics with independent start-ups, they nevertheless take place in a different kind of organizing context, making them generally more dependent on a corporate sponsor. In the Emergence category, on the contrary, the projects are not incorporated or are perceived as being independent from established organizations. Generally, the projects of the Emergence category are driven by individuals, not by existing organizations.

The two editions of the business plan competition were used in this study. In the 2001 edition of the competition, there were 95 business plans in the Emergence category. In the 2002 edition, there were 155 participants, of whom five had also participated in 2001. Thus, there were 150 new participants in the 2002 edition. When putting together the two editions, we get a *Tremplin population* of 245 for this study. The Tremplin population represents only the participants of the 2001 and 2002 editions of the national business plan competition. The Tremplin population will be used when calculating response rates.

#### **Getting to know the sample pre-organizations**

For a researcher, it is important to have some pre-knowledge about the population before conducting any surveys. As such, three actions were taken by the researcher to get familiar with the Tremplin population before collecting the main data for the statistical analysis. First, the researcher was part of the pre-evaluation team, which rated the business plans based on several different dimensions. This opportunity to act as a pre-evaluator made the researcher familiar with analyzing the business plans and gave a more detailed picture about the Tremplin participants. Second, a preliminary follow-up study was carried out in December 2001 among the participants of the 2001 business plan competition. Third, personal face-to-face interviews with the nascent entrepreneurs were organized in February 2002.

The preliminary follow-up study was carried out in order to familiarize with the nascent entrepreneurs' realities and to get a quick overview on the projects and the development of their activities. The follow-up study took place about 8 months after the submission of the business plans to the competition. The idea was to contact and to interview the entrepreneurs by telephone. A few interviews had to be postponed to January 2002. A typical interview lasted around 8 to 10 minutes. Most of the respondents were very cooperative.

In the Tremplin Entreprise 2001, there were 107 emergence business plans. Out of the 107 projects, 90 were successfully contacted and interviewed, which corresponds to a response rate of 84 per cent. There were only a few who did not want to provide any information. In most cases, the respondents could neither be reached by phone nor by e-mail (the phone number or e-mail address was not used any more, or there were no response to an e-mail). Out of the 90 interviewed projects, 12 turned out to be spin-offs of established companies and were therefore eliminated from a further analysis. This left 78 usable responses relating to emergence projects. Hypothetically, this leads to a possible total population of 95 emergence projects in the 2001 edition of the business plan competition. Since there were 78 responses among the emergence projects, the final response rate was 82 per cent.

Among all the projects, 71 per cent were still active nine months after the Tremplin competition. Moreover, 14 per cent were in a stand-by situation, another 14 per cent were terminated, and one (1.3%) project had been sold. Almost 53 per cent of the active projects have been incorporated six months after the competition. Around 33 per cent of the projects have made their first sales. More than 23 per cent of the projects have received subventions (public/locale, Anvar, etc.). More than 23 per cent of the projects have recruited since the Tremplin competition. Some 7 per cent of the projects have succeeded in raising risk capital.

The two face-to-face interviews with the nascent entrepreneurs were carried out at locations chosen by the nascent entrepreneurs. The interviews gave some insights into the practical problems of the nascent entrepreneurs (i.e. how to find financing or good contacts to

proceed) and helped in directing the search for explanatory factors. A preliminary questionnaire was prepared after the interviews during spring 2002.

### **4.3 Questionnaire and pilot test**

Using questions as measures is an essential part of the survey process (Fowler 2002). In this study, a self-administered questionnaire was designed to collect the main data for empirical testing. A self-administered procedure increases reporting accuracy, for example, in a situation where the respondents need to report events or behavior that extend over a period of time, because they provide more time for thought (Fowler 2002).

The final questionnaire was in French. Some of the measures were originally in English. Since the operational language of this study was English, an English version of the questionnaire was produced first. Then, three French persons translated the English version into French. All of the persons were native French speakers, and fluent in English. One of them was a doctoral student, the second an administrative person, and the third had his professional life in international business. The three results were compared. A tentative French version of the questionnaire emerged out of the three translations.

If one uses a mailed questionnaire, it is important to begin fieldwork by conducting a pilot study (Gill & Johnson 1991). Piloting is necessary because it is impossible to predict how the respondents will interpret and react to questions. As a pilot test of the questionnaire, 10 ESSEC part-time Executive MBA students filled out the tentative French questionnaire. In general, the students had had 7 years professional experience before participating in the Executive MBA program. Moreover, as part of their Executive MBA studies, the respondents were working on Entrepreneurial Projects. That is, they worked in teams of 3 to 4 people in order to start a new business. At the end of the Entrepreneurial Projects course, the teams had to present a business plan and make a presentation in front of a jury. Based on their general experience and on their specific assignments in the Executive MBA program, the respondents were regarded as representing rather closely the respondents of the Tremplin participants. In fact, one of the EMBA teams participated in the Tremplin

Enterprise business plan competition in 2002. However, neither the team's nascent entrepreneur nor the pre-organization was among the respondents of this study.

The EMBA students were asked to fill in the questionnaire and to make comments on the length, clarity, and wording of the questions. Based on the feedback, some modifications were made to the questionnaire. Due to the small number of respondents, it was not possible to test the preliminary research model using the pilot responses. After the pilot study, the tentative French questionnaire started to have its own life. Some items were deleted from and other added to the French questionnaire. In the final version of the questionnaire, there were 62 questions to be answered by the respondents. Out of the 62 questions, 42 were directly related to the main measures of the research model. In addition, three items were used to form the control construct, two items were used to reform a usable sample from the two editions of the business plan competition, five items to describe the respondents and the pre-organizations, and two items to identify the respondents of follow-up calls.

The instrument included eight extra questions that were not used in the final analysis. For example, the three items of question H4 were intended to be used for the estimation of the reliability of the three legitimating behaviors constructs. The questionnaire was designed before the exact method of reliability estimation was chosen. It was decided not to use the three items of the H4 question Homogeneity of measures –method to estimate reliability. Likewise, the question H3 asked for the satisfaction of the nascent entrepreneur. This item was included in the survey instrument just in case an alternative dependent variable would have been needed, which was not the case in the final analysis. In a similar vein, four questions asked how many changes had taken place in the pre-organization. In the end, these items did not fit the theoretical rationale of the research model.

Almost all the questions related to the measures of the research model were close-ended, that is, the questions could be answered by simply choosing a box from a set of responses provided by the researcher, thus minimizing completion time. Some questions included an additional question related to the timing of the activity/event under question. For example, if the respondent chose to answer that he had invested his own money in the project, an

additional question asked the respondent to specify *when* he had invested his own money for the first time.

In addition, a second version of the questionnaire was produced for situations where a project had been terminated or was otherwise inactive. The second version of the questionnaire collected identical information as the original one; the only difference was in the wording of the questions. For example, the original questionnaire included an item about the collective experience of the members of the actual team. In the second version of the questionnaire designed for terminated projects, the question was worded as the collective experience of the team just before the termination of the project. The modified version was produced to ensure that the respondents could answer all the questions regarding the state of their projects just before they were terminated. Therefore, when a respondent replied that his or her project was terminated and that he had not filled in the original questionnaire, the second version of the questionnaire was sent and the importance of the reply for this study was explained to the respondent.

Special attention was paid to the file format of the questionnaire because people do not use the same word processing programs. The questionnaire was saved in the PC format using the Word 6.0/95 format. This is a format that should open with the existing versions of the Word programs, and the most recent Apple formats. All the documents used for data collection are presented in the appendixes:

- Appendix 1 presents the cover letter explaining the purpose of the study. The cover letter accompanied the original questionnaire.
- Appendix 2 presents the final original French questionnaire, which was used to collect the data.
- Appendix 3 presents the cover letter of the reminder e-mail sent to nascent entrepreneurs if they failed to reply to the original e-mail.
- Appendix 4 presents the second version of the French questionnaire targeted at the terminated projects.
- Appendix 5 presents a cover letter for the modified questionnaire.
- Since all the questionnaires are in the French language, Appendix 6 presents the questionnaire items and indicates their use in the statistical analysis.

#### 4.4 Data collection procedure and response rate

The survey instrument, the questionnaire, was delivered by e-mail. E-mail is a relatively new method of distributing questionnaires. The benefits of e-mail include cheaper distribution and processing fees, faster turnaround time, and higher flexibility (Zikmund 2000). In fact, MacElroy and Geissler (1994) observed that when respondents are contacted to take part in an electronic study, they are more likely to participate than in identical research using written material. E-mail questionnaires seemingly arouse curiosity because of their novelty. Furthermore, respondents may reply to e-mail questionnaires more readily because e-mail questionnaires reach respondents when they are opening their e-mail and therefore are ready to interact. Yet, during the recent years, especially spam e-mails have created a negative attitude towards e-mail messages coming from unknown persons. The fact that spam e-mail messages represent more than 50 per cent of all e-mail messages posted through the Internet may create a negative attitude among the respondents towards e-mails and lead to a low response rate.

The questionnaire was sent out by e-mail to the contact person named in the business plan. When submitting their business plans to the Tremplin Entreprise competition through the web-site of the competition, one person's contact information was requested by the organizers of the business plan competition. These people were regarded as the nascent entrepreneurs or the lead entrepreneurs of each pre-organization. The data requested also included the e-mail address. Yet, among the 150 pre-organizations of the 2002 edition, the nascent entrepreneurs had a possibility of restricting the use of their contact information. That is, some of the nascent entrepreneurs did not want their contact information to be used by third parties. In total, there were 15 nascent entrepreneurs who did not want their contact information to be distributed. As a result, there were 135 pre-organizations with contact information available to third parties in the 2002 edition. Among the 95 pre-organizations of the 2001 edition, there were two cases in which the contact information was restricted. This leaves us with 93 pre-organizations with available contact information. As a summary, because we could not get every nascent entrepreneur's contact information, we ended up with 228 pre-organizations. The 228 pre-organizations represent the *available population* of this study.

The questionnaire was first sent to the 2001 participants of the business plans competition. Among the 93 e-mail addresses of the participants of the 2001 business plan competition, more than 30 did not work (the sent e-mail was returned back to the researcher). Google and other search engines were used to find the respondents' new e-mail addresses. As a result, 71 e-mail addresses worked and found a respondent. A total of 71 questionnaires were sent by e-mail to the participants of the 2001 business plan competition (reachable pre-organizations in the 2001 edition). The same procedure followed for the participants of the 2002 business plan competition. Out of the 135 contact e-mail addresses available to this study, 21 did not work. Google and similar searchers allowed the researcher to find three new addresses. Therefore, 117 questionnaires were sent to the 2002 participants (reachable pre-organizations in the 2002 edition). In total, 188 questionnaires were sent out. This can be called as the *reachable population* of this study.

If a respondent did not reply to the first e-mail, a remainder e-mail and two different versions of the questionnaire were sent ten days later. The wording of the original questionnaire was modified for situations where a project either was terminated or in a stand-by situation (see Appendix 4). The modification was made in order to make it easier for the respondents to reply in case their projects were not active any more.

A total of 73 questionnaires were returned by the respondents, representing a response rate of 30 per cent compared to the Tremplin population. From the 2001 edition of the competition, 25 responses were received, representing a 26 per cent response rate compared to the number of all pre-organizations in the 2001 edition (= 95). On the contrary, from the 2002 edition, a total of 48 business plans were received, which represents a response rate of 32 per cent compared to the number of all pre-organizations in the 2002 edition (= 150). This is not an unexpected result taking into account that the respondents from the 2001 edition had participated in the competition more than two and a half years ago.

Moreover, three questionnaires were filled out only partially. Therefore, they were excluded from further analysis. In the end, there were 70 usable questionnaires. Most of the 70 pre-organizations of the research sample were independent start-ups. Only three pre-organizations indicated that they were sponsored by an existing organization. These three



pre-organizations were kept in the sample to make maximum use of the returned questionnaires.

Furthermore, when using intention as a way to identify pre-organizations, one should be able to verify when the behavioral intention started. In connection with the PSED database, Gartner and his colleagues (2003) strongly recommend that when studying nascent activities, the activities should have started around the same time period. In their own study, Gartner and his colleagues (2003) used the time horizon of 12 months. That is, the nascent entrepreneurs should have reported their first start-up behavior within 12 months of the initial review.

Since this study is not using the PSED database, which is based on US data, this study will not be as strict concerning the start of the behavioral intention. In addition, the PSED database made cold calls to us citizens to identify individuals who could be in the process of starting a business. Using this kind of procedure, it is natural to identify individuals who are at very different stages in the process of creating a new business. In this study, on the contrary, all pre-organizations participated in the same event, i.e. a business plan competition. As such, we can estimate that they all were at a relatively similar stage during their start-up efforts. That is, they needed (they participated in the competition) and were ready (they prepared a business plan) to seek outside resources. All the pre-organizations were at the stage of looking for outside resources using a written business plan. Therefore, in the present study, the controlling of the start of the behavioral intention is not as difficult as in the case of the PSED studies.

However, since the fact is that this study is using two different cohorts of business plan competition, the data set includes entrepreneurs with no common starting point. That is, they all begun their efforts at creating a new organization at different times, even though they arrived at the point of participating in the business plan competition at the same time. Therefore, certain measures need to be taken to ensure that the sample of this study consists of a relatively homogenous group of pre-organizations that begun their efforts at creating new organizations approximately at the same time period.

The survey instrument included an item asking the respondents to provide information about (1) the time when they started to think about the business idea, and (2) when they took the first action towards creating a new organization. That is, this study was able to track down when the nascent entrepreneur first started to think about his or her business idea, and when he/she took the first action to realize the idea. It was defined that a pre-organization was started when, according to the respondents, the first action towards the creation of a new organization had been taken. The starting year was used to re-order the sample into one homogenous group of pre-organizations which begun their efforts at creating a new organization approximately at the same time period, regardless of which edition of the business plan competition they participated in. A frequency table for the number of pre-organizations each year is presented in Table 4.

**Table 4.** Number of pre-organizations started each year.

Starting year	Effective
2002	7
2001	22
2000	18
1999	11
1998	4
1997	3
1996	1
1995	0
1994	1
no year	3
TOTAL	70

One of the respondents indicated that he/she had started the action during 2003, which seems to be a typing mistake because the participant had participated in the 2002 edition of the business plan competition. The majority ( $n = 51$ ) of the nascent entrepreneurs took their first action during the years 1999 and 2001. There were three nascent entrepreneurs, who did not disclose information about the time of the first action taken towards establishing a new business, so their responses were excluded from further analysis. In addition, one respondent informed that he/she had started to think about the idea 10/1999, but did not

disclose when he/she had started to act on the idea. This case was classified according to the 10/1999 time. Moreover, among the usable responses of 70 pre-organizations, two had begun their nascent activities prior to the year 1997. They were excluded from further analysis. The year 1997 was chosen as a cut point to exclude the pre-organizations that had been started more than four years before the first Tremplin business plan competition of this study.

The remaining 65 pre-organizations form the *research sample* of this study and represent 27 per cent of the pre-organizations of the Tremplin population. The data from the 65 pre-organizations were used in the statistical analysis. All of the pre-organizations initiated their nascent activities during five years and arrived at the same point to participate in the national business plan competition at the same time. Table 5 summarizes the discussion by presenting the steps leading to the research sample that was used in the statistical analysis.

**Table 5.** From Tremplin population to research sample.

Sample / Population	Effective	%	Explanation
Target population	Unknown		The distribution of all pre-organizations in France unknown because of lack of national statistics.
Submissions	250		Number of submitted business plans to the 2001 (95) and 2002 (155) editions of the business plan competition
Tremplin population	245	100%	Total number of pre-organizations in the emergence category of the 2001 (95) and 2002 (149) editions of the national business plan competition (five business plans were presented in both 2001 and 2002).
Available population	228	93%	Total number of pre-organizations with contact information available for third parties.
Reachable population	188	77%	Total number of pre-organizations with an active e-mail address and to whom questionnaires were sent out.
Returned questionnaires	73	30%	Total number of questionnaires returned.
Usable questionnaires	70	29%	Number of completely filled in questionnaires.
Research sample	65	27%	Total number of pre-organizations started during 1997 or later. This is also the number of responses used in the statistical analysis.

## **4.5 Methodological rigor of the study**

This study uses a survey design to collect quantitative data from single respondents at one point of time. Along with the adopted design, several potential threats occurred to the validity of the results of this study. Four potential problems will be discussed here, namely respondent error, hindsight bias, common method variance, and censored observations.

### **4.5.1 Respondent error**

The major problem with mail surveys is related to response problems (Zikmund 2000). Mail surveys rarely have the 80 to 90 per cent response rate that can be achieved with personal interviews. In this study, everything was made to ensure a high response rate. Despite the efforts, 70 per cent of the reachable population did not respond to the survey. A low response rate may affect the reliability of a survey. For example, individuals who have a special interest in the topic tend to respond to such mail surveys but may not represent all the individuals in a sample. Moreover, self-selection bias is also related to self-administered questionnaires. Self-selection bias allows extreme positions to be overrepresented while those who are indifferent are underrepresented (Zikmund 2000). To ensure the reliability of a survey, it is recommended to use some form of verification to demonstrate that the non-respondents are similar to the respondents.

Before estimating respondent error, one needs to be reminded of one issue. If a probabilistic sampling strategy had been used in this study, the next step would have been, indeed, to estimate whether there are differences between the research sample and non-respondents to get an estimation about how well the research sample represents the chosen population. Based on the estimation, we could decide to what extent we could generalize the findings of this study regarding all the pre-organizations in France. Yet, because the population characteristics of pre-organizations are not known, due to the lack of national statistics about French pre-organizations, this study did not use a probabilistic sampling strategy. Instead, this study used a convenience sample, which belongs to the non-probabilistic sampling strategies. When using a convenience sample, even if we demonstrate that the

non-respondents are similar to the respondents in the sample, we still cannot claim anything beyond the Tremplin population. That is, even if the research sample and the non-respondents are similar, the research sample remains a convenience sample. The most this study can do is to demonstrate that the research sample is similar to the Tremplin population and therefore the findings concern this population only. With this issue in mind, next, a comparison is made between the research sample of 65 pre-organizations and the non-respondents to demonstrate whether the two groups are similar.

A Chi-square ( $\chi^2$ ) test of significance will be used to estimate whether there are differences between the respondents of the research sample and the non-respondents. Chi square is a non-parametric test of significance. It is suitable for nominal data where observation can be classified into discrete categories and treated as frequencies (Burns 2000). In the Chi-square test, the data is recoded in contingency table where the paired responses are categorized into cells. Since the sample size is relatively small in this study, the use of Chi square may not be appropriate. The Chi square test of significance may not approximate the theoretical  $\chi^2$  distribution very closely if the expected frequency in any cell is below five (Burns 2000). The detailed tables concerning the analyzed variables are presented in Appendix 7. As can be seen from Appendix 7, all the expected frequencies were at least equal or greater than five. Table 6 summarizes the Chi square tests for a number of variables.

**Table 6.** Chi square tests for respondent error.

Variable	Significance level
Industrial sector	.47
Product emphasis	.16
Gender of nascent entrepreneur	.96
Geographical location	.69
Laureates of business plan competition	.36
Starting mode	.05

As can be seen from Table 6, there are no statistically significant differences between the research sample and non-respondents, except regarding one variable, namely Starting

Mode. Among the respondents, 71 per cent of the pre-organizations were run by a team, whereas among the non-respondents 83 per cent were run by teams (see Appendix 7).

In addition, an independent samples t-test was conducted to evaluate the hypothesis that the nascent entrepreneurs of the research sample and non-respondents would differ significantly in age. The two samples are not different in regard to the age of the nascent entrepreneurs.

As a summary, the previous comparison of the research sample and the non-respondents demonstrates that the two groups are similar in terms of number of variables. The groups differ only in regard to one variable, i.e. Mode of Starting. Pre-organizations are started more seldom in teams among the pre-organizations in the research sample than among the non-respondents. However, in both groups, the proportion of team founding is substantially higher than that of solo efforts. Therefore, it could be concluded that respondent error should not be a major problem when analyzing the data. Moreover, we have learned that the pre-organizations of the research sample:

- represent different industrial sectors (emphasis on ICT),
- concentrate equally either on products or on services,
- come in equal proportions either from the region of Paris or from elsewhere,
- include a small number of laureates of the business plan competition,
- are started mainly by teams of founders,
- are predominantly run by male nascent entrepreneurs, and
- are run by nascent entrepreneurs, whose mean age is around 40 years.

#### **4.5.2 Hindsight bias**

According to Hawkins and Hastie (1990), hindsight bias is the tendency to assume that past events had to turn out as they did, and hence past events were more predictable than they actually were. Originally, the concept was introduced by Fischhoff (1977). Using the concept in the present context, a nascent entrepreneur's perception of the reasons why he/she did things is likely to be affected by the knowledge of the outcome of his/her

actions. The hindsight bias makes it difficult to establish the actual basis for nascent entrepreneurs' decision making and other behavior. Because this study asked the nascent entrepreneurs about their legitimating behavior retrospectively, the perceptions of nascent entrepreneurs may have changed or been restructured because the nascent entrepreneurs already knew the outcome of their efforts.

However, the hindsight bias may not be as worrisome as commonly assumed. In their meta-analysis of 122 studies concerning hindsight bias, Christensen-Szalanski and Willham (1991) found out that the overall magnitude of the effect of the hindsight bias was found to be small. In addition, this study did not focus on finding out why the nascent entrepreneurs chose some activities over others. Instead, the study asked the respondents to describe how much time and energy were devoted to carry out different activities. The respondents did not have to judge or reason why they did something; they were just asked to describe the activities they carried out. Therefore, although the presence of hindsight bias cannot be fully discarded in this study, it was estimated not to be a severe threat for the validity of the results of this study.

#### **4.5.3 Common method variance**

Findings from the survey studies that examine linkages between perceptual variables measured from single source should be interpreted with extreme caution (Tepper & Tepper 1993: 294). If measures were gathered from the same source in the same questionnaire, the question of common method variance is introduced as a potential explanation for the findings. Systematic errors resulting from common method variance may result in spurious correlations between the independent and dependent variables. That is, survey responses can be correlated as a result of "response sets" that introduce systematic error into survey data (Converse & Presses 1986). Moreover, if common method variance is present, it inflates the traditional estimates of reliability (Tepper & Tepper 1993). For example, alpha coefficients overestimate the proportion of true variance that measures capture. Since all measures were collected in the same survey instrument in this study, common method variance was a concern.

The possible effects of common method variance for the variables collected were tested using Harman's one factor test (Harman 1976). If common method variance were a serious problem in the study, we would expect a single factor to emerge from a factor analysis or one general factor to account for most of the covariances in the independent and dependent variables (Podsakoff & Organ 1986). All the main measures of the research model were factor analyzed using principal axis factoring where the unrotated factor solution was examined, which was recommended by Podsakoff, MacKenzie, Lee and Podsakoff (2003: 889). Kaiser's criterion for retention of factors was followed. The sample size seemed to be high enough for the factor analysis, at least based on Keiser-Meyer-Olkin measure of sampling adequacy ( $KMO = 0.537$ ), which was provided by SPSS-program along the factor analysis.

Factor analytic results indicated the existence of eleven factors with eigenvalues greater than 1.0. The eleven factors explained 75 percent of the variance among the 37 study variables, and the first factor accounted for 16 percent of the variance. Since several factors, as opposed to one single factor, were identified and, since the first factor did not account for the majority of the variance, a substantial amount of common method variance does not appear to be present. Thus, we conclude that common method variance bias is not a threat to the validity of the results. One should bear in mind that this procedure does nothing to statistically control for common method effect: it is just a diagnostic technique (Podsakoff et al. 2003: 889). As a result, the presence of common method problems cannot be fully discarded.

#### **4.5.4 Censored observations**

Observations are referred to as *censored* when the dependent variable represents the time to a terminal event, and the duration of the study is limited in time. When censoring, a distinction can be made to reflect the "side" of the time dimension at which censoring occurs. If we know exactly when an experiment started and if we terminate the experiment after a certain amount of time, we have right censoring: the censoring occurs on the right side of the time continuum. On the other hand, when we do not know when exactly a



phenomenon started but if we follow it till the end, we have left censoring. That is, the censoring occurs on the left side of the time continuum. Censoring is an important issue for this study too because no matter how effective our statistical method is, some information will be lost when analyzing censored data (Brook 1982).

The data set of this study is not complete, but censored. As can be seen from the last table of the Appendix 16, at the time of the main data collection, there were 21 new organizations, 7 terminated, and 10 in stand-by situation. The remaining 27 pre-organizations were not new organizations, neither terminated or in stand-by situation. As such, they were not completed by the time of the data collection (i.e. they were not observed for the full duration of time to emerge as a new organization). As such, the 27 pre-organizations represent right censored observations.

Moreover, earlier the Table 14 presented the years when pre-organizations were started in the research sample. The "oldest" pre-organization started in 1997 and the "youngest" in 2002. Because the pre-organizations were not started at the same time, the research sample could be considered as left censored. However, since all the pre-organizations participated in the national business plan competition in either 2001 or 2002, this could mean that the pre-organizations have a common "starting point": all the nascent entrepreneurs manifested their intention to create a new organization around 2001 and 2002. Because all pre-organizations entered the same particular state at the same time, left censoring does not seem to be an issue. Therefore, the research sample of this study is mostly right censored.

Faced with an incomplete data set, we could ignore the 27 censored observations and analyze the 38 uncensored complete observations. As a result, we would have a complete data set of 38 pre-organizations for the statistical analysis. The disadvantage of this approach is that we lose efficiency (Leung, Elashoff & Afifi 1997: 90). That is, we would lose a big part of the observations. Moreover, as will be discussed later (see Section 4.7.2.4.), the use of conservative heuristic would mean that we need at least 60 observations to produce reliable estimates of the research model of this study. Clearly, 38 observations would violate this conservative heuristic: statistical analysis with only 38 observations would not necessarily produce reliable estimates. Even though 38 respondents would be

high enough from the point of view of statistical analysis, complete data analysis may still produce biased estimates if censored observations are not completely missing at random (Little & Rubin 2002).

Despite the fact that the data set was not complete due to right censoring, we decided to use the data set of 65 observations in the statistical analysis. In addition, the analysis was run using the complete data set of 38 observations, which was not right censored. The results of the analysis of the complete data set are discussed after the analysis of the research model. When looking at the estimates produced by the complete data set, one should bear in mind that they may not be reliable due to low number of observations. However, as the discussion will demonstrate (see Section 5.3.2), the right censoring does not seem to affect the reliability of the estimates because the estimates of the complete data seem to correspond well to those of the right censored research sample. As such, the study fulfils an important measurement criterion, namely robustness (Cassel et al. 2000: 898): Even though preconditions are complicated in this study, mainly thanks to censored observations, good statistical properties are achieved. Based on the analysis of the two data sets, it could be estimated that the main results of this study are not affected by the incompleteness of some of the observations.

#### **4.6 Respondents**

In this section, a short description is given about the respondents, in addition to the description of the previous section. The respondent was the person whose name occurred in the administrative document filled out at the time of registration for the business plan competition. In very few cases, the original contact person had changed. This was an expected outcome because time had passed between the submission of the business plans and the survey. If the original contact person was not present any more, the pre-organizations were asked to name the person who was in charge of the project. In this study, the respondents are taken as the nascent entrepreneurs, or the lead entrepreneurs. Appendix 8 presents detailed tables related to each characteristic.

### **Age of respondents**

As can be seen from Appendix 8, among the nascent entrepreneurs of the research sample, the mean age was 39.9 years. The female nascent entrepreneurs were much older than the male nascent entrepreneurs were in the research sample (mean 46 years for females vs. 39.3 years for males). To study whether there was a significant difference between the mean age of females and males, an independent samples t-test was conducted. The mean age of females (46 years, SD = 10.6) is not statistically significantly different ( $t = 1.5 / p = .15$ ) from that of males (39.3 years / SD = 10.4). In addition, the youngest nascent entrepreneurs were in the ICT sector (mean 38.2 years) and the Commerce&Distribution sector (mean 38.2 years) while the oldest nascent entrepreneurs were in the Life science sector (mean 43.9 years) and the Service-non-internet sector (mean 43.5 years).

### **Marital status of respondents**

The questionnaire asked the nascent entrepreneurs to indicate whether they were married or not. In Appendix 8 we can see that 15, i.e. 38 per cent, of the nascent entrepreneurs were married. Among females, 40 per cent were married, while among males 37 per cent were married. The  $\chi^2$ -statistics indicate that there are no differences between the marital status of females and males. Yet, we have to interpret this estimation with caution because in two cells the expected frequency is below the recommended five (e.g. Burns 2000).

### **Educational level of respondents**

The questionnaire also included a question about the educational backgrounds of the nascent entrepreneurs. In Appendix 8, we can see that 34 per cent of the nascent entrepreneurs had a Master-level degree. Only about 20 per cent of the nascent entrepreneurs had an educational level lower than Master's degree. Moreover, another 30 per cent had postgraduate degrees (either a French DESS/DEA or Doctorate). Due to the low number of females and seven categories of educational levels, it was not possible to obtain reliable estimates of possible differences in the educational level between genders (too many cells had a frequency less than recommended 5). As a sum, the research sample does not reflect a great heterogeneity in terms of educational backgrounds of the nascent entrepreneurs. It seems that the nascent entrepreneurs were well-educated.

## 4.7 Testing procedure

In this study, the testing procedure is divided into two main sections. First, descriptive statistics are used in order to study differences between the successful and the non-successful founding of new organizations. Second, structural equation modeling is used to investigate the research model.

### 4.7.1 Descriptive analysis

The analysis is started with descriptive statistics. The research sample of 65 pre-organizations is looked at a bit closer in order to establish a picture about their nature. For the analysis, the research sample is split into two groups: new organizations and pre-organizations. A new organization has been created when all the five new organization markers have been met by a pre-organization. That is, a pre-organization has transformed itself into a new organization when it

- has created an “identification” boundary (opened a bank account or has a separate phone line), AND
- has created an “identity” boundary (has acquired an official registration as a business), AND
- has manpower resources (the nascent entrepreneur has committed himself/herself full time to the business or has recruited someone), AND
- has financial resources (has invested his/her own money or acquired external financing), AND
- has made the first sales.

Among the research sample of 65 pre-organizations, there were 21 (32%) pre-organizations, which were labeled as new organizations because they had met the five new organizational markers. The rest of the pre-organizations, that is 44 (68%), were still pre-organizations. Appendix 9 presents more detailed statistics about the five new organization markers.

To estimate whether there are differences between pre-organizations and new organizations, a comparison is made using two statistical tools. First, in a similar fashion to the estimation of respondent error in section 5.5, we will use a cross-tabulation analysis together with the Chi-square ( $\chi^2$ ) test of significance. As pointed out, the Chi square is a non-parametric test of significance and suitable for nominal data where observation can be classified into discrete categories and treated as frequencies (Burns 2000). When trying to understand whether there are any significant differences between new organizations and pre-organizations, we will be looking at several different variables, such as sector of activity, starting mode, geographical location, etc. To do the comparison, the data is recoded in contingency tables. Second, for continuous variables, the mean values of the two groups (new organizations and pre-organizations) are compared with a number of variables in order to find out whether the two groups differ systematically from each other. Student's t-test of significance is applied.

The descriptive statistics of the different sub-populations do not assess the predictive power of the research model, and as such, are not able to answer the research questions. Instead, the descriptive analysis provides background information, which is useful for the understanding of the differences between pre-organizations and new organizations.

#### **4.7.2 Structural equation modeling and PLS approach**

This study adopts a structural equation modeling (SEM) as a method to estimate the predictive power of the integrated models. That is, SEM is used to estimate the research model and answer the last research question. The theoretical foundations and practical implications of SEM has been discussed by several scholars (e.g. Fornell 1982; Fornell & Bookstein 1982; Wold 1982 a, 1982 b, 1985).

Structural equation modeling has been described as part of the second-generation multivariate analysis methods (Fornell 1982). The fundamental objective of methodology is to combine as well as to confront theory with empirical data, and to offer scientific explanations, which go far beyond description and the empirical association of the first

generation of multivariate methods (e.g. factor analysis, cluster analysis, multidimensional scaling, MANOVA, discriminant analysis, and principle component analysis). Second-generation multivariate analysis methods are also superior to first-generation methods for reasons such as allowing scholars to model relationships among multiple predictor and criterion variables, permitting the construction of unobservable latent constructs, and allowing to model errors in measurement for observed variables (Chin 1998 b). It is hoped that the fact that structural equation models can test complex models where the variation in the dependent variable is caused by a complex set of independent variables, which both correlate with the dependent and other independent variables, will help this study achieve its main objective.

Like standard regression models, SEM uses manifest variables, which are directly observable. Besides the use of manifest variables, the SEM models also use constructs (i.e. latent variables), which are not observable by direct way, such as attitudes, motivation, or intention. To make inferences about constructs, observable variables are used as indicators. As such, the technique allows us to avoid the trap of variable listing and to bring the analysis to a more conceptual level, as suggested by Davidsson (1991). Appendixes 10 and 11 present the research model in the form of a latent variable structural equation model. First, in Appendix 10 we find the different constructs of the integrated model. Circles are used to represent constructs (i.e. latent variables). Different constructs are joined together by arrows. The circles and arrows present a so-called structural model (or inner model). In addition to the structural model, SEM models include a so-called measurement model (or outer model). Appendix 11 adds the measurement model to the structural model by presenting the manifest variables (i.e. observable variables) that are used as the indicators of the constructs. The square boxes represent manifest variables. The arrows connect manifest variables to their constructs.

#### **4.7.2.1 SEM estimation methods**

The SEM methods include different estimation methods, which are used for different purposes. Perhaps the best-known estimation method is strongly identified with maximum

likelihood (ML) factor analysis procedures, generalized by Jöreskog (1970, 1973, 1979). The computer program associated with this procedure gives the approach its name, Lisrel (Jöreskog & Sörbom 1978). However, this study adopts the PLS path modeling (PLS) estimation method for a number of reasons. The objectives of these two estimation methods are different. Lisrel is parameter-oriented and aims at high accuracy in the parameters, whereas PLS is prediction-oriented and aims at high prediction accuracy (e.g. Wold 1982 a). Table 7 summarizes the coming discussion about the key differences between variance-based PLS and covariance-based Lisrel.

**Table 7.** Comparison of PLS and Lisrel estimations.

<b>Criterion</b>	<b>PLS path modeling</b>	<b>Lisrel</b>
<b>Objective:</b>	Prediction oriented	Parameter oriented
<b>Approach:</b>	Variance based	Covariance based
<b>Assumptions:</b>	Predictor specification (nonparametric)	Typically multivariate normal distribution and independent observations (parametric)
<b>Epistemic relationship between a latent construct and its measures:</b>	Either formative or reflective manifest variables	Reflective manifest variables
<b>Implications:</b>	Optimal for prediction accuracy	Optimal for parameter accuracy
<b>Model complexity:</b>	Large complexity	Small to moderate complexity (e.g. less than 100 indicators)
<b>Sample size:</b>	Recommended minimum range from 30 to 100 cases	Recommended minimum range from 200 to 800.

As an alternative to the covariance-based SEM analysis, the variance-based estimation of PLS shifts the orientation from causal model/theory to component-based predictive modeling (Chin & Newsted 1999). Based on different aims, the two models are not competitive but complementary (Wold 1982 a). Lisrel provides good estimates in small models, where the separate parameters have operative use. PLS, on the contrary, provides good estimates in large systems with many parameters where the emphasis is on prediction. Moreover, in order for Lisrel to provide good results, the structural relationships between

the constructs (the structural model) need to be known beforehand. PLS, on the contrary, is more applicable when prior information is wanting and theory is less developed (Fornell & Bookstein 1982). In fact, PLS has been referred to as “soft modeling” to describe its advantages in situations where theories and measurements are not “strong” but “soft” (Wold 1982 a). Indeed, this study is more exploratory than confirmatory by nature. The exploratory tone is needed because the mechanism behind the integration of the institutional theory and the resource dependence theory is not strong and because this study uses non-probability sampling procedures. Based on these main reasons, this study uses the PLS approach.

In addition to the different aims, PLS imposes substantially fewer conditions for use than Lisrel in order to be able to make an unbiased estimate (e.g. Chin & Newsted 1999). First, Lisrel assumes that the observed variables follow a specific multivariate distribution. Other least-squares based estimation processes do exist (GLS, ULS, WLS), and are indeed used in cases of non-normality. These other least-square based estimations yield estimators, which do not have as interesting statistical properties as maximum likelihood, unless very large samples are available. PLS estimation method, on the contrary, assumes that all observed measure variance is useful variance to be explained. As a result, PLS accepts data from non-normal or unknown distributions, and produces the best set of predictive weights with ‘consistent at large’ estimates. That is, PLS estimation is distribution-free.

Second, the Lisrel estimation method does not accept the use of formative manifest variables: only reflective manifest variables are used. PLS, on the contrary, accepts both reflective and formative manifest variables. Third, Lisrel requires the use of continuous variables. In reality, many scholars in organizational studies still use ordinal variables (e.g. Yli-Renko 1999; Puhakka 2002), such as Likert-scales, and thus violate the basic requirement of the Lisrel technique. The authors usually justify the use of ordinal variables by making the assumption that for each ordinal variable there is an underlying continuous variable in which we are interested, as it represents the attitude underlying the ordered responses. PLS, on the contrary, is not restricted to the use of continuous variables. Instead, it accepts nominal, ordinal, and interval-scaled variables (Fornell & Bookstein 1982).



Fourth, the Lisrel estimation method applies only to large samples, preferably of 200-400 observations for 10-15 variables, just as in other techniques based on ML estimation. Using conservative statistics, Lisrel requires 10 observations for each variable. PLS, on the contrary, is not restricted to large samples. In PLS, it is enough to have more observations than variables in a specific block, and more observations than composite latent variables.

In sum, the PLS estimation is used in this study because of its predictive orientation and usefulness at an early stage of a theorizing process where theoretical knowledge is not well developed. Moreover, PLS is advantageous also because it does not impose constraints in terms of sample size, parametric assumptions, and identification in order to be able to produce unbiased estimations.

#### **4.7.2.2 PLS estimation**

For the computational aspects and for theoretical developments, the PLS estimation method (i.e. PLS Path Modeling) has been mainly developed by Wold (1982 a, 1982 b, 1985) and by Lohmöller (1984, 1987, 1989).

There are three components in the PLS estimation of causal models: the structural model, the measurement model, and the weight relations (Cassel, Hackl & Westlund 1999). As already pointed out, the structural model refers to the inner relations by stating the relationships between the latent constructs, as in econometric models. The measurement model, by contrast, refers to the outer relations by specifying the relations between the constructs (i.e. latent variables) and the manifest variables. In addition, the weight relations define the estimated scores of the latent constructs as the weighted means of the manifest variables. As a principle, a latent construct is always an exact linear combination of its manifest variables. The weights are determined depending on the manifest variable mode. Latent constructs with reflective manifest variables represent the first principle component of the variables. A latent construct regresses on formative manifest variables. In addition to the three components, also means and location parameters (regression constants) for

manifest variables and latent constructs are estimated by the PLS algorithm (Chin & Newsted 1999).

The literature posits several descriptions of the PLS algorithms (e.g. Wold 1985; Fornell & Cha 1994). Here, only the core of the PLS algorithm is discussed. The algorithm consists of three steps. In the first step, the scores of the latent constructs are estimated as the weighted means of the manifest variables. This represents the outside approximation. In the second step, given the scores for the latent constructs, improved values are obtained as the weighted means of those latent constructs that, in terms of the inner structure, are adjacent. This step represents the inside approximation. After the initial estimation of the latent constructs, the estimation procedure iteratively switches between the inside and outside approximations until convergence is achieved. In the final step, the parameters of the structural model (inner relations), those of the measurement model (outer relations), and the means and the location parameters are estimated. Both the structural model and the measurement model determine the latent constructs, that is, in each iteration, both equations are used to find an approximation of the latent construct. The estimated scores will optimally fit into both equations. (Cassel et al. 1999)

#### 4.7.2.3 Manifest variable mode

As already indicated, in PLS there are two ways to relate manifest variables to their latent constructs, namely the reflective and the formative ways. In the reflective way, each manifest variable is related to its latent construct by simple regression, whereas, in the formative way the latent construct is a linear function of its manifest variables. Figure 9 illustrates the differences between reflective and formative manifest variables.



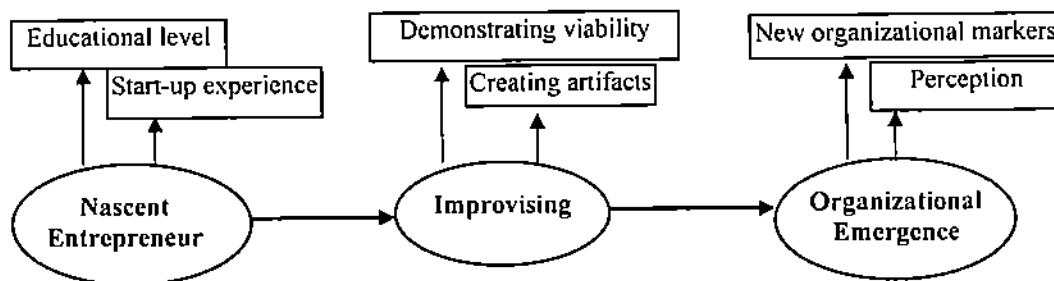
**Figure 9.** Latent constructs, manifest variables, and epistemological relations.

In the first case (I), we find reflective variables ( $X_1$ ,  $X_2$ ). The latent construct (A) gives rise to two manifest variables ( $X_1$ ,  $X_2$ ). For example, personality traits and attitudes are usually measured using reflective variables. In addition, in organizational studies, the construct of performance is often measured using reflective variables. The construct of "return", used by Cool, Dierickx and Jemison (1989), was reflected by three manifest variables, namely return on average assets, profit margin, and mean return on assets. One of the characteristics of reflective variables is that they are assumed to correlate with each other. When profit margin goes up, so does the mean return on assets and return on average assets.

On the contrary, when manifest variables give rise to an unobserved theoretical construct, we speak of formative variables. This is the case in the case II of Figure 9 where two manifest variables,  $Y_1$  and  $Y_2$ , form the variation in the latent construct B. For example, "social status" is a latent construct, which cannot be observed directly. Instead, we can use different manifest variables, such as occupation, income, and location of residence to make inference about social status. The formative manifest variables do not generally correlate with each other, i.e. change in occupation does not automatically change the location of the residence. That is, formative indicators need not be correlated nor have high internal consistency, such as Cronbach's alpha (Bollen 1984).

According to Fornell and Bookstein (1982), the choice of the mode of manifest variables (reflective or formative) substantially affects the estimation procedure. The difficulty in choosing one mode for manifest variables is caused by the fact that some constructs can be defined both ways. For example, the latent construct of "being drunk" can be formed by several formative manifest variables, such as wine drinking and beer drinking. While the two manifest variables do not necessarily correlate with each other, both wine drinking and beer drinking form the variation of "being drunk". On the other hand, "being drunk" can also be reflected in manifest variables, such as alcohol in blood, the balloon test and the straight-line walking test. In this latter case, all manifest variables tend to correlate with each other; that is, the more one has alcohol in his or her blood, the worse she or he is bound to do in the straight-line walking test and in the balloon-test.

According to Fornell and Bookstein (1982), the choice between formative and reflective manifest variables can be based on three major criteria: (a) study objective, (b) empirical contingencies, and (c) theory. First, if one seeks to explain *observed* variance, reflective indicators are the most suitable. On the other hand, if one seeks to explain *unobserved* (or abstract) variance, formative variables are the most useful. Second, empirical elements also affect the choice of the mode of manifest variables. In the formative mode, sample size and indicator multicollinearity affect the stability of indicator coefficients. The indicator coefficients are based on multiple regressions. In the reflective mode, indicator coefficients are not affected by multicollinearity and are based on simple regressions. Finally, the conceptualization of latent constructs also shapes the manifest variable mode. Latent constructs deriving from psychology, such as personality or attitude, are typically made of reflective manifest variables. For example, personality gives rise to something that is observed. When latent constructs, on the other hand, are conceived as explanatory combinations of manifest variables determined by a combination of variables, their manifest variables should be formative. When deciding between the three criteria, according to Lohmöller (1984), the most important criteria for choosing the manifest variable model are theoretical. The proposed integrated model of this study and all its manifest variables are reflective. A simplified model of the integrated model of this study, leaving out most of the constructs and manifest variables, will serve as an illustration of the relationship between manifest variables and constructs. Figure 10 illustrates the simplified model.



**Figure 10.** Simplified model with constructs and reflective manifest variables.

As seen from the simplified model in Figure 10, the construct of Nascent Entrepreneur is made of two reflective manifest variables, educational level and start-up experience. The

manifest variables are reflective because they reflect the variation of the construct and are assumed to be correlated with each other. That is, when qualities of the nascent entrepreneur (e.g. human capital) increase, educational level and start-up experience increase automatically. In a similar vein, the Improvising constructs is reflected in two manifest variables (demonstrating viability and creating artifacts), as indicated in Figure 10. An increase in improvising behavior is reflected in demonstration activities and artifacts creation. Finally, the dependent construct of this study, Organizational Emergence, is reflected in two manifest variables. It is assumed that when new organizational markers have been met by the pre-organization, this also affects the perception of the nascent entrepreneurs. The remaining constructs (Founding Team, Market Conditions, Networking, and Resource Combination) follow the same logic. That is, they are also made of reflective manifest variables. Appendix 11 presents the full, integrated research model.

#### **4.7.2.4 Sample size requirement for unbiased PLS estimation**

To reach an unbiased estimation in statistical analysis has some consequences on the requirement for a minimum sample size. A small sample size generally restricts the choice of available statistical tools. From the point of view of more traditional estimation methods, a research sample of 65 cases is considered small. For example, in the case of the Lisrel estimation method the minimal recommendations range from 200 to 800 cases (Chin & Newsted 1999). The use of the PLS estimation method, on the contrary, does not require as large a sample size to produce reliable estimates. Due to the partial nature of the estimation procedure of the PLS estimation, only that portion of the model that requires the largest multiple regression needs to be found (Chin & Newsted 1999). For an initial sense of the sample size required by the PLS estimation, one can look at the graphical presentation of the integrated model and find the largest between the two following possibilities:

1. The block with the largest number of manifest variables (i.e. the largest measurement equation), or
2. The dependent construct with the largest number of independent constructs influencing it (i.e. the largest structural equation).

Appendix 11 presents the research model of this study in a graphical form. The research model can be used to study the two possibilities. About the possibility number 1, the blocks with the largest number of manifest variables are Founding Team and Market Conditions. Both of these blocks are made up of six manifest variables. What comes to possibility number two, Organizational Emergence is the dependent construct with the largest number of independent constructs influencing it. There are seven independent constructs affecting the dependent constructs when the control construct is taken into account.

In regard to how many cases are needed per predictor, several rules of thumb are available depending on how conservative or liberal one wants to be. A conservative rule of thumb is to use 10 cases per predictor (Chin & Newsted 1999). Using the conservative rule of thumb for regression heuristic, the minimum sample size requirement would be 70 cases in this study. Meanwhile, a very liberal statistician would use the rule of thumb of two cases per predictor. That is, it would be enough to have more cases than variables in a block and more cases than composite constructs. In the present study, very liberal statistician would be happy with 14 cases. Finally, somewhere midposition between conservative and very liberal statisticians lays the rule of thumb of five cases per predictor. Some statisticians call this mid-position as the weak rule of thumb for multiple regression (Tabachnik & Fidell 1989). In this study, the midposition would indicate that for seven predictors of organizational emergence, one needs at least 35 cases to get unbiased estimations. Therefore, depending on the regression heuristic, to have unbiased estimations, the PLS estimation of the research model requires a minimum sample size between 14 and 70 cases.

As reported earlier, the research sample of this study is made up of 65 cases, which is well above the limit of 14 cases, applied by very liberal statisticians, and the mid-position of 35 cases but slightly under 70 cases, advocated by the conservative rule of thumb. Because of the exploratory tone of this study, the sample size of 65 cases can be considered as acceptable. Moreover, the use of the conservative heuristic the simple model of organizational emergence, which has six independent constructs (see Figure, page 194), only requires 60 cases to produce reliable estimates. That is, PLS is able to produce reliable estimates –conservatively thinking- for the simple model with the sample size of 65.

#### **4.7.2.5 Selecting a program to execute PLS algorithm**

The PLS estimation method has not gained wide popularity despite its suitability for soft modeling. The unpopularity may partly be attributed to the lack of user-friendly software. To date, the only possibility in regard to software was associated with the original Lohmöller's program LVPLS 1.8 (e.g. 1984), which is a MS-DOS based program and requires some basic understanding of programming skills (Fortran).

This study was fortunate in the sense that it had the chance to be a beta-tester for a non-commercialized graphical program called SPAD & PLS Path Modeling to execute the PLS algorithm. The graphical version of the PLS program is the result of a European project called ESIS (European Survey of Information Society). The first beta-version was operational between January-March 2004. The improved beta-version was operational between May-August 2004. The final analysis was made in August 2004 using the improved beta-version. The final version of the software was not available until the summer of 2004.

#### **4.7.2.6 Model validation in PLS estimation**

Critics toward SEM include that there is no simple, straightforward way to test the fit of the model (Brannick 1995). PLS estimators lack the parameter precision of maximum-likelihood estimation (Fornell & Bookstein 1982). The consequence of this is that the PLS estimation does not estimate overall goodness-of-fit for the global model. That is, a statistic measuring the global validity of the model does not exist in the PLS estimation. On the other hand, this study does not need a goodness-of-fit measure. Fit indices only relate to how well the parameter estimates are able to match sample covariances and not how well the constructs or item measures are predicted. In fact, based on measures such as  $R^2$  and factor loadings, a model with good fit indices may still be considered poor.

Because PLS does not make a distributional assumption in its procedure for estimating parameters, traditional parametric-based techniques for significance testing are not

appropriate when evaluating PLS models. Only statistics related to each structural regression are available. The fit indices used by the PLS estimation are descriptive statistics indicating the amount of variance accounted for in the model by the specified relationships. To evaluate PLS models, one should use non-parametric prediction oriented measures (Chin & Newsted 1999). For example, Chin and Newsted (1999) suggest the use of  $R^2$  for dependent latent constructs, the Stone-Geisser test (redundancy) for predictive relevance (Stone 1974; Geisser 1975), and Fornell and Larcker's (1975) average variance extracted measure (communality) to assess predictiveness.

PLS models are usually analyzed and interpreted in two stages: (a) the assessment of the measurement model, (b) and the assessment of the structural model (Hulland 1999). In this study, the assessment of the measurement model (outer model) concentrates on four issues:

- 1) *Unidimensionality* of the measures with three different tools (Principal Component, Cronbach's alpha, and Dillon-Goldstein's Rho).
- 2) *Convergent validity* relating to assessment of the Communality index (i.e. Fornell-Larcker's AVE).
- 3) *Discriminant validity* relating to comparing Communality indexes (i.e. Fornell-Larcker's AVE) and squared correlations between constructs.
- 4) *Monofactorial validity* relating to manifest variable loadings on their own and on other constructs.

The assessment of the structural model (inner model), on the other hand, concentrates on two issues:

- 1) The *quality of the structural model* relating to  $R^2$  assessment.
- 2) The *quality of each structural regression equation* relating to the Redundancy index (i.e. Stone-Greiner  $Q^2$ ) and the significance levels of the regression coefficients.

For the estimation phase, all the manifest variables are normalized. That is, the original measures are transformed into normalized measures where the minimum possible value is zero and the maximum possible value is equal to 100. For example, the questionnaire used the Likert-scale from one to seven for many manifest variables. To normalize these manifest variables, the following formula was used:



$$\text{Normalized value} = (\text{the value of original item} - 1) * (100 / 6).$$

Appendix 12 presents a table, which indicates all the formulas used for normalizing each manifest variable. Appendix 13 presents the means, standard deviations, and extreme values of the manifest variables, whereas Appendix 14 presents the means, standard deviations, and extreme values of the normalized manifest variables.

When executing the PLS estimation, several important options need to be chosen for parameter estimation. The following options were selected when the PLS estimation was executed with the SPAD & PLS Path Modeling software:

- 1) Missing data treatment: no replacement
- 2) Analyzed data: standardized data, weight without rescaling
- 3) Inner estimation mode: Centroid
- 4) Regression type: OLS regression
- 5) Maximum number of iterations = 100
- 6) Model quality: Blindfolding

First, no replacement was used for missing data. Second, the manifest variables were standardized (mean 0, variance 1) for the parameter estimation phase and for the final expression of the weights and loadings. Standardization is needed when the scales of the manifest variables are not comparable. For example, the age of respondents and the scale (1 to 7) of collective managerial experience are not comparable. Third, in centroid mode, inner weights are equal to the signs of correlations between constructs. Fourth, OLS regression is used in the absence of multicollinearity. Fifth, the estimation used 100 iterations. Sixth, the blindfolding procedure was used to estimate the quality of the model. The blindfolding procedure computes the redundancy and the communality indexes for the endogenous constructs. For the statistical expression of the chosen options, one can look at Chatelin, Esposito Vinzi, and Tenenhaus (2002).

## 4.8 Measures

For any scientific research, it is important not only to use abstractions to build theories, but also to translate the abstractions into observables for empirical exploration. Operationalization means creating measures that represent empirically observable instances of the construct under investigation. In other words, constructs need to be overtly linked to something that is observable and whose variation is measurable (Gill & Johnson 1991). Appendix 15 summarizes the items used in the statistical analysis.

In scientific research, it is common to make a distinction between objective and subjective measures. Objective measures are supposed to be independent from individuals. For example, if the purpose is to measure the performance of an ongoing firm, scholars usually use financial indicators such as return on equity (ROE) or profitability, which are taken, for example, from the annual result of the firm. Subjective measures, on the other hand, refer to measures that are dependent on individuals. To continue the previous example, if we ask an entrepreneur whether he is satisfied with the financial performance of his firm, we are using a subjective measure. There are necessarily no connection between the subjective measure of performance and the objective one. Studies have shown, however, that the two seem to be correlated. Chandler and Jansen (1992) found strong evidence for the reliability of measurement and the validity of constructs when using founders' self-evaluations about their competencies.

The decision between the two types of measures is usually related to the question about access to data. When a scholar does not have an ongoing relationship with an organization, he is likely to rely on subjective data obtained from entrepreneurs because relevant information is too difficult to ascertain. Chandler and Hanks (1994) have pointed out that, in the case of start-up firms, it is difficult to find suitable objective measures of the environment for multi-industry samples of privately held start-ups. To assess the environment within which a pre-organization operates requires expert knowledge. Indeed, nascent entrepreneurs are experts whose perceptions have usually been used as indicators of environmental characteristics. Another advantage of subjective data is that subjective data can also be collected on virtually any aspect of an organization's behavior (Smith, Gannon

& Sapienza 1989). When using subjective assessment, it is assumed that respondents can overcome perceptual biases to a large degree (Castrogiovanni 1991). As such, in this study, all the collected information came from respondents. In a sense, all the data is subjective because it is based on self-reported data. This is not an unusual way in entrepreneurship research to gather empirical data concerning external environment or an industry. Scholars have used self-reported data to measure, for example, competitive intensity (Delmar 1996), customer and supplier concentration (Wiklund 1998), and environmental dynamism (Puhakka 2002).

A few words about choosing different scales. First of all, most of the manifest variables were measured with ordinal scales. The problem with ordinal scales is that it is problematic to assume equal distances between different values (e.g. Delmar 1996). For example, when using rating scales, we do not know if the distance between 1 and 2 is equal to 3 and 4. The use of ordinal scales is especially problematic in the use of classical regression analysis. PLS estimation, on the other hand, is indifferent what comes to the use of different scales (Fornell & Bookstein 1982). Second, when using original scales, agree-disagree items are very popular. That is, after a respondent has read a statement, he is asked if he agrees or disagrees with it. An alternative to agree-disagree scales are straightforward rating scales. When using ratings scales, respondents are asked to rate, for example, their running condition (excellent, very good, good, fair, or poor). According to Fowler (2002), the advantage of using rating scales over agree-disagree items comes from the fact that rating scales have a better ability to sort respondents into several categories, whereas agree-disagree items are almost always analyzed by putting respondents into two groups, namely "agrees" or "disagrees". Moreover, agree-disagree items can only be asked about the extremes of a continuum, which limits the ability to order respondents in the middle of a continuum. Therefore, when measuring variables, this study uses rating scales. The scales are built in such a way that the two opposite ends of an item are described. For example, a founding team may have very good experience in starting new businesses vs. no experience at all. The middle choice in the item indicates a neutral stand between the two poles.

#### 4.8.1 Dependent variable

Organizational Emergence is the dependent construct of this study. The construct is reflected in two variables, namely the perception of the entrepreneur (values from 1 to 4) and a composite measure made up of new organization markers (values from 0 to 5). The variable perception of the nascent entrepreneur was adopted from the handbook of the PSED research project (Reynolds 2000). The measure of new organizational markers is new.

The perception of a nascent entrepreneur was measured by question [A1] in the questionnaire. The nascent entrepreneur was asked whether he or she perceived that the pre-organization (a) was in business; (b) was still working to start business; (c) was in stand-by situation; or (d) had terminated the project. The scale was coded by giving the option (a) the value of 4; the option (b) the value of 3; the option (c) the value of 2; and the option (d) the value of 1, respectively. As such, the variable of perception could range from 1 to 4.

New organization markers were measured by questions [A2 to A9] in the questionnaire. The interviewees were asked whether the pre-organization had achieved the following new organization markers: (a) the firm had been registered (boundary property); (b) a separate phone line or bank account had been created (boundary property); (c) the lead entrepreneur had devoted his time or had hired someone (resource property); (d) the lead entrepreneur had invested his own money or acquired outside funding (resource property); and (e) the first sales had been achieved (exchange property). The value 1 was coded each time a pre-organization had achieved one new organization marker. The questionnaire also provided the respondents with the possibility of choosing an option "not needed for the advancement of the project". For example, not all projects need to recruit or get outside financing. If a pre-organization indicated that a new organizational marker was not needed, the value of 1 was attributed. As such, the manifest variable of a new organizational marker could range from 0 to 5. Table 8 presents the manifest variables of the dependent variable.

**Table 8.** The manifest variables of Organizational Emergence.

Construct	Manifest variables	Questionnaire item	Scale
<b>Organizational Emergence</b>	Perception of being in business	[A1]	4 when [In business = yes], OR 3 when [Currently working on = yes], OR 2 when [Stand by = yes], OR 1 when [Abandon = yes]
	New organizational markers	[A2-A9]	1 when [Firm registration = yes], AND 1 when [Separate phone line or Bank account = yes], AND 1 when [Devoted full time or Hired someone, or no need = yes], AND 1 when [Invested own money or Acquired finance, or no need = yes], AND 1 when [First sales = yes]

#### 4.8.2 Independent variables

##### Nascent Entrepreneur

The measure of the construct of Nascent Entrepreneur is new and reflected in five variables, namely the age of the nascent entrepreneur, management experience, start-up experience, industry experience, and educational level.

Nascent entrepreneurs were asked to prove their age in question [H8]. For the different experiences, in the questionnaire, the respondents were asked to rate their level of industry experience [D1], start-up experience [D2], managerial experience [D3], and their highest educational level [B2]. A scale from 1 to 7 was created. In the scale, the two ends of the continuum are described and the respondents are instructed to rate their situations between the two poles. Table 9 presents the manifest variables of the construct of Nascent Entrepreneur.

**Table 9.** The manifest variables of Nascent Entrepreneur.

Construct	Manifest variables	Questionnaire item	Scales
Nascent Entrepreneur	Industry experience	[D1]	Ordinal scale from 1 to 7
	Start-up experience	[D2]	Ordinal scale from 1 to 7
	Managerial experience	[D3]	Ordinal scale from 1 to 7
	Educational level	[B2]	Ordinal scale from 1 to 7
	Age	[H8]	Age in years

### Founding Team

The measure of the construct of Founding Team is new and reflected in six variables: size of the team [E2], collective managerial experience [E3], collective start-up experience [E4], collective industry experience [E5], collective level of education [E7], and team completeness in terms of competencies [E6]. The size of the team was indicated by the number of people working with the nascent entrepreneur to start the business. The respondents were asked to rate all the indicators related to different experiences and to the collective educational level in a scale from 1 to 7. If a pre-organization did not have a team of founders, i.e. there was only a solo nascent entrepreneur, the value of zero was attributed to each variable. Table 10 summarizes the discussion concerning Founding Team and its manifest variables.

**Table 10.** The manifest variables of Founding Team.

Construct	Manifest variables	Questionnaire item	Scale
Founding Team	Size of the team	[E2]	Number of team members
	Collective managerial experience	[E3]	Ordinal scale from 1 to 7
	Collective start-up experience	[E4]	Ordinal scale from 1 to 7
	Collective industry experience	[E5]	Ordinal scale from 1 to 7
	Collective level of education	[E7]	Ordinal scale from 1 to 7
	Team completeness in terms of competencies	[E6]	Ordinal scale from 1 to 7

### Market Conditions

The measure of Market Conditions was adopted and modified from Chandler and Hanks (1994). The original scale was developed further into a two-dimensional scale. In the

original construct of Chandler and Hanks (1994), the respondents were asked to agree or to disagree regarding different statements concerning the indicators.

As such, the construct of Market Conditions is reflected in six variables included in question [C1]. The variables were differences between firms of the industry in terms of strategies (reverse coding), differences between firms in terms of products/services (reverse coding), level of competition, stage of development of industry (reverse coding), newness of demand (reverse coding), and availability of resources (reverse coding). A scale from 1 to 7 was created. Table 11 presents the manifest variables of the construct of Market Conditions.

**Table 11.** The manifest variables of Market Conditions.

Construct	Manifest variables	Questionnaire item	Scale
Market Conditions	Differences in strategies (reverse coding)	First item of [C1]	Ordinal scale from 1 to 7
	Differences in products (reverse coding)	Second item of [C1]	Ordinal scale from 1 to 7
	Level of competition	Third item of [C1]	Ordinal scale from 1 to 7
	Lice-cycle of the industry (reverse coding)	Fourth item of [C1]	Ordinal scale from 1 to 7
	Newness of the demand (reverse coding)	Fifth item of [C1]	Ordinal scale from 1 to 7
	Availability of resources (reverse coding)	Sixth item of [C1]	Ordinal scale from 1 to 7

### Improvising

The measure of the construct of Improvising is new and reflected in four variables: lending materials from friends, speaking about the business as if already created, demonstrating the viability of the project with all means, and creating artifacts. The questions related to these variables are the four first items of the question [B1]. The variables were measured using a Likert scale from 1 to 7. The respondents were asked to rate the extent to which they had used their time and energy on these different activities during the creation process. Table 12 summarizes the discussion concerning the manifest variables of the construct of Improvising.

**Table 12.** The manifest variables of Improvising.

Construct	Manifest variables	Questionnaire item	Scale
Improvising	Borrowing material from friends for the business	First item of [B1]	Ordinal scale from 1 to 7
	Speaking about the business as if already created	Second item of [B1]	Ordinal scale from 1 to 7
	Demonstrating the viability of the project by all available means	Third item of [B1]	Ordinal scale from 1 to 7
	Creating a logo, special paper, business cards to demonstrate the existence of the business	Fourth item of [B1]	Ordinal scale from 1 to 7

### Networking

The measure of the construct of Networking is new and reflected in six variables: talking to potential customers, contacting potential suppliers, using friends & acquaintances to meet important people, looking for a R&D partner, looking for technology partners, and looking for marketing partners. The variables were measured using the Likert scale from 1 to 7. The respondents were asked to rate the extent to which they had used their time and energy on these different activities during the creation process. Table 13 summarizes the discussion concerning the manifest variables of the construct of Networking.

**Table 13.** The manifest variables of Networking.

Construct	Manifest variables	Questionnaire item	Scale
Networking	Talking to potential customers	Fifth item of [B1]	Ordinal scale from 1 to 7
	Contacting potential resource providers	Sixth item of [B1]	Ordinal scale from 1 to 7
	Using friends & acquaintances to meet important people for the project	Seventh item of [B1]	Ordinal scale from 1 to 7
	Looking for R&D partners	Eight item of [B1]	Ordinal scale from 1 to 7
	Looking for technology partners	Ninth item of [B1]	Ordinal scale from 1 to 7
	Looking for marketing partners	Tenth item of [B1]	Ordinal scale from 1 to 7



### Resource Combination

The measure of the construct of Resource Combination is new and reflected in five variables: developing existing technology, buying or renting facilities, obtaining equipment, finalizing the prototype, and making a marketing study. All the variables were measured in the items of question [B1]. For each variable, a scale from 1 to 7 was created. The respondents were asked to rate the extent to which they had used their time and energy on these different activities during the creation process. Table 14 summarizes the discussion about the manifest variables of the construct of Resource Combination.

**Table 14.** The manifest variables of Resource Combination.

Construct	Manifest variables	Questionnaire item	Scale
Resource Combination	Developing existing technology	Eleventh item of [B1]	Ordinal scale from 1 to 7
	Buying or renting facilities	Twelfth item of [B1]	Ordinal scale from 1 to 7
	Obtaining equipment	Thirteenth item of [B1]	Ordinal scale from 1 to 7
	Finalizing a prototype	Fourteenth item of [B1]	Ordinal scale from 1 to 7
	Making a marketing study	Fifteenth item of [B1]	Ordinal scale from 1 to 7

### 4.8.3 Control variables

It is important to control various external influences. For example, technological sophistication may lead to a longer development process. At least, Schoonhoven et al. (1990) observed that for new organizations pursuing higher degrees of technological innovation, there is an increase in the waiting time before the shipment of their first product.

The technological sophistication of the pre-organization was reflected in three variables: availability of similar products/services five years ago, self-evaluation of the high-tech nature of the project, and R&D spending. These variables were measured as part of the question [H1]. The variables were adopted from the handbook of the PSED research project (Reynolds 2000). A bipolar scale from 1 to 7 was created. Table 15 summarizes the discussion concerning the manifest variables of Technological Sophistication.

**Table 15.** The manifest variables of Technological Sophistication.

Construct	Variables	Questionnaire item	Scale
Technological Sophistication	Availability of products & services 5 years ago	First item of [H1]	Ordinal scale from 1 to 7
	Self evaluation of high-tech status	Second item of [H1]	Ordinal scale from 1 to 7
	R&D spending	Third item of [H1]	Ordinal scale from 1 to 7

In addition to technological sophistication, the age of a pre-organization was originally used as a control variable. The measure was calculated using the question G2 in the questionnaire asking when the nascent entrepreneur took first time action for the project. Each pre-organization got an age based on the number of quarters that had passed since it started. The preliminary analysis demonstrated that the control construct Age did not have a significant impact on the dependent variable. Due to requirements related to getting unbiased estimations (sample size and number of constructs in the model), the control construct Age was not used in the statistical analysis.

#### 4.9 Evaluating measurements

A defining property of survey research is that answers to questions are used as measures (Fowler 2002). Therefore, an important aspect of survey instruments is related to the evaluation of the measures. According to Zikmund (2000), there are three good measures for evaluating measurements: reliability, validity, and sensitivity. Reliability is the degree to which measures are free from error and, therefore, yield consistent results (Peter 1979). In regard to validity, scholars distinguish between external and internal validity (Cook & Campbell 1979). Internal validity, on the one hand, refers to the ability of instruments to measure what they are supposed to measure (Fowler 2002). External validity, on the other hand, refers to the generalizability of the study findings. In this section, only internal validity will be discussed. External validity will be assessed in the discussion chapter of this study at the same as when the generalizability of the results of this study is discussed. Finally, sensitivity refers to the ability of a measurement instrument to measure variability

in responses (Zikmund 2000). Since reliability is a necessary condition for validity (Zikmund 2000), it will be discussed first.

#### **4.9.1 Reliability**

A measure is reliable when the outcome of the measurement process is reproducible, that is, when similar results are obtained over time and across situations (Zikmund 2000). According to scientific principles, for any form of assessment, there is a true score, an observed score, and an error score. For a measure to be reliable, the error score should be as low as possible. In other words, the true score and the observed score should be as close to each other as possible. In reality, the error score is always present. For example, a respondent misunderstanding a question results in low reliability. The mood and motivation of the respondent as well as other situational characteristics may also introduce errors to measurement.

To estimate reliability, several methods have been put forwards. For example, Burns (2000) presents four methods, which all are based on the idea of comparing sets of scores and calculating correlation coefficients. Moreover, reliability is also ensured and estimated qualitatively. In this study, the reliability of all the measures is ensured qualitatively a priori administrating the questionnaire. Then, reliability is estimated by computing correlation coefficients for all of the measures of the research model.

#### **Ensuring reliability**

Following the recommendations of Fowler (2002), to ensure reliability of measures, special attention was paid to the ambiguity of wording, standardized presentation, and vagueness in the response form. First, this study used a self-administered questionnaire. All the respondents of the sample received the same questions to ensure consistency. In addition, the respondents were given the same set of answers that constitute an appropriate response to the questions regarding the main variables of the research model. That is, closed questions were used for the measurement of the main variables. By doing this, it is assumed that differences in the responses are due to the differences among respondents rather than

from differences in the stimuli, to which the respondents were exposed. Indeed, to have reliable measures, one needs to use the same indicators of a concept and to standardize the recording of the results of any observation (Gill & Johnson 1991).

Furthermore, the research instrument –the questionnaire – was tested in two occasions for wordings to make sure that the questions were understandable and not ambiguous, because academic vocabulary often does not correspond to the one used by non-academic persons. Indeed, unambiguous questions that provide consistent measures across respondents are always a constructive step for good measurement (Fowler 2002). The questions were also designed to be easy to answer, and did not require a thorough investigation of the respondents' own situation. For example, revenues, numbers related to personal wealth or taxes were not asked about. Neither were the respondents expected to know the full histories of their founding partners when completing measures related to the variables of the construct of Founding Team.

As often as possible, measures were transformed into Likert-type scales to ensure the easiness of replying, in order to avoid causing major changes in the mood or motivation of the respondents. For respondents, it is easier to evaluate something between two extremes (a scale from 1 to 7) than to provide exact numbers or figures. For example, for the construct of Founding Team, all the measures were Likert-scale statements. As such, ordinal scales were created. It is common to use ordinal scales when great precision is not needed and when the task of reporting an exact number is considered too difficult (Fowler 2002). Only simple numbers were asked about, such as the number of founding partners or the length of different personal experiences. Furthermore, the survey instrument was kept as short as possible. It is more likely that the relatively short span of attention of the respondents would allow them to fill in a short questionnaire at once.

### **Estimating reliability**

To estimate reliability, Burns (2000) presents four methods, which all are based on the idea of comparing sets of scores. When sets of scores are correlated, the measure is reliable. For example, in the Test-retest method, the same instrument is administrated to the same respondents at two separate times. Similar results should be obtained from the reported and

the first test. The problem with the test-retest method is that it requires a longitudinal approach, that is, time needs to pass between the two administrations of the instrument. For example, Burns (2000) estimates that a two- to three-month period is the best between the two measurement points. When time passes, the situations of individual respondents may change (e.g. the team composition changes in a pre-organization). While the instrument would be reliable, the respondents' changing situation may lead to a decision to classify a reliable instrument as unreliable. In addition, respondents may answer the retest based on their memory of the first test. As such, a high correlation coefficient would occur between the test and its retest. For this reason, Churchill (1979) suggests that Test-retest reliability should not be used. Therefore, the Test-retest –method was ruled out in this study.

Another possibility of estimating the reliability of measures is provided by the so-called Alternate forms method. In this approach, two instruments are built based on different indicators. The two instruments should be comparable in terms of content, length, difficulty level and variance. Once administered to respondents at the same time, the two instruments should yield similar results. The difficulty in using this method is related to efforts to make sure that the two forms of the instrument are equivalent. It also requires a double the effort to build two different instruments for the same purpose. Therefore, this method was also ruled out as not suiting the present purpose.

Moreover, the Homogeneity of the measure, a method developed by Kuder and Richardson (1937), looks at the internal consistency of measures (unidimensionality). To be reliable, different indicators used to form a construct need to correlate with each other. The studies of Wiklund (1998), Yli-Renko (1999), and Puhakka (2002) all used the homogeneity of measures method to compute reliability coefficients for unidimensionality. The fourth method is called the Split-half method and is based on similar assumptions of internal consistency as the previous method. In the Split-half method, reliability is assessed by splitting a measure into halves. The score obtained on one half of the measure can be correlated with the scores on the other half of the measure.

In this study, all the constructs are made of reflective manifest variables. As pointed out, reflective variables are based on the assumption that indicators reflect the property of the

construct and therefore correlate with each other. Because of this aspect of reflective variables, we can estimate the unidimensionality (internal consistency) of the measures. Therefore, homogeneity of measures was used to estimate the reliability of measures.

In ML-based estimation methods (such as Lisrel), the internal consistency of measures is estimated before the analysis of causal relationships. To estimate the internal consistency, factor analysis is generally deployed. With the PLS estimation method, however, the estimation of internal consistency of the measures is done at the same time as the analysis of causal relationships. This is because the PLS estimation computes constructs in order to maximize the correlation among constructs, rather than maximizing factor communality (Wiklund 1998). The different aims of factor analysis and the PLS estimation method leads to a situation where the two estimations of internal consistency can produce different estimates. Therefore, the internal consistency (unidimensionality) of measures will be reported along with the results of the PLS estimation of the research model. As will be seen in the Section 5.2.1.1., all the measures are unidimensional based on several statistical tools (Principle Component, Cronbach's Alpha, and Dillon-Goldstein's Rho). This in turn, leads to the conclusion that all the main measures of the research model are reliable.

#### **Reliability of the total instrument: Qualitative assessment**

As a last one of the efforts to estimate reliability, one has the possibility of looking at the returned questionnaires and estimating reliability qualitatively. If the returned questionnaires do not include missing values, that is, all the questions are answered by the respondents, this can be taken as a sign of reliability. In this study, the returned questionnaires were checked for missing values. No constant patterns were identified regarding the main measures of the research model. Occasionally, the respondents had not answered a certain question, but none of the measures was systematically left unanswered. This was taken as a sign of the general reliability of the main measures of the research model.

In addition to the questions relating to the main measures of the research model, the survey instrument also included several additional questions. For example, the questionnaire collected data about the timing of new organizational markers, such as when the first sales

were made, or when the nascent entrepreneur devoted him-/herself full-time to the project. These questions were intended to be used to construct a more longitudinal dataset. Yet, for unknown reasons, most of the respondents did not take their time in providing information about the timing of different new organizational markers. As such, survey items related to the timing of new organizational markers were omitted from the analysis.

#### **4.9.2 Validity**

All researchers interested in reliable measures should take a special care about validity, too. This is because if a measure is valid, it is reliable (Churchill 1979). The converse is not necessarily true, that is, even a perfectly reliable measure may not be valid. A measure may always produce the same result over time and across situations, but the measure may not be measuring what we wanted it to do. Therefore, the second measure for evaluating measurements is validity.

Internal validity concerns the ability of measures to measure what they are supposed to measure (Zikmund 2000). Validity information gives indications of how well a test measures a given area, under certain circumstances and with a given group (Burns 2000). Literature distinguishes between at least five types of internal validity: predictive, concurrent, content, face, and construct validity (Burns 2000).

##### **Predictive and concurrent validity**

Predictive and concurrent validity are both characterized by prediction to an outside criterion and by checking a measuring instrument against some outcome (Kerlinger 1973: 460). That is, both are concerned with predicting performance on some other criterion. The difference between predictive and concurrent validity is that concurrent validity concerns present day's performance, whereas predictive ability compares later performance with the original test score (Burns 2000). An intelligence test, for example, predicts both the present and the future ability to learn and to solve problems. In this study, it is not possible to estimate the predictive validity of the construct because the study is not longitudinal. A longitudinal design would allow one to observe on whether constructs could predict

something about the future. Yet, it is possible to estimate the concurrent validity of constructs. If constructs have concurrent validity, they should be able to predict the dependent variable. This will be tested in the coming chapter where the empirical evidence will be analyzed with the PLS estimation method, which is a prediction-oriented second-generation multivariate method (see Section 5.2.).

### **Content validity**

Content validity, on the one hand, is the sampling adequacy of the content of a measuring instrument. When considering content validity, one is trying to estimate whether the measures used correspond to and cover the phenomenon under study (Metsämuuronen 2000). Content validity is often estimated based on expert judgments (Burns 2000). When considering face validity, on the other hand, a scholar can make a test to look as if it is measuring something (face validity) while, in fact, the test is actually measuring something else. High face validity will motivate a respondent to answer a test in a business-like way (Burns 2000). In a sense, both face validity and content validity refer to the same issue, namely to the subjective agreement among professionals that a measure logically appears to reflect accurately what it purports to measure (Zikmund 2000). In this study, existing theories and frameworks have been used to identify important constructs. When operationalizing the constructs, again, existing studies have been used as guidelines to find meaningful and widely accepted content for each of the constructs. Therefore, it is estimated that the content and the face validity of the measures are good.

### **Construct validity**

Of the five types of validity, the most important one for this study is construct validity. Construct validity is concerned with the ability of a measure to reflect the proposed hypothetical construct. That is, through construct validity, we try to estimate what property is actually being measured (Burns 2000). A good start for construct validity is reliable measures. Indeed, one can also try to increase the construct validity of a measure by making the measure as reliable as possible (Fowler 2002). This study did its best to ensure and to estimate the reliability of the measures used. Moreover, according to Barron and Kenny (1986), construct validity requires multiple independent and converging measurements. That is, a large common factor revealed by factor analysis can be taken as evidence that



performance in a set of measures reflects the proposed hypothetical construct (Burns 2000). To reach construct validity through a common factor method, scholars generally deploy multiple questions, which can help even out response idiosyncrasies (Cronbach 1951). To establish the construct validity of a measure, according to Churchill (1979), two issues need to be determined: (1) the extent to which the measure correlates with other measures designed to measure the same thing (unidimensionality), and (2) whether the measure behaves as expected (convergent, discriminant, and monofactorial validity).

The establishment of construct validity occurs during the statistical analysis of the data: if the measures behave the way they are supposed to, there is evidence for construct validity (Churchill 1979; Zikmund 2000). Therefore, in this study, the construct validity of all the measures is estimated together with the statistical analysis of the empirical data. As will be seen in the Section 5.2.1.1, the measures demonstrate unidimensionality and behave as expected. This, in turn, leads to the conclusion that the measures have good construct validity.

### **4.9.3 Sensitivity**

The third aspect of evaluating measurements is the sensitivity of a measure. According to Zikmund (2000), sensitivity refers to the ability of a measure to measure variability in responses. Sensitivity is a crucial issue, for example, when one is trying to investigate changes in the attitudes of respondents. Even though this study does not measure change over time, it is nevertheless important that the measures are sensitive enough to demonstrate differences between the respondents. As often as possible, seven-scale Likert-scales were used. The PLS estimation method allows the use of ordinal scales. It was hoped that a scale of seven would allow the appearance of possible differences between respondents.

One issue related to scales and sensitivity concerns the question format. Scholars often use the agree/disagree type of questions. That is, the respondents read a statement and then choose an answer based on to what extent (i.e. in the scale 1 to 5) they agree or not. Yet,

studies have shown that some respondents are likely to agree when questions are put in the agree/disagree format. Moreover, agree/disagree questions, in order to be interpretable, can only relate to the extremes of a continuum (Fowler 2002). According to Fowler (2002), this feature limits the ability of agree/disagree items to order people in the middle of a continuum. As such, an agree/disagree item is not necessarily sensitive.

Instead of using agree/disagree items, this study uses *rating* items to maximize sensitivity. For example, the construct of Market Conditions was adapted from Chandler and Hanks (1994). However, the original item was presented as agree/disagree questions. The original item was transformed into a rating scale by asking the respondents to rate each item along a continuum of 1 to 7. For each question, both ends of the continuum (1 and 7) were described.

## 5 RESULTS

The fifth critical milestone of this study, the Task of testing, is achieved in this chapter. In addition, the third research question is answered. That is, the chapter will show how well the different constructs can predict organizational emergence.

The findings are reported in different sections. Section 5.1 compares new organizations and pre-organizations to see how they differ from each other, if at all. Section 5.2 estimates the research model and other models of organizational emergence using PLS path modeling (PLS estimation) and makes an effort to identify the best predictors of organizational emergence.

### 5.1 Comparing pre-organizations and new organizations

Section 4.6 provided a description of the pre-organizations of the research sample and compared these characteristics to the whole Tremplin population. This section looks at the 65 pre-organizations of the research sample a bit closer in order to establish a more detailed picture about them. For the analysis, the research sample is split into two groups, namely new organizations and pre-organizations, as explained in Section 4.7.1. The splitting method results in 21 new organizations and in 44 pre-organizations.

Two types of statistical tools are used to compare the two groups: cross-tabulations together with the Chi square test (for categorical variables) and Student's t-test of significance (for continuous variables). The section helps us to familiarize ourselves with the research sample, which, in turn, will be useful for interpreting the results of the PLS estimation of the research model.

Table 16 summarizes the discussion about the descriptive statistics related to the comparison of pre-organizations and new organizations in the research sample. Even though the  $\chi^2$ -statistics indicate that there are no differences between the industrial sectors

of new and pre-organizations in terms of most of the variables, we have to interpret these estimations with caution because occasionally the expected frequency in the cells of contingency tables is below the recommended five (e.g. Burns 2000). The small frequency number in some cells was due to the small research sample.

**Table 16.** Chi square statistics related to pre-organizations vs. new organizations in the research sample.

Variable	Significance level
Sector of activity	.30
Starting mode	.85
Geographical location	.42
Gender of nascent entrepreneur	.61
Laureate of Tremplin enterprises	.61
Perception	.00

As can be seen from Table 16, only the perception of the nascent entrepreneurs is statistically significant between the two groups. The Chi square statistics ( $\chi^2 = 24.17$ / d.f = 3,  $p = 0.000$ ) suggest that it is necessary to reject the null hypothesis at the 0.000 level, and accept the alternative hypothesis that there is a significant difference between the two groups in terms of perception of the nascent entrepreneurs. Therefore, the research sample and the non-respondents differ from each other in terms of perception of the nascent entrepreneurs. This result further validates the use of a composite dependent variable in the PLS analysis in which the perception forms the dependent variable together with the composite measure made up of five new organizational markers. Appendix 16 presents more detailed tables about each variable.

We can look at some of the independent manifest variables of the research model to evaluate the hypothesis that pre-organizations and new organizations differ significantly in regard to these manifest variables. The aggregate mean differences of manifest variables between new organizations and pre-organizations can be compared. As such, the independent manifest variables are treated as continuous variables to calculate the means.

Later, the same manifest variables are used in the PLS estimation to investigate the predictive relevance of the research model and its constructs.

The mean of most of the independent manifest variables of new organizations is not statistically significantly different from that of the pre-organizations. Appendix 17 presents all the manifest variables of the research model and the t-statistics related to them. As can be seen from Appendix 17, only the mean of the six manifest variables is statistically significantly different between new organizations and pre-organizations. Table 17 presents the six manifest variables.

**Table 17.** T-test and the six manifest variables separating new organizations and pre-organizations.

Variable	New organization	Pre-organization	Student's t-test	Significance level
Differences in Strategies (Market Conditions)	4.9 (2.1)	3.6 (2.1)	2.3	.03
Differences in products (Market Conditions)	5.3 (1.6)	3.8 (2.2)	2.7	.01
Stage of development of industry (Market Conditions)	6.0 (1.1)	4.3 (2.3)	3.3	.00
Finding technology partners (Networking)	3.4 (2.0)	4.5 (1.8)	2.2	.03
Buying or renting space (Resource combination)	3.0 (2.0)	2.0 (1.5)	2.2	.03
Level of product innovation (Technological sophistication)	5.6 (1.6)	6.3 (1.1)	2.0	.05

Three of the manifest variables are related to the construct of Market Conditions. The means of the manifest variables Differences in Strategies, Differences in Products, and Stage of Development of the Industry of the new organizations are statistically significantly different from those of the pre-organizations. The means of the manifest variables of the new organizations are significantly higher from those of the pre-organizations. It seems that

the market conditions are more favorable among the new organizations: there is much more variety in the industries in terms of strategies between the firms and the products, and the industries are at an early stage of development.

In addition, one manifest variable of networking and one of resource combination also differentiates the two groups. More specifically, it seems that pre-organizations invest statistically significantly more time and energy to find technology partners (4.5 vs. 3.3). By contrast, pre-organizations invest statistically significantly less time and energy to buy or to rent space (2.0 vs. 3.0).

Furthermore, one manifest variable of Technological Sophistication, namely the Level of Product Innovation, also splits the two groups. It seems that the products of pre-organizations are statistically significantly more innovative than the ones of new organizations. In other words, new organizations seem to have less innovative products than pre-organizations.

As a summary, the pre-organizations and new organizations in the research sample do not differ from each other substantially when looking at some of the available background information. The only statistically significant difference between the two groups is related to the perception of the nascent entrepreneurs. The nascent entrepreneurs of new organizations perceive statistically more significantly that they are running an active business. This difference is not a surprise. Instead, it validates the use of two manifest variables for the dependent variable. The experiencing of new organizational markers is connected to the perception of the nascent entrepreneurs. The two groups also had a statistically significant difference what comes to the individual items of the market conditions measure, which would make one to expect that the constructs would bear some relevance in the PLS estimation, too.

## 5.2 PLS estimations

The focus in this section lies on testing two things: (1) the ability of the different constructs to predict organizational emergence, and (2) an estimation of the relative importance of the different constructs for the prediction of organizational emergence. As such, the section will estimate the concurrent validity of the constructs, i.e. whether the theoretical constructs can predict organizational performance.

As pointed out earlier (see Section 4.7.2.6), causal models are validated at two stages. First, the quality of the measurement model (outer model) needs to be validated. Second, the quality of the structural model (inner model) needs to be estimated. This sequence ensures that we have reliable and valid measures of constructs before attempting to draw conclusions about the validity of construct relationships.

The analysis will start with the research model, and advances thereafter based on the information provided by the estimates. As a results, several different models will be analyzed. Because the PLS estimation includes some exploratory elements, an interplay between theory and data is allowed. In fact, according to Hulland (1999) there is nothing inherently wrong in making use of alternative models, because in the early stages of theory refinement such comparisons often play a critical role. Therefore, to take advantage of this feature, we will also explore and play with the data and the model to look for the best explanation for organizational emergence. At the end of this section, we will try to choose the best model for the prediction of organizational emergence before bringing out the predictors of organizational emergence. Although several models can be tested, the whole approach in this study is model generating rather than model testing.

### 5.2.1 The research model

The following discussion related to the estimation of the measurement and structural models will be extensive in order to make sure that the reader can follow the exact process of establishing the validity of the structural and measurement models.

### 5.2.1.1 Quality of the measurement model

When validating PLS models, the first concern of the researcher is the quality of the measurement model, that is, the quality of the constructs. The issue of construct validity was already started in the section concerning the validity issues of the measures. What needs to be demonstrated is that the measurement model demonstrates good convergent, discriminant, and monofactorial validities. Moreover, before the validity assessment, the measures need to show unidimensionality.

#### Unidimensionality of measures

If the blocks of manifest variables are unidimensional, measures are reliable. In this study, the measurement model for each block is reflective, except the one of Technological Sophistication. In reflective mode, a block of manifest variables is unidimensional in the meaning of factor analysis. In addition, individual item reliability needs to be evaluated.

The unidimensionality of the measures was an iterative process to find the best set of manifest variables for each construct. First, the complete research model including all the manifest indicators was run by the PLS estimation. If the data does not fit in the model (e.g. a priori knowledge about unidimensionality), then blocks can be modified by removing some manifest variables, which are far from the model. Another solution is to change the model and to use the formative way.

When running the PLS estimation for all the manifest variables, some of the blocks turn out not to be unidimensional. In the blocks of the constructs of Nascent Entrepreneur and Market Conditions, the sign of the correlation of some the manifest variables was reverse compared to the other manifest variables of the same block. In addition, the constructs of Improvising and Resource Combination did not show very high unidimensionality. Therefore, by using the information provided by the PLS estimation (the sign, the weights, and correlations of the individual manifest variables) the following fine tunings were made for the blocks of the research model:

- 1) Regarding the construct of Nascent Entrepreneur, the manifest variables Educational Level and Personal Industry Experience were removed from the block.



As a result, the construct of Nascent entrepreneur was made up of three manifest variables: Start-up Experience, Managerial Experience and Age. With these changes, the measure of Nascent Entrepreneur reflects mainly the experience of the nascent entrepreneur, i.e. his/her tacit knowledge.

- 2) The manifest variables of Environmental Munificence, Level of Competition, and Newness of Demand were removed from the construct of Market Conditions. As a result, the construct was made up of three manifest variables: Differences in Strategy, Differences in Products, and Stage of Development of Industry. With these changes, the construct reflects mainly the characteristics of the chosen industrial sector and the target market.
- 3) The manifest variable of Borrowed Material was removed from the construct of Improvising. As a result, the construct of Improvising was made up of three manifest variables: Speaking-as-if, Creating Artifacts, and Illustrating the Potential.
- 4) The manifest variables of Discussing with Potential Clients, Using Friends for Access to Information, and Finding Marketing Partners were removed from the construct of Networking. As a result, the construct of Networking was made up of three manifest variables: Contacting Potential Suppliers, Finding R&D Partners, and Finding Technological Partners. With these changes, the constructs reflects well the side of networking activity in which the focus is on enlarging the existing network.
- 5) The manifest variables of Developing Existing Technology and Doing Marketing Study were removed from the construct of Resource Combination. As a result, the construct of Resource Combination was made up of three manifest variables: Finalizing the Prototype, Buying or Renting Space, and Getting Equipment.
- 6) One item (Perception of the High-tech Status) was taken away from the control construct because the weight and correlation had different signs. As a result, the construct of Technological Sophistication was made up of two manifest variables: Level of Product Innovation and R&D Emphasis. In addition, it was decided to change the model to formative mode.

There are three statistic tools available to check the unidimensionality of a block of manifest variables: Principal component analysis, Cronbach's alpha and Dillon-Goldstein's Rho. Table 18 illustrates the statistics for checking the unidimensionality of each block of

the research model. In addition, the statistics related to the block of the construct of Technological Sophistication are presented, even though the construct is not built using the reflective mode.

**Table 18.** Reliability of measures (research model).

Block	Principal component		Cronbach's alpha	Dillon- Goldstein's Rho
	First eigenvalue	Second eigenvalue		
Organizational Emergence (2 items)	1.58	0.42	0.73	0.88
Nascent Entrepreneur (3 items)	1.90	0.77	0.70	0.84
Market Conditions (3 items)	2.11	0.63	0.79	0.88
Improvising (3 items)	1.97	0.63	0.74	0.85
Networking (3 items)	2.22	0.57	0.82	0.89
Resource Combination (3 items)	1.79	0.87	0.64	0.81
Founding Team (6 items)	4.23	0.64	0.91	0.93
[Technological Sophistication (2 items)]	(1.09)	(0.91)	(0.17)	(0.71)

When using principal component analysis for each block of manifest variables, a block is unidimensional if the first eigenvalue of the correlation matrix of the block of manifest variables is higher than 1 and the second one lower than 1, or, at least, very far from 1. As can be seen from Table 18, the first eigenvalue is higher than 1 and the second eigenvalue lower than 1 with all the constructs. The statistics of principal component lead to the acceptance of the unidimensionality of all the blocks.

Cronbach's alpha can be used to check the unidimensionality of a block of standardized variables when they are positively correlated. A block is considered unidimensional when the Cronbach's alpha is higher than 0.70 (Nunnally 1978). Yet, some researchers (e.g. Wiklund 1998) point out that in exploratory research, when newly constructed measures are used, values of Cronbach's alpha below 0.70 are acceptable for some of the measures of a model. In our research model, all the constructs have an alpha value above 0.70, except the construct of Resource Combination. However, the Cronbach's alpha value for Resource Combination is very close to the threshold of 0.70, and since it is a new construct, the alpha

value of 0.64 is acceptable. Therefore, the statistics of Cronbach's alpha lead to the acceptance of the unidimensionality of all the blocks.

According to Chin (1998 a), the statistic of Dillon-Goldstein's Rho is considered to be a better indicator of unidimensionality of a block of manifest variables than the Cronbach's alpha. Using Dillon-Goldstein's Rho statistic, a block is unidimensional when Rho is higher than 0.70. As can be seen from Table 18, all the blocks of manifest variables satisfy this condition. The construct of Resource Combination has the lowest value of Rho, 0.81. The statistics of Dillon-Goldstein's Rho lead to the acceptance of the unidimensionality of all blocks.

The only formative construct of this study, Technological Sophistication, is also presented in Table 18. In the case of formative constructs, the unidimensionality of a block of manifest variables is not estimated, because the manifest variables are not expected to be correlated with each other. Despite the fact that the construct of Technological Sophistication is formative, two statistical tools out of three point out that the blocks are unidimensional. More specifically, principal component analysis and Dillon-Goldstein's Rho estimates show that the construct is unidimensional, whereas Cronbach's alpha does not produce the same result. Nevertheless, the construct is used in the analysis because it is in formative mode.

As a summary, three statistics tools were used to estimate the unidimensionality of the measurement model (outer model). Each of the three statistical tools estimated the blocks to be unidimensional. Therefore, all the constructs of the fined-tuned research model are concluded to be reliable.

#### **Individual item reliability**

Another important aspect of measures is related to individual item reliability. The loadings between manifest variables and their constructs can be used to assess individual item reliability. A rule of thumb is to accept manifest variables with loadings of 0.70 or higher, which would imply that there is more shared variance between the construct and its manifest variable than error variance. If a manifest variable has a loading below the

threshold of 0.70, it implies that less than 50 per cent of the variance of the manifest variable is due to the construct.

Appendix 18 presents the outer weights and the loadings (i.e. correlations) between the manifest variables and their constructs. As can be seen, among the 23 manifest variables of the main constructs, all of them have a loading of 0.70 or higher. Only the control construct of Technological Sophistication has one manifest variable, which has not an acceptable loading (0.15). Since this construct is in formative mode, the manifest variable was not removed. As such, it can be concluded that all the manifest variables of the research model demonstrate good item reliability.

#### **Convergent validity of measures**

To assess the convergent validity of the measurement model, communality index (i.e. Fornell-Larcker's AVE) was used. The communality index assesses the predictiveness of the measurement model by calculating the percentages of the total variance of each block being explained by the related construct. Communality index is a kind of cross-validated R-square between the block manifest variables and their construct. For the calculation of the communality index, the blindfolding procedure was carried out using  $G = 30$  blocks. The results are shown in Table 19.

**Table 19.** Convergent validity of the measurement model (research model).

<b>Block</b>	<b>Communality (AVE)</b>
Organizational Emergence	0.79
Nascent Entrepreneur	0.63
Market Conditions	0.70
Improvising	0.66
Networking	0.74
Resource Combination	0.58
Founding Team	0.70
[Technological Sophistication]	[0.51]

Evidence about the convergent validity of a measurement model is provided by the extent to which the communalities are significantly different from zero and sufficiently large to encourage further examination (Churchill 1979). More precisely, the convergent validity holds if the communality index (AVE) is higher than 0.50. A ratio below 0.50 is judged inappropriate because more variance is due to error (Cool, Dierickx & Jemison 1989). As seen from Table 19, the communality indexes of the different constructs give strong support to the quality of the measurement model. The lowest communality is with the construct of Resource Combination (0.58) and the highest with Organizational Emergence (0.79), respectively. In addition, the control construct Technological Sophistication reaches the same level of quality as the other constructs (AVE 0.51). This, in turn, suggests that the measurement model (outer model) of the research model has good convergent validity.

#### Discriminant validity of measures

Discriminant validity is also related to the quality of the measurement model, and complements convergent validity methodologically. Constructs may be correlated, but they need to measure different things. Discriminant validity represents the extent to which manifest variables of a given construct differ from the measures of the constructs of the same model (Hulland 1999). For the assessment of discriminant validity, the Table 20 presents some estimates.

**Table 20.** Discriminant validity of the measures (research model).

Construct	Nasc. Entr.	Market Condit.	Improv.	Network.	Resource Combin.	Found. Team	Techn. sophist.	Org. Emerg.
Nascent Entr.	<u>0.63</u>	0.07	0.02	0.04	0.02	0.01	0.04	0.01
Market Condit.	0.07	<u>0.70</u>	0.04	0.04	0.00	0.04	0.03	0.19
Improvising	0.02	0.04	<u>0.65</u>	0.16	0.15	0.09	0.03	0.01
Networking	0.04	0.04	0.16	<u>0.74</u>	0.07	0.02	0.01	0.05
Resource Combination	0.02	0.00	0.15	0.07	<u>0.56</u>	0.01	0.00	0.06
Founding Team	0.01	0.04	0.09	0.02	0.01	<u>0.70</u>	0.00	0.03
Technological Sophistication	0.04	0.03	0.03	0.01	0.00	0.00	<u>0.51</u>	0.06
Organizational Emergence	0.01	0.19	0.01	0.05	0.06	0.03	0.06	<u>0.79</u>

To have good discriminant validity, one should demonstrate that a particular construct is novel and not simply a reflection of some other construct. To assess discriminant validity, the Average Variance Extracted (AVE) of Fornell and Larcker (1981) is usable. The average variance shared between a construct and its manifest variables should be greater than the variance shared between the construct and other constructs (i.e. the squared correlation between two constructs).

Table 20 presents a correlation matrix, which includes the correlations between different constructs and the square roots of the average variance extracted values (i.e. communalities) calculated for each of the constructs. The communality indexes are underlined on diagonal in Table 20. In order to estimate the discriminant validity of the measures, the communality indexes should be higher than the correlations that occupy the same row and column. This is a minimum requirement and simply means that the correlation between two different measures of the same construct (i.e. diagonal correlation) should be higher than the correlations between the construct and any other construct, which has neither trait nor method in common (Churchill 1979). As seen from Table 20, all the entries satisfy this condition. This, in turn, suggests that the measurement model has good discriminant validity.

### **Monofactorial validity**

Finally, monofactorial validity is also related to the quality of a measurement model. To evaluate the monofactorial validity, Appendix 19 presents a table that shows the correlations related to the manifest variables and constructs.

As can be seen from Appendix 19, almost all the manifest variables are correlated significantly better with their own construct than with other constructs. There is only one manifest variable, which makes an exception. The manifest variable of Contact Potential Suppliers correlates not only with its own construct (0.75) but also with the construct of Improvising (0.54). Despite the correlations with the construct of Improvising, the item of the construct of Resource Combination still belongs clearly to its own construct (0.75 vs. 0.54). This, in turn, suggests that the measurement model (outer model) has good monofactorial validity.

### **Summary**

Based on the unidimensionality of measures, individual item reliabilities, and convergent, discriminant, and monofactorial validity, the measurement model (outer model) of the research model can be concluded to demonstrate good construct validity. Therefore, the measurement model has the required qualities, so that the estimation process can advance further to the estimation of the quality of the structural model.

#### **5.2.1.2 Quality of the structural model**

The second concern of the PLS models is related to the quality of the structural model. Two issues will be looked upon, namely the validation of the global model and the validation of each structural regression equation.

##### **Validation of the global model**

In the PLS estimation, a statistic measuring of the global validity of the model does not exist. This is because the PLS estimation is aimed at explaining the variance of the dependent construct, not the covariance between different constructs, such as in the case of ML-based estimation methods (e.g. Lisrel).

Since the case values of constructs are determined by weight relations, structural prediction may be assessed by looking at usual  $R^2$ . A high value of  $R^2$  demonstrates a good prediction power. Table 1 in the Appendix 20 presents the PLS estimation of the research model. That is, the parameters of the structural models are presented. As can be seen from the Table 1 in the Appendix 20, the explained variance ( $R^2$ ) of organizational emergence is 0.43; that is, the research model can explain 43% of the variance in the dependent variable. It is very satisfactory taken into account the complexity of the model and the low theoretical rationale when constructing the structural model (i.e. inner model). While not providing a statistic measuring of the global validity of the model, the investigation of  $R^2$  indicates that the research model has a good predictive power.

### The validation of each structural equation

The quality of the structural model can be measured using a redundancy index (i.e. Stone-Geisser  $Q^2$ ), which gives an estimate of the predictive relevance of each structural regression equation. Redundancy is the average variance of the manifest variables set, related to the endogenous construct, and explained by the exogenous constructs. Redundancy is a kind of cross-validated R-square between the manifest variables of an endogenous construct and all the manifest variables associated with the constructs explaining the endogenous construct, using the estimated structural model. Chatelin and his colleagues (2002) give the details about how to calculate the redundancy index. In the research model, there are a total of five endogenous constructs for which the redundancy index was computed. Again, blindfolding was carried out using  $G = 30$  blocks. The results are shown in Table 21.

**Table 21.** Quality of each structural equation (research model).

Block	Redundancy
Organizational Emergence	0.24
Founding Team	-0.07
Improvising	-0.37
Networking	-0.38
Resource Combination	-0.44

If the redundancy index is higher than zero, the index indicates predictive relevance. Negative values, on the other hand, imply the rejection of related structural equations. As can be seen from Table 21, only the construct of Organizational Emergence has an acceptable redundancy index (0.24). All the other constructs demonstrate negative values for the redundancy index. This, in turn, implies the rejection of the structural equations of Improvising, Networking, Resource Combination, and Founding Team. Yet, the construct of Founding Team has a redundancy index close to zero, yet marginally negative (-0.07). This could imply that Founding Team is close to having predictive relevance. At least, the structural equation related to Founding Team should not be rejected automatically. Moreover, the investigation of the values of  $R^2$  of each structural equation seems to confirm



the messages of the redundancy index. Table 22 presents the  $R^2$  values of each structural equation.

**Table 22.**  $R^2$  values of each structural equation (research model).

Structural equation	$R^2$
Organizational Emergence	0.43
Founding Team	0.20
Networking	0.06
Improvising	0.05
Resource Combination	0.02

Just like the above-presented redundancy index, the high value of  $R^2$  related to Organizational Emergence implies predictive relevance. More interestingly, the structural equation of Founding Team has a fairly high value of  $R^2$  (0.20), which can be taken as a sign of predictive relevance and further supports the conclusion that this equation should not be automatically rejected. The  $R^2$  values of the remaining structural equations, on the contrary, are very low.

Furthermore, the research model presented in Figure 11 summarizes the various structural regressions of the research model of organizational emergence (Table 1 in the Appendix 20 presents the same PLS estimation of the research model in table format). In the Figure 11, the path coefficients are the standardized regression coefficients ( $\beta$ ). The explained variances ( $R^2$ ) are also presented. In addition, the significance levels ( $p$ ) of the regression coefficients were computed using a cross-validation method available in the software package (usual  $t$ -statistics). Statistically significant arrows are in bold. The path loadings were taken to be statistically significant with a  $p$ -value lower than .05, which is the highest probability generally considered (Burns 2000). By adopting the threshold of .05, we accept that there is a 5 per cent possibility that the result occurred by chance.

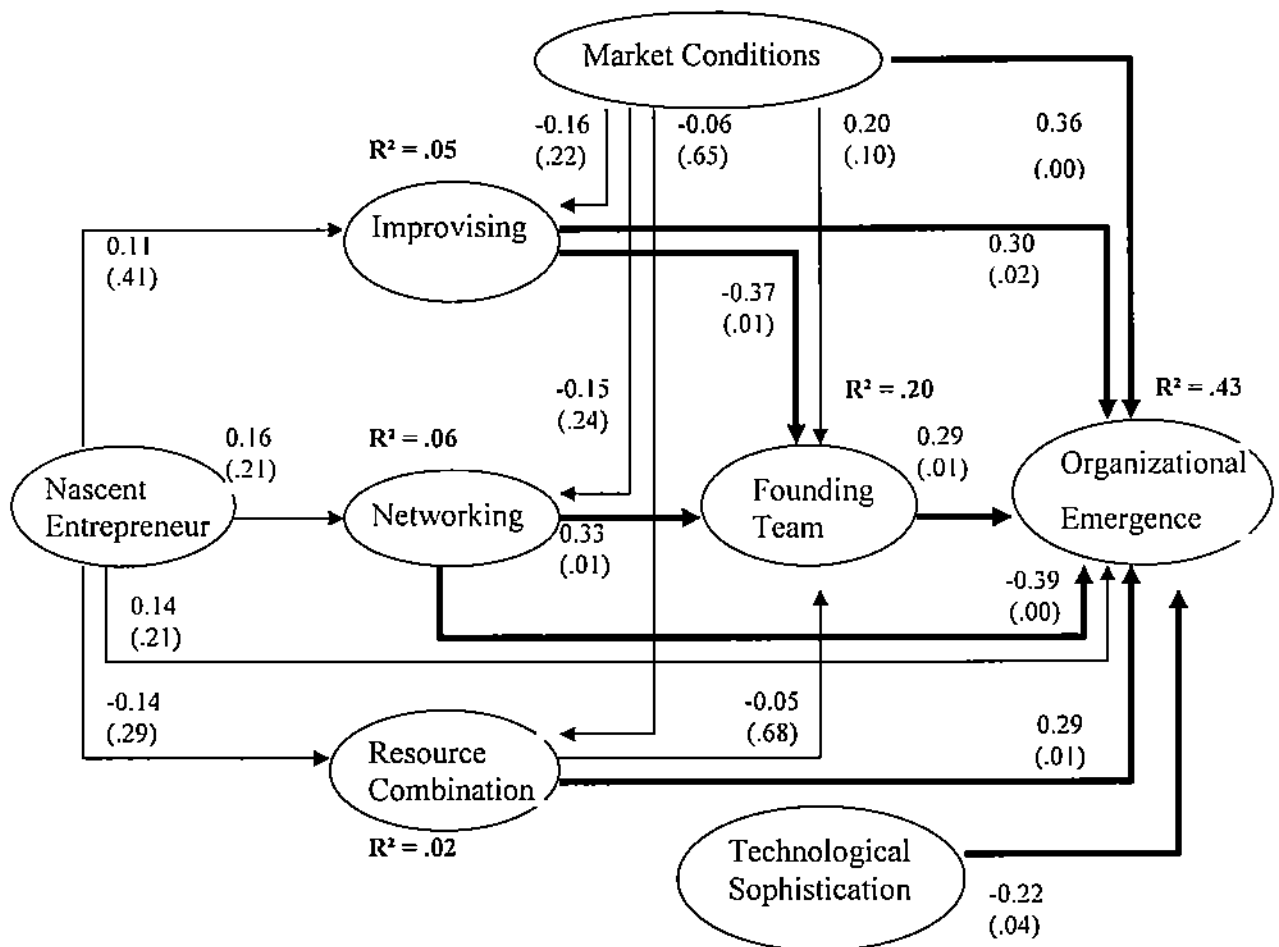


Figure 11. Research model and PLS estimation.

There are 17 structural relationships in the research model. Eight of them are statistically significant, while nine are not. All of the constructs of legitimating behaviors correlate statistically significantly with the other constructs:

- Improvising has a statistically significant ( $p = .02$ ) positive correlation with Organizational Emergence ( $\beta = 0.30 / r = 0.09$ ) and a statistically significant ( $p = .01$ ) negative correlation with Founding Team ( $\beta = -0.37 / r = -0.30$ ).
- Networking has a statistically significant ( $p = .00$ ) negative correlation with Organizational Emergence ( $\beta = -0.39 / r = -0.22$ ), and a statistically significant ( $p = .01$ ) positive correlation with Founding Team ( $\beta = 0.33 / r = 0.13$ ).
- Resource Combination has a statistically significant ( $p = .01$ ) positive correlation with Organizational Emergence ( $\beta = 0.29 / r = 0.25$ ), but not with Founding Team ( $p = .68$ ).

In regard to the legitimated elements:

- Market Conditions has a statistically significant ( $p = .00$ ) positive correlation with Organizational Emergence ( $\beta = 0.36 / r = 0.43$ ). No other relationship turns out to be statistically significant. If the decision criteria had been 10 per cent, the relationship with Founding Team would have been statistically significant ( $\beta = 0.20 / r = 0.21$ ).
- Founding Team has a statistically significant ( $p = .01$ ) positive correlation with Organizational Emergence ( $\beta = 0.29 / r = 0.17$ ).
- Nascent Entrepreneur is not correlated statistically significantly with any construct, not even with the decision criteria of 10 per cent.

What comes to the control variable:

- Technological Sophistication has a statistically significant ( $p = .04$ ) negative correlation with Organizational Emergence ( $\beta = -0.22 / r = -0.25$ ).

Thus, when looking at the p-levels, less than half of the structural relationships are statistically significant. Above, Wiklund (1998), while not computing significance levels for path coefficients, used the rule of thumb of Falk and Miller (1992) to determine whether structural relationships were significant in his model. According to Falk and Miller, all path coefficients give a relevant empirical contribution to the predicted construct if path coefficients reach or exceed 0.10. If the same rule were used here, 7 additional structural relationships would have been declared to be significant because of a regression coefficient of 0.10 or above. Indeed, in the research model, there are 15 (out of 17) structural relationships with a path coefficient of 0.10 or above. The use of the rule of thumb of Falk and Miller (1992) would have led to the conclusion that 15 structural relationships make a statistically significant impact on organizational emergence.

Yet, more recently, Chin (1998b) has pointed out that standardized path coefficients should be at least 0.20 and ideally above 0.30, because paths of 0.10 represent, at best, a one-per cent explanation of variance. The recommendation of Chin seems to bear more relevance, because all the structural relationships in the research model with a path coefficient below 0.20 turned out to be statistically non-significant when using the cross-validation method available in the software package. The "highest" not statistically significant path coefficient

is 0.20 ( $p = .097$ ). The “lowest” statistically significant path coefficient is 0.22 ( $p = .04$ ). Therefore, it seems that the significance threshold of statistical significance lies somewhere between the path coefficients of 0.20 and 0.22. This study follows the more conservative statistics of Chin and disregards all the path coefficients that are not statistically significant (even though they have a path coefficient exceeding 0.10).

While not providing a statistic measuring of the global validity of the model, the investigation of  $R^2$  related to each regression equation indicates that the research model is highly predictive in regard to the dependent variable. Yet, the other structural equations turn out to be less well predicted by the constructs. Most of the statistically significant paths are linked to Organizational Emergence (six statistically significant paths) and Founding Team (2 statistically significant paths). By contrast, none of the paths connected to Improving, Networking, and Resource Combination are statistically significant. This would imply that Market Conditions and Nascent Entrepreneur are not predictors of the three legitimating behaviors constructs. Therefore, it seems that there are modifications to be made to the structural model in order to make the research model more suited to empirical data.

### **5.2.1.3 Re-specifying the research model**

For the re-specification of the research model, two notable changes were made. First, along with the PLS estimation, it has become evident that the construct of Nascent Entrepreneur is problematic mostly because the correlation and weight between Nascent Entrepreneur and Organizational Emergence have different signs (positive loading and negative correlation). In addition, an effect size  $f^2$  was calculated (see Section 5.2.4.1 for the explanation of the effect size). It indicated that the removal of the construct of Nascent Entrepreneur would immediately improve the explanatory power of the model. Therefore, the construct of Nascent Entrepreneur was removed. Second, all the structural equations, which were not statistically significant in the research model, were removed from the model. As a result, the re-specified research model will start with eight structural relationships.

The quality of the measurement model was checked using the same procedure as with the research model. Statistics related to the reliability of the measures of the re-specified research model produce similar results to those of the research model. As such, all the constructs of the re-specified research model were reliable. Moreover, the measurement model demonstrates good individual item reliability. The Communality indexes imply that the measurement model has good convergent validity. The measurement model of the re-specified research model was also checked against discriminant validity and monofactorial validities: nothing unusual came up. Therefore, the re-specified research model proved to have good construct validity. We concluded that we could proceed to estimate the structural model.

Furthermore, the model presented in Figure 12 summarizes the eight structural regressions of the re-specified research model of organizational emergence (Table 2 in the Appendix 20 presents the same PLS estimation of the re-specified research model in table format).

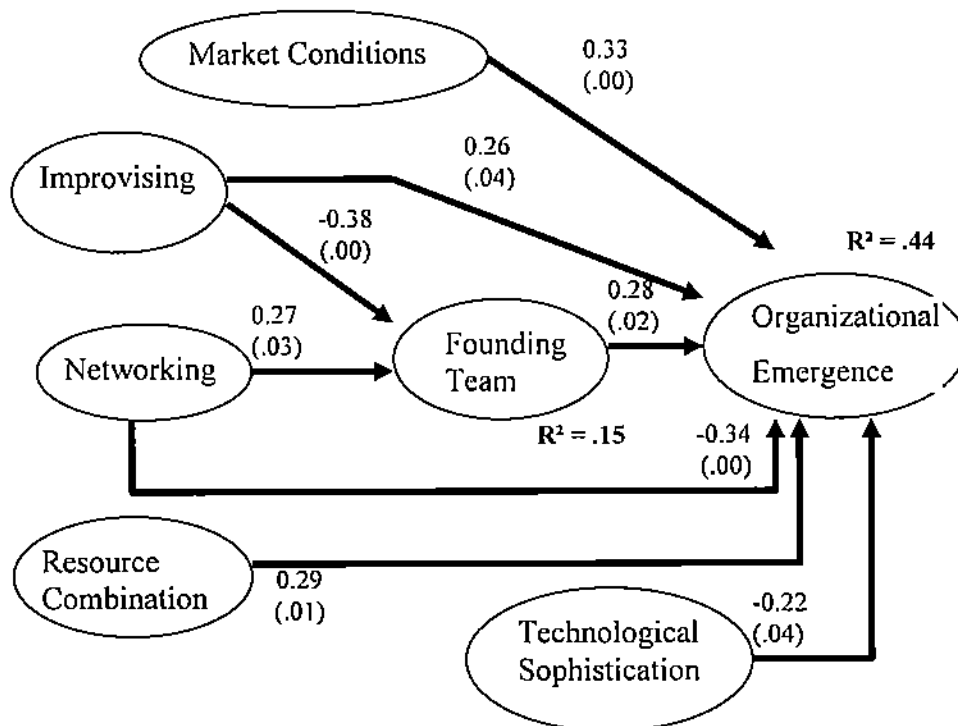


Figure 12. Re-specified research model and PLS estimation.

As can be seen from the Figure 12, the model can explain around 44 per cent of the variance of the dependent construct. That is, 44 per cent of the variance of organizational emergence is predicted by the constructs. The result demonstrates the global validity of the model when no goodness of fit indices are available. Moreover, the eight structural relationships of the re-specified research model are statistically significant.

As we did earlier with the original research model, the redundancy index (i.e. Stone-Geisser  $Q^2$ ) is used to estimate the validity of each structural equation. Only the construct of Organizational Emergence had an acceptable redundancy index (i.e.  $>0$ ) indicating predictive relevance. The structural equation of the Founding Team showed a negative redundancy index, indicating that the equation should be rejected. In fact, the index went down from -0.07 to -0.17 between the two models.

Based on the analysis of the research and re-specified models, it seems to be clear that the present constructs have predictive relevance only in one structural equation. As such, the next section will concentrate on this one structural equation, namely Organizational Emergence.

#### **5.2.1.4 Summary of the analysis of the research model**

The main results of the analysis of the research model are summarized in the Table 23. Both models were able to effectively explain the variance in Organizational Emergence. The explained variance was constantly over 40%. Of the seven independent constructs, six turned out to be significant contributors to Organizational Emergence. Of the six significant predictors, Networking and Technological Sophistication had a negative impact on Organizational emergence. One construct (Nascent Entrepreneur) did not make a statistically significant contribution to Organizational Emergence. While the structural equation related to the Founding Team did not have predictive relevance, Improvising and Networking had a statistically significant relationship with it. The setback was that only one structural equation had predictive relevance, which leads to the analysis of the simple model.

**Table 23.** Preliminary empirical results of PLS analysis (research models).

Results	
1.	Only the structural equation of Organizational Emergence has predictive relevance.
2.	The research model is able to explain 44% of the variance of Organizational Emergence.
3.	The removal of the construct of Nascent Entrepreneur from the research model increased the explained variance of the model.
4.	Market Conditions has a statistically significant positive effect on Organizational Emergence.
5.	Networking has a statistically significant negative effect on Organizational Emergence.
6.	Resource Combination has a statistically significant positive effect on Organizational Emergence.
7.	Founding Team has a statistically significant positive effect on Organizational Emergence.
8.	Resource Combination has a statistically significant positive effect on Organizational Emergence.
9.	Improvising has a statistically significant positive effect on Organizational Emergence.
10.	Technical Sophistication has a statistically significant negative effect on Organizational Emergence.
11.	Improvising has a statistically significant negative effect on Founding Team.
12.	Networking has a statistically significant positive effect on Founding Team.

## 5.2.2 A simple model

This section uses the information from the previous sections and will change the structural model of the re-specified research model completely based on information provided by the earlier steps of the analysis. This means that all the structural equations that did not show an acceptable redundancy index were removed. The structural equation of Organizational Emergence is the only one that is left. After the changes, we have a simplified model of organizational emergence.

### 5.2.2.1 Quality of the measurement model

Appendix 21 presents the statistics related to the reliability of the measures of the simple model. In addition, the statistics related to the block of the construct of Level of Innovativeness are presented, even though the construct is not built using the reflective mode. As can be seen from Appendix 21, all the measures demonstrate unidimensionality

based on three different statistics: in each block, the value of the first principle component is higher than 1 and the second one lower than 1; every block has a Cronbach's alpha value higher than 0.70 (except Resource Combination, which arrives very close to this threshold with an alpha value of 0.64); and all the Dillon-Goldstein Rho values are higher than 0.70. Therefore, all the constructs are reliable.

Moreover, Appendix 22 presents the correlations related to the manifest variables and constructs to estimate individual item reliability. The measurement model demonstrated good individual item reliability: out of the 23 manifest variables, two had a loading below the threshold of 0.70. Yet, all of them had a loading above 0.60, which is sometimes accepted as an acceptable loading in exploratory research and when the measures are new. The lowest loading was 0.65 with one manifest variable of the construct of Improvising (Create Artifacts). The measurement model demonstrated individual item reliability.

Furthermore, earlier, the Communality index (i.e. AVE) was used to estimate the convergent validity of the measurement model. Appendix 22 presents the communality index for the evaluation of the measurement model of the simple model. As can be seen from Appendix 22, all the constructs have a communality index above 0.5, which implies that the measurement model has good convergent validity. The measurement model was also checked against discriminant and monofactorial validity. Everything was in order. Therefore, based on the unidimensionality of the measures, individual item reliability, and construct validity (convergent, discriminant, and monofactorial validities) the measurement model meets the standards of a good and reliable measurement model, and we can proceed to estimate the structural model.

### **5.2.2.2 Quality of structural model**

Table 1 in the Appendix 23 presents the PLS estimation of the simple model. In addition, Figure 13 presents the simple model in graphical mode.



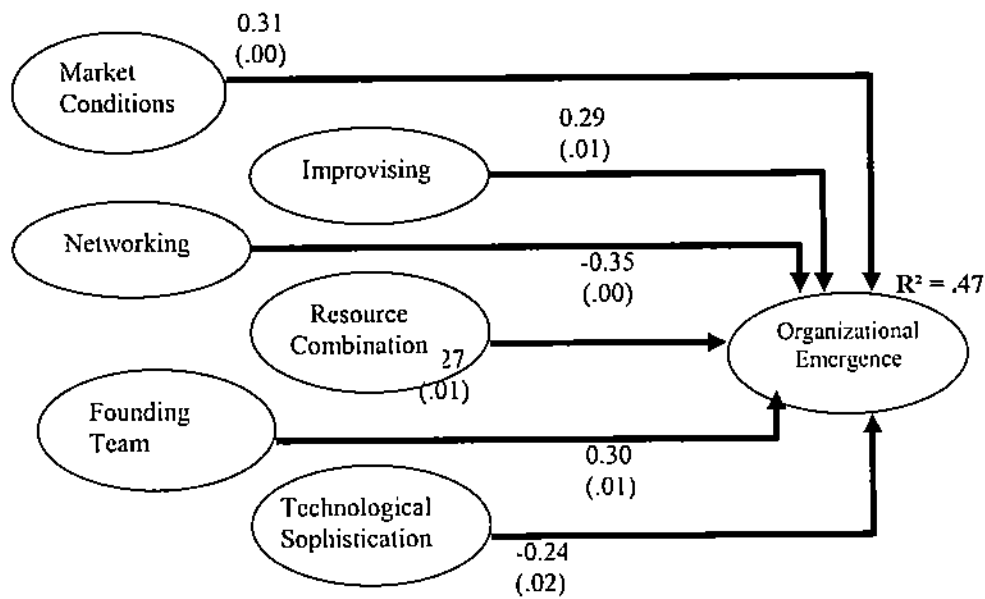


Figure 13. Simple model and PLS estimation.

As can be seen from the Figure 13 and Table 1 in the Appendix 23, all the constructs have a statistically significant relationship to organizational emergence:

- Improvising has a statistically significant ( $p = .01$ ) positive correlation with Organizational Emergence ( $\beta = 0.29 / r = 0.11$ ).
- Networking has a statistically significant ( $p = .00$ ) negative correlation with Organizational Emergence ( $\beta = -0.35 / r = -0.24$ ).
- Resource Combination has a statistically significant ( $p = .01$ ) positive correlation with Organizational Emergence ( $\beta = 0.27 / r = 0.28$ ).
- Market Conditions has a statistically significant ( $p = .00$ ) positive correlation with Organizational Emergence ( $\beta = 0.31 / r = 0.45$ ).
- Founding Team has a statistically significant ( $p = .01$ ) positive correlation with Organizational Emergence ( $\beta = 0.30 / r = 0.27$ ).
- Technological Sophistication has a statistically significant ( $p = .02$ ) negative correlation with Organizational Emergence ( $\beta = -0.24 / r = -0.25$ ).

As can be seen, the model can predict around 47 per cent of the variance in organizational emergence. The explained variance has increased by 3 per cent, even though we are using the same constructs as in the re-specified research model. As earlier with the research and

the re-specified research models, the redundancy index (i.e. Stone-Geisser  $Q^2$ ) is used to estimate the validity of the structural equations. From Appendix 23 we can see that, as in the previous cases, the construct of Organizational Emergence has an acceptable redundancy index of 0.29, which is above zero and indicates predictive relevance.

The simple model is based on interaction effects between the resource dependence theory and the institutional theory in explaining organizational emergence. When used in this way, the model seems to produce results, which have predictive relevance. Next, we will study whether the separation of these two perspectives lead to a similar outcome.

### **5.2.2.3 Institutional and resource dependence models**

While the main aim of this study is not to compare the predictive power of legitimated elements and legitimating behaviors, the comparison will eventually increase our understanding of the focal phenomenon.

To understand the role of legitimated elements and legitimating behaviors in predicting organizational emergence, two additional models were built. The first model was based on the three constructs of legitimated elements (i.e. institutional model) and the second model based on the three constructs of legitimating behaviors (i.e. resource dependence model). Both of the models were checked against the unidimensionality of measures, individual item reliability, convergent validity, discriminant validity, and monofactorial validity. Only one item of Nascent Entrepreneur (i.e. age of the nascent entrepreneur) in the institutional model had a low loading (0.20) indicating low individual item reliability. In addition, one item of the construct of Networking (discussion with potential suppliers) in the resource dependence model also loaded to the construct of Improvising indicating low monofactorial validity. Yet, the loading to its own construct was higher than to the neighboring construct (0.64 vs. 0.52). These were the only inconsistencies; nothing unusual showed up. The quality of the measurement model (outer model) was concluded to be good in the institutional and the resource dependence models.

Table 2 in the Appendix 23 presents the PLS estimation of the institutional model. As can be seen, the institutional model can explain about 23 per cent of the variance of organizational emergence. What is noticeable here is that the institutional model had only one statistically significant predictor construct, namely Market Conditions. The path loading (regression weight) of Market Conditions to Organizational Emergence is 0.40 and correlation 0.45. Founding Team ( $p = .18$ ) and Nascent Entrepreneur ( $p = .77$ ) do not have a statistically significant relationship to organizational emergence. Furthermore, the computed redundancy index for organizational emergence is -0.03. As the redundancy index is not above 0, this means that the structural equation does not have predictive relevance. The redundancy index is so close to being 0 that the rejection of the structural equation should not be automatic.

Table 3 in the Appendix 23 presents the PLS estimation of the resource dependence model. As can be seen, the resource dependence model can explain 19 per cent of the variance in the construct of Organizational Emergence. Two constructs have a statistically significant impact on organizational emergence: Networking has a statistically significant ( $p = .01$ ) negative correlation with Organizational Emergence ( $\beta = -0.34 / r = -0.23$ ), and Resource Combination a statistically significant ( $p = .01$ ) positive correlation with organizational emergence ( $\beta = 0.33 / r = 0.30$ ). Improvising did not prove to have a statistically significant effect on organizational emergence ( $p = .39$ ). Furthermore the computed redundancy index, -0.10, indicates that the structural equation does not have predictive relevance.

As such, legitimated elements seem to be more useful in predicting organizational emergence. At least, the explained variance of the legitimated elements ( $R^2 = 23\%$ ) is higher than the one of legitimating behaviors ( $R^2 = 19\%$ ). Again, the differences between the two models are not substantial. Moreover, and more importantly, while both of the models tested in this section could explain around 20 per cent of the variance in organizational emergence, the redundancy indexes indicate that the two structural equations do not have predictive relevance and, therefore, should be rejected. A conclusion that one is tempted to draw from the previous finding is that legitimated elements and legitimating behaviors alone do not seem to have predictive relevance vis-à-vis organizational

emergence. It is only when the two perspectives are integrated that the two do have it, as demonstrated by the simple model.

#### 5.2.2.4 Summary and discussion of the simple model

There was only one structural equation to be estimated in the simple model. As such, the model resembles a classical regression model. At least, the model has only one endogenous variable, while the rest of the constructs are exogenous. The difference with a normal regression analysis is that in the PLS estimation the analysis is done on constructs (latent variables) rather than directly on manifest variables, as in classical regression. In other words, the PLS estimation uses latent constructs while regression uses manifest variables. Furthermore, in the PLS estimation, the manifest variables both correlate with the dependent and other independent variables, whereas classical regression analysis assumes that all the independent variables are not heavily correlated with each other and therefore contribute uniquely to the explained variance (Delmar 1996). Table 24 presents the key results of the analysis related to the simple model.

**Table 24.** Preliminary empirical results of PLS analysis (simple model).

Results
13. A model based on interaction effects of institutional and resources dependence forces (simple model) seems to produce best predictions of organizational emergence explaining almost 47 per cent of the variance in organizational emergence.
14. When estimated separately, resource dependence and institutional models do not seem to have predictive relevance.

The simple model was able to explain 47% of the variance of Organizational Emergence. All six independent constructs of the simple model made a statistically significant contribution to Organizational Emergence. The simple model is based on interaction effects between institutional and resource dependence constructs. Based on the analysis it seems that the two theories are able to produce interesting results when put together. Moreover, the last section tried to separate the constructs related to legitimated elements (i.e.

institutional model) and legitimating behaviors (i.e. resource dependence model) to see what the predictive relevance of these constructs is alone. As observed, the two theories did not have predictive relevance when used alone.

### **5.2.3 Exploring other specifications**

As already discussed in the opening chapter, what is interesting in the use PLS estimation (and SEM in general) from the point of view of this study is that instead of being a strictly confirmatory technique, it also includes some exploratory elements. An interplay between theory and data is allowed. Since, this study aims to discover a mechanism that connects legitimated elements and legitimating behaviors together to predict organizational emergence, we will next explore and play with the data and the model to look for the best explanation for organizational emergence.

To take a full advantage out of the exploratory nature of this study and the used method, different specifications were used to estimate the predictive relevance of the central constructs. These alternative specifications can also be regarded as a kind of test of robustness of what we have learnt so far about the prediction of organizational emergence.

Related to the discussion about distal and proximal constructs (see Section 3.1.1.3), a new intuitive model was built (see Figure 14). Founding Team and Market Conditions were regarded as distal constructs, which are relatively constant. That is, they do not change very easily. Moreover, the constructs related to legitimating behaviors are more situational and thus affected by the two distal constructs. The model was checked against the unidimensionality of measures, individual item reliability, convergent validity, discriminant validity, and monofactorial validity. Nothing unusual showed up. The quality of the measurement model (outer model) was concluded to be good. The PLS estimation of this model is presented in Table 1 of Appendix 24. In addition, the regression coefficients and p-level are in Figure 14.

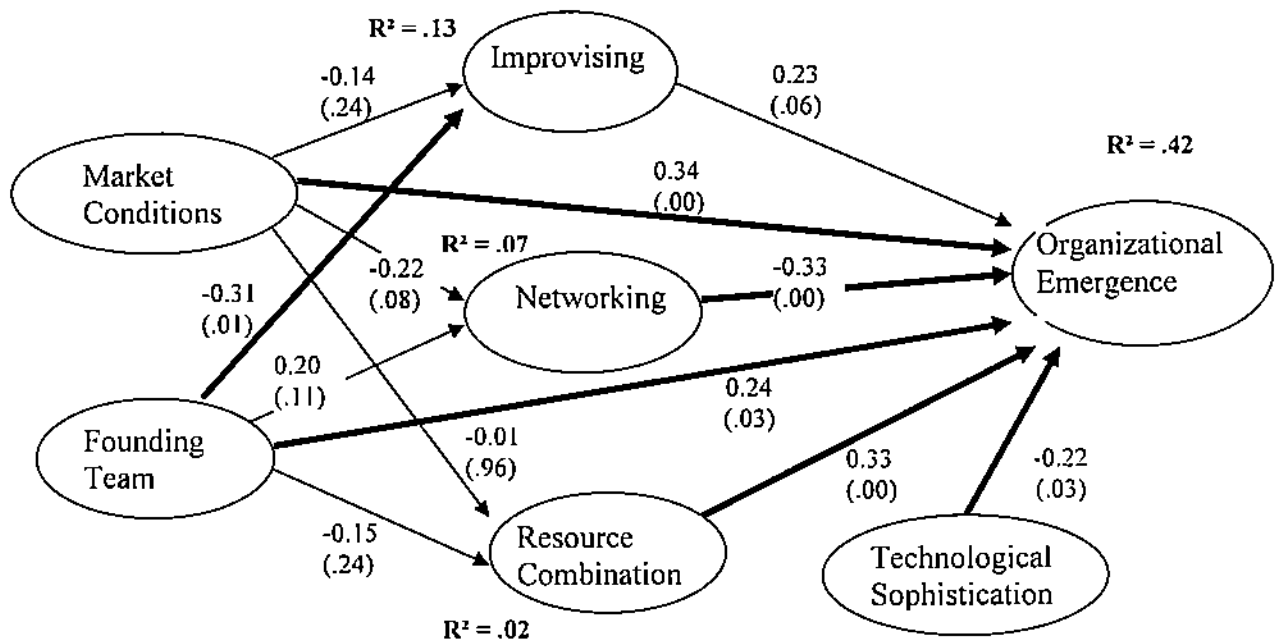


Figure 14. Intuitive model and PLS estimation.

As can be seen from Figure 14, the two intuitive model is able to explain 42 per cent of the variance in Organizational Emergence. The redundancy indexes of different structural equations of this model indicated that only the structural equation of Organizational Emergence has predictive relevance. The intuitive model provides two new pieces of information. The model introduces one new statistical correlation between different constructs. Founding Team seems to have statistically significant ( $p = .01$ ) negative ( $\beta = -0.31 / r = -0.33$ ) relationship to Improvising. Secondly, Improvising does not make a statistically significant ( $p = .06$ ) contribution to Organizational emergence. This result seems to nullify the result number 11 (see Table 23). Table 25 summarizes the main findings based on the analysis of the two phase model.

Table 25. Preliminary empirical results of PLS analysis (intuitive model).

15. Founding Team has a statistically significant negative relationship with Improvising.
16. Improvising does not have a statistically significant relationship with Organizational Emergence.

#### **5.2.4 Concurrent validity of different models of organizational emergence**

What model fitted had the best fit with the data? A word of caution is needed when starting to compare the different models. As discussed earlier (see Section 4.7.2.6.), the criticism towards SEM techniques includes the claim that several models can generate similar goodness of fit indexes. It is not possible to find one best model based on the goodness of fit index. In addition, PLS path modeling does not provide a goodness of fit measure. Last, explained variances ( $R^2$ ) and path coefficients from entirely different theoretical models are not directly comparable (Hulland 1999). Therefore, special attention needs to be paid when comparing different models.

All the models had concurrent validity. The research model had concurrent validity to the extent that six (out of seven) constructs had a statistically significant impact on Organizational Emergence. Second, the explained variance in organizational emergence increased by 1%, from 43% to 44%, when one construct (Nascent Entrepreneur) was taken out from the research model. All the other constructs had a statistically significant impact on Organizational Emergence. Yet, the redundancy index showed that all the structural equations, except the one of Organizational Emergence, should be rejected. The simple model had only one structural equation, Organizational Emergence. The simple model could predict almost 47% of the variance in Organizational Emergence. All the constructs had statistically significant impact on Organizational Emergence. Lastly, the intuitive model had concurrent validity to the extent that five (out of six) constructs had a statistically significant impact on Organizational Emergence. Contrary to the research, re-specified, and simple models, the construct of Improvising did not have a statistically significant impact on Organizational Emergence.

If we look at the structural models (inner models) of the research, re-specified, and intuitive models, the inner models did not demonstrate structural validity. That is, the structural models did not have predictive relevance in any the three models tested. Only one structural equation, the one of organizational emergence, had acceptable redundancy index across the three different models. Therefore, the best model seemed to be the simple model. As stated

already, the simple model had good concurrent validity. That is, the constructs could predict the variance in the dependent variable to a satisfactory degree (47%).

Because PLS has as its primary objective the maximization of variance explained (or, equivalently, the minimization of error) in all endogenous constructs, the degree to which any particular PLS model accomplishes this objective can be determined by examining the explained variance ( $R^2$ ) values for the dependent construct (Hulland 1999). Again, the simple model was able to explain the largest amount of variance in Organizational Emergence. Therefore, the following sections concentrate on the simple model.

#### 5.2.4.1 Predictors of organizational emergence

This section will get to the point of estimating the predictors of organizational emergence. In order to estimate the relative importance of the different theoretical constructs for predicting organizational emergence, two issues will be considered, namely the contribution of different constructs to  $R^2$  and their effect size ( $f^2$ ).

##### Contributions to $R^2$

The path coefficients for the constructs predicting organizational emergence provide information as to the relative importance of different constructs. In order to investigate the predictive power of different exogenous constructs, Table 26 illustrates the statistics related to the contributions to  $R^2$  of the different constructs in the simple model.

**Table 26.** Contributions to  $R^2$  (simple model).

Exogenous construct	Regression coefficient ( $\beta$ )	Correlation ( $r$ )	Contribution to $R^2$	p-value
Market Conditions	0.31	0.45	30%	.00
Networking	-0.35	-0.24	18%	.00
Founding Team	0.30	0.27	17%	.01
Resource Combination	0.27	0.28	16%	.01
Technological Sophistication	-0.24	-0.25	13%	.02
Improvising	0.29	0.11	6%	.01



First, as can be seen from Table 26, all the constructs of the simple model have a statistically significant impact (at 0.5% level) on Organizational Emergence. The most important construct is Market Conditions, which contributes around 30 per cent to the  $R^2$  value of Organizational emergence. Three constructs make a similar contribution to  $R^2$ , namely Networking (18%), Founding Team (17%) and Resource Combination (16%). The contribution of Technological Sophistication to the  $R^2$  value is 13 per cent, while the one of Improvising is only 6 per cent.

### Effect size ( $f^2$ )

Instead of looking solely at significant structural paths and loadings, closer attention should perhaps be given to the predictiveness of the model. Along this idea, structural paths and loadings with substantial strength should be the focus of investigation. Therefore, in order to investigate further the importance of different constructs for the prediction of organizational emergence, we computed an effect size  $f^2$  for each construct.

In PLS path modeling, the effect sizes of different constructs can be investigated by considering the explained variance of dependent variables. When a construct is removed from the research model, the explained variance of the dependent variable ( $R^2$ ) changes. A change in  $R^2$  is used to estimate whether the impact of a specific exogenous construct has a substantive impact (effect size  $f^2$ ). The following formula is used to calculate the effect size.

$$f^2 = \frac{R^2 \text{ (included)} - R^2 \text{ (excluded)}}{1 - R^2 \text{ (excluded)}}$$

An effect size  $f^2$  value of 0.02 indicates that a construct has a small impact on explained variance ( $R^2$ ), an effect size of 0.15 a medium impact, and an effect size of 0.35 a large impact, respectively. Table 27 presents the exogenous constructs and the effect sizes ( $f^2$ ) computed for them in the simple model.

**Table 27.** Effect size of exogenous constructs (simple model).

Exogenous construct	R <sup>2</sup> -included	R <sup>2</sup> -excluded	Effect size (f <sup>2</sup> )
Networking	0.4692	0.3704	0.16
Market Conditions	0.4692	0.3862	0.14
Founding Team	0.4692	0.3933	0.13
Resource Combination	0.4692	0.4099	0.10
Improvising	0.4692	0.4131	0.10
Technological Sophistication	0.4692	0.4178	0.09

As can be seen from Table 27, all the effect sizes are clearly higher than 0.02. On the other hand, only the constructs of Networking ( $f^2 = 0.16$ ) and Market Conditions ( $f^2 = 0.14$ ) have a medium impact on R<sup>2</sup>. The most notable result of this analysis is that Networking seems to be the most important predictor of Organizational Emergence, and not Market Conditions. Founding Team ( $f^2 = 0.13$ ), Resource Combination ( $f^2 = 0.10$ ), Improvising ( $f^2 = 0.10$ ), and Technological Sophistication ( $f^2 = 0.09$ ) arrive all in one group. It seems that the simplified model equalizes the impact of the different constructs on R<sup>2</sup> values of organizational emergence because none of the constructs has a higher effect size compared to other ones.

As a sum, the best predictors of Organizational Emergence seemed to be Networking and Market Conditions. The other constructs (Founding Team, Resource Combination, Technological Sophistication, and Improvising) also seemed to contribute to Organizational Emergence, but to a lesser extent than the two previous constructs.

#### 5.2.4.2 Robustness of the empirical model

The PLS estimation was also run for the simple model using a complete data set. That is, the right censored observations were eliminated from the research sample. Only the pre-organizations, which were new organizations, were terminated, or in a stand-by situation were included in the complete data set. There are 38 pre-organizations in the complete data set. When interpreting the findings, one should bear in mind that the estimate of the

complete data set may not be 100% reliable due to the sample size of 38 pre-organizations. A sample size of 38 observations does not represent a conservative rule of thumb for regression heuristic, but a midposition between liberal and conservative statistician. Following the same procedures as earlier, the quality of the measurement model was checked. Everything was in order. The measurement model (outer model) was concluded to demonstrate good construct validity.

Table 2 in Appendix 24 presents the PLS estimation of the simple model using the complete data set. Whereas, Table 28 compares the different estimates between the research sample (RS) and the complete data set (CD). Again, the research models seem to have produced relatively robust estimates, at least none of the estimates changed sign. The two notable differences are related to the explained variance and predictors of Organizational Emergence. First, the explained variance ( $R^2$ ) of Organizational Emergence increases from 47% to 65%. Secondly, Improvising turns out to be a non-significant contributor to Organizational Emergence. The biggest contributors to Organizational emergence are still Market Conditions and Networking.

**Table 28.** Robustness of the estimates: Correlations (simple model).

Construct	Regression coefficient ( $\beta$ )		Correlation (r)		Contribution to $R^2$		p-value	
	RS	CD	RS	CD	RS	CD	RS	CD
Market Conditions	0.31	0.34	0.45	0.52	30%	27%	.00	.00
Networking	-0.35	-0.44	-0.24	-0.30	18%	20%	.00	.00
Resource Combination	0.27	0.33	0.28	0.38	16%	19%	.01	.01
Founding Team	0.30	0.28	0.27	0.27	17%	11%	.01	.02
Techn. Sophistication	-0.24	-0.31	-0.25	-0.35	13%	17%	.02	.01
Improvising	0.29	0.22	0.11	0.15	6%	5%	.01	.11

Moreover, the comparison of effect sizes will tell us something about the robustness of the effect sizes. Table 29 compares the calculated effect sizes of the exogenous constructs of the simple model using the research sample and complete data set.

**Table 29.** Robustness of the estimates: Effect sizes (simple model).

Exogenous construct	Effect size (F <sup>2</sup> )	Effect size (F <sup>2</sup> )
	Research sample	Complete data set
Networking	0.16	0.31
Market Conditions	0.14	0.22
Technological Sophistication	0.09	0.20
Founding Team	0.13	0.17
Resource Combination	0.10	0.17
Improvising	0.10	0.07

Again, the comparison of effect sizes seems to confirm earlier results. All of the effect sizes are larger in the complete data set, except the one of Improvising. The most important predictors of Organizational Emergence are Networking and Market Conditions. Networking has a large impact on Organizational Emergence. The complete data set also seems to strengthen the predictive power of Resource Combination, Founding Team, and Technological Sophistication constructs. Improvising, which already was the weakest contributor to Organizational Emergence, decreases its effect size according to the complete data set. It seems that the differences in effect sizes in the complete data are much bigger than in the research sample where each construct had similar effect sizes.

The complete data set confirms the most important results of the simple model when the research sample was used. Firstly, instead of having six significant predictors of Organizational Emergence, we seem to have five significant predictors, which contribute as much as 65% to its variance. Improvising does not seem to be a significant contributor to Organizational Emergence. This the same result as what was observed when the intuitive model was analyzed. Secondly, the most important predictors of Organizational Emergence are (1) Networking and (2) Market Conditions like with the research sample.

### Summary

When analyzing the robustness of different data sets, two issues emerge as general patterns when we use the complete data set from which right censored observations have been removed. First, the estimations are to a large extent similar between the two data sets.

Second, explained variance ( $R^2$ ) of Organizational Emergence increases considerable when the complete data set is used in the analysis.

The best predictors of Organizational Emergence seemed to be Market Conditions and Networking. The other constructs also made statistically significant contributions to Organizational Emergence, but did not have as big of impact on Organizational Emergence as the previous two constructs. Only the construct of Improvising, which already was the weakest contributor, does not seem to have a statistically significant effect on Organizational Emergence. At least, the robustness test indicates that the relationship is not statistically significant when complete data set was used.

### **5.2.5 Summary of empirical findings**

This section focused on testing two things: (1) the ability of the different constructs to predict organizational emergence, and (2) an estimation of the relative importance of the different constructs for the prediction of organizational emergence. As such, the section estimated the concurrent validity of the constructs, i.e. whether the theoretical constructs could predict organizational performance.

A tentative initial model (research model) was tested first. The initial model did not properly fit the data so the model was re-specified and tested again. The re-specification of each model was data-driven, except the intuitive model, which was more theory-driven. The whole approach was model generating rather than model testing. In addition, a complete data set was used to check the robustness of the results. That is, right censored observations were eliminated from the research sample for further analysis. The Table 30 summarizes the most important empirical observations of this study.

**Table 30.** Results of the empirical observations.

1.	Only the structural equation of Organizational Emergence has predictive relevance.
2.	The research model is able to explain 44% of the variance of Organizational Emergence.
3.	The removal of the construct of Nascent Entrepreneur from the research model increased the explained variance of the model.
4.	Market Conditions has a statistically significant positive effect on Organizational Emergence.
5.	Networking has a statistically significant negative effect on Organizational Emergence.
6.	Resource Combination has a statistically significant positive effect on Organizational Emergence.
7.	Founding Team has a statistically significant positive effect on Organizational Emergence.
8.	Resource Combination has a statistically significant positive effect on Organizational Emergence.
9.	Improvising has a statistically significant positive effect on Organizational Emergence.
10.	Technical Sophistication has a statistically significant negative effect on Organizational Emergence.
11.	Improvising has a statistically significant negative effect on Founding Team.
12.	Networking has a statistically significant positive effect on Founding Team.
13.	A model based on interaction effects of institutional and resources dependence forces (simple model) seems to produce best predictions of organizational emergence explaining almost 47 per cent of the variance in organizational emergence.
14.	When estimated separately, resource dependence and institutional models do not seem to have predictive relevance.
15.	Founding Team has a statistically significant negative relationship with Improvising.
16.	Improvising does not have a statistically significant relationship with Organizational Emergence.

As it turned out, amongst the different models, only the structural equation of Organizational Emergence seemed to have predictive relevance. The most important predictors of organizational emergence seemed to be Networking and Market Conditions. In addition, Resource Combination, Founding Team, and Technological Sophistication bear relevance as predictors of Organizational Emergence. Among these significant relationship, the constructs of Networking and Technological Sophistication had negative impact on Organizational Emergence.

Also notable is that the role of Improvising is somewhat questionable; the analysis of the complete data set revealed that Improvising does not make a statistically significant contribution to Organizational Emergence. While this result should be interpreted carefully

due to the low sample size of the complete data set, the results of the research sample and estimations of effect size and contribution to explained variance already indicated that the role of Improvising is very low, at best, in explaining Organizational Emergence. In addition, the role of Nascent Entrepreneur in predicting Organizational Emergence was disturbing. At least, the removal of the construct from the model increased immediately the explained variance in Organizational Emergence.

Interesting statistically significant relationships were also detected between Improvising and Founding Team, as well as Networking and Founding Team. The relationship between Improvising and Founding Team seem to be rather strong, because there was also a statistically significant relationship when the impact was measured from Founding Team to Improvising. Whereas, the impact of Founding Team to Networking was not statistically significant.

As a whole, this study has succeeded in identifying important predictors of organizational emergence. All the models had good concurrent validity in the sense that the constructs had very important predictive power. The explained variances were constantly above 40 per cent despite the fact that right censored data set was used in the analysis.

## 6 CONCLUSIONS AND IMPLICATIONS OF THE STUDY

The sixth and the last critical milestone of this study, Task of theorizing is achieved in this chapter. That is, propositions will be put forward concerning the prediction of organizational emergence. At the same time, the fourth research question is answered. The fourth research question is related to the external validity of the constructs, i.e. generalizability of the results. In addition, implications are drawn, avenues for future studies discussed, and finally, the limitations of the study are discussed.

### 6.1 Synthesis

Pre-organizations are generally very dependent on external resources at the time of founding of new organizations. At the same time and thanks to liabilities of newness, it is almost a requirement for a pre-organization to have legitimacy in order to become a new organization. As has been discussed, we know relatively little about the factors that would lead to new organization. One reason for this may be that it is difficult to study something that does not exist in the official statistics. This study set to explore the determinants of organizational emergence in order to enhance our understanding on the reasons why some pre-organizations succeed in becoming new organizations. Through series of research questions, the main objective of this study was to formulate a mechanism for the prediction of organizational emergence and to put forward proposition for future testing. In other words, this study set to contribute to the literature concerning organizational emergence by trying to come up with a mechanism to predict organizational emergence.

The first research question was after theoretical constructs that had the potential to be the determinants of organizational emergence. The study leaned on two theoretical perspectives to develop a preliminary understanding of organizational emergence. The institutional theory and the resources dependence theory share the interest in legitimacy, but offer different accounts for the possession of legitimacy. Institutional theory, on the one hand, points out that pre-organizations should have the right kind of configuration of legitimated



elements to be legitimated by their immediate audience. That is, the immediate audience of a pre-organization exercises coercive pressure to which a pre-organization needs to conform if it wants to be legitimated. A pre-organization should exhibit a favorable configuration in terms of background and characteristics of the nascent entrepreneur, quality of the founding team, and favorable market conditions. The resource dependence theory, on the other hand, claims that legitimacy can be acquired from the environment like any other operational resource through proactive behavior. It is through improvising, networking, and resource combination activities that legitimacy is acquired from the environment.

After the identification of the potential constructs for the prediction of organizational emergence, the second research question asked how organizational emergence should be modeled based on these constructs. While the two theoretical perspectives give opposing accounts on pre-organizations' chances to have legitimacy and therefore to become a new organization, the conceptual framework of Cooper (1993) was used to integrate the two theoretical strands. This study echoes Poole and Van de Ven (1989) with the belief that a good theory is a limited and precise picture. Following this logic, this study built a model, which includes six independent constructs to predict organizational emergence. By using a limited number of constructs, the model of this study goes against the logical conclusion that everyone is right and that every thing matters in organizational performance studies. Instead, the model takes a firm standpoint by signaling that only some aspects of the complex phenomenon are important enough to be investigated empirically. This study believes that scientific work begins when we are able to say that some things are more important than others in particular contexts.

The third research question was after the concurrent validity of the proposed model of organizational emergence. Therefore, a methodological approach was designed for the empirical exploration of the proposed model. Due to lack of knowledge about the population of pre-organizations in France, a convenience sample, made of participants of a national business plan competition, was located for the empirical exploration of the proposed model. A self-administered questionnaire was used to collect cross-sectional data from the nascent entrepreneurs. PLS estimation technique, which is part of the second

generation multivariate analysis, was used to explore the proposed model of organizational emergence.

The study has succeeded in investigating the focal phenomenon with scientific rigor and therefore has the potential to contribute to the existing literature on organizational emergence. The proposed model of organizational emergence had concurrent validity to the extent that it predicts almost 50% of organizational emergence in the studied population. As a result, the findings of this study indicate clearly that pre-organizations need to both respond to the institutional pressures and act proactively in order to become a new organization.

More specifically, a pre-organization increases its chances to become a new organization when the market conditions, i.e. the characteristics of the industrial sector and the markets, are favorable, and when the quality of the founding team is high. Moreover, instead of just exhibiting a favorable configuration, a pre-organization needs to combine resource in order to succeed in becoming a new organization. Related to the previous, the efforts to enlarge one's existing network of connections seem to have a negative impact on the chances to become a new organization. The impact of improvising activities on organizational emergence is left unanswered in this study, because the results of different models did not produce conclusive evidence about the theorized impact. Finally, a pre-organization should not be too sophisticated what comes to technological knowledge, because technological sophistication seems to have has negative impact on organizational emergence.

The last research question was related to the empirical relevance of the proposed mechanism of organizational emergence. Propositions will be put forward short after the results are discussed in more details.

## **6.2 Discussion of the results**

The findings of this study indicate that those pre-organizations with a favorable market conditions and a high quality of founding team are prone to be successful in the new

organization creation. Therefore, it seems that if pre-organizations enter an industry, which has certain type of characteristics, and the founding team meets some minimum criteria, it increases pre-organizations chances to become a new organization. Interestingly enough, this finding bears similarity to the message of population ecology (Hannan & Freeman 1977; Aldrich 1979), which speaks about carrying capacity. A population of organizations occupies a niche. Because of resource scarcity, a niche has a carrying capacity and allows only a limited number of organizations to exist in a niche. The findings of this study seem to echo the message of population ecologists, at least to some extent.

The difference with central ideas of the population ecology is that in addition to the favorable market conditions there are also other factors influencing the emergence of organizations. Instead of just adjusting to the demands of immediate audience, a pre-organization can transform itself into a new organization through proactive behavior. Indeed, the finding that legitimating behaviors have an impact on organizational emergence emphasizes the importance to investigate also the human side of the organizational emergence equation. Managerial choice is also relevant in determining the fate of a pre-organization. It is not only the carrying capacity (i.e. market conditions), which is an important determinant of organizational emergence.

Therefore, summarizing the legitimating behaviors findings, this study found that networking, resource combination and, to some extent, improvising activities have statistically significant relationships with organizational emergence. More specifically, networking activities have *negative* impact on organizational emergence. The fact that a pre-organization, which spends time in establishing new contacts and looking for partners, is not able to transform itself into a new organization, is a surprising finding and seems to be in direct contradiction with the current networking literature. However, most of the networking studies take networks as some kind of asset of nascent entrepreneurs. Networks are large or small, relations loose or tight, etc. Whereas, this study looked at networking as an activity. It may well be that a network needs to be formed before the creation of a new organization because during the creation process the focus of nascent entrepreneurs and pre-organizations need to be elsewhere. The rationale for the previous claim could be that the search for R&D partner and technology partners (which were two of the three items of

the construct) should be done at the very early stages of the entrepreneurial process preceding the start of the gestation phase. Perhaps the pre-organizations, which responded that they have spent time and energy in finding tech partners, were not as advanced in the entrepreneurial process as we could have supposed based on their participation in the national business plan competition.

Indeed, the types of legitimating behaviors in which pre-organizations should engage themselves in during the gestation period seem to be related to resource combination and improvising. The fact that a pre-organization spends time on resource combination activities (finalizing the prototype, buying or leasing space and getting equipments) seems to increase its chances to become a new organization. Also, engaging itself into improvising activities (to speak-as-if the business had already been created: to create logos, business cards, etc; and to illustrate the potential of the business in every possible means) seems to increase the odds to some modest extent as suggested by other scholars too (Gartner et al. 1992; Delmar & Shane 2004). Yet, this finding needs to be interpreted with caution due to the fact that the relationship between improvising activities and organizational emergence was not statistically significant in all of the tested models.

Based on the findings, the experience and background of nascent entrepreneurs seems not to have any relevance in explaining organizational emergence. While being an upsetting finding, the same finding has found some support from earlier studies too using the SPED dataset in the US (e.g. Newbert & Tornikoski 2003) and in Sweden (e.g. Davidsson & Honig 2003). In fact, Davidsson and Honig (2003) suggest that human capital may have different roles for discovery versus for exploitation process. Using their own words: "*The study supports human capital in predicting entry into nascent entrepreneurship, but only weakly for carrying the start-up process towards successful completion.*" In other words, human capital may facilitate entrepreneurial discoveries, but it is not necessarily enough to make the pre-organization to become a new organization. As a consequence, it seems reasonable to expect that predicting discovery process would require a different equation than predicting organizational emergence. This was earlier implied by the studies related to organizational life cycles and gestation activities. Since this study did not concentrate on the discovery process, the previous claims could not be fully investigated.

Moreover, Zacharakis and Meyer (1988: 72) pointed out that personal and team characteristics seem to be the most important decision criteria of venture capitalists based on several ex post survey studies. Despite this general state of the field, their own investigation, and the one of Hall and Hofer (1993), seems to indicate that the entrepreneur factor does not appear that important. Instead of looking at personal characteristics, market characteristics might be better determinants of who gets funding and who does not. While not directly measuring the perception or decision criteria venture capitalists (i.e. one immediate audience of pre-organizations), the findings of this study seem to point to the same direction as the message of Zacharakis and Meyer (1988). Market conditions seem to be more important determinants of organizational emergence than nascent entrepreneur. While the authors also suspected the role of the team characteristics in the decision criteria of venture capitalists, this study takes the opposite direction with the finding that founding team seems to have an important role in explaining organizational emergence.

When comparing the effects of legitimated elements, on the one hand, and legitimating behaviors, on the other hand, on organizational emergence (in section 5.2.2.3), we learned that alone institutional model or resource dependence model do not have predictive relevance. It is only when both legitimated elements and legitimating behaviors are integrated into a model that the model has predictive relevance. This finding could be taken as a modest indication to suggest that the institutional theory or the resource dependence theory alone is not able to explain the focal phenomenon. Only by integrating the two theories it was possible to offer an explanation of organizational emergence with predictive relevance. While this finding is only tentative and needs to be investigated more thoroughly, it is an interesting finding and could be taken as an argument in support of the general claim that different theoretical viewpoints should be integrated in order to get a more comprehensive picture of the social phenomenon (e.g. Gersick 1991, 1994).

What is interesting to notice is that the control construct, Technological Sophistication, also made a statistically significant contribution to organizational emergence, but that the relationship between these two constructs was negative. That is, the more sophisticated a pre-organization is from the point of view of its technology, the less likely it will transform

itself into a new organization. This result seems to fit well with the central thesis of the institutional theory according to which a high level of innovation does not lead to isomorphism with the environment. Instead, a highly innovative pre-organization has little or no correspondence with its environment. The point seems to be that it is difficult to be an innovator and successful in new business creation at the same time. The findings of the present study seem to point to this direction.

Delmar and Shane (2004) argue that the timing of undertaking particular activity will influence the survival of new ventures. This study did not challenge this argument but adds that the difference that the amount of time and energy invested in these activities is as important. Everyone has only 24 hours per day at his disposal during which only a certain number of activities can be undertaken. Nascent entrepreneurs need to choose what to do to succeed in creating new organizations. As such, it is not only the timing (i.e. sequence of activities) but the time and energy put into certain activities that will eventually differentiate new organizations and pre-organizations. The findings of this study, at least, confirm that time and energy put into networking activities seems to affect organizational emergence negatively. By contrast, time and energy consumed in resource combination and improvising activities seem to increase the odds of organizational emergence. A word of caution: this study did not explicitly test whether the timing or the investment of time & energy is more important in organizational emergence.

In a way, in our study, we also tried to test whether the conceptual framework of Cooper (1993) receives any empirical support. As pointed out, Cooper did not use theoretical reasoning when presenting his framework. Instead, he pointed out that interrelationships could be examined in other ways as well. The findings of this study seem to point to the direction that the conceptual framework of Cooper (1993) does not receive empirical support. At least, in the research model, none of the structural relationships, except the one of organizational emergence, had predictive relevance. Only some individual paths linking different constructs had statistical significance, and yet, the contributions were very low. As such, this study finds that the research model, which was partly based on the framework of Cooper (1993), did not find correspondence with empirical reality.

When evaluating the findings of this study, one needs to bear in mind that a structural model is always a linear model. One could question whether a linear model could represent and causally explain any complex phenomenon in the empirical world. Indeed, if in-depth data had been collected about pre-organizations, we would have witnessed the fact that relationships in the real world do not fall into linear patterns and come to the conclusion that our linear research model is an oversimplification of the world. However, the strength of linear models is that they are conceptually simple, computationally tractable, and often empirically adequate. Linear models are not true – literally – but they do explain correlation data very well. Moreover, no alternative linear model is readily available to provide as good an explanation of correlations. (Yu 2001)

The study has contributed to the existing literature on organizational emergence. The simple model was able to predict almost 50 per cent of organizational emergence. Yet, this is only half of the variance in organizational emergence. What about the rest: where are the missing constructs? One could list several potential constructs that could add to the explanation. Yet, a research model is always mis-specified in the sense that some constructs are excluded from the model. In our study, we decided to examine only three potential legitimizing forces and three potential legitimating behaviors as they act upon organizational emergence. The exclusion of other constructs and the investigation only some of them is done because of simplicity. If every construct should be included in a model, the information we learn from a very complex model is zero. The fact that we can claim that some constructs matter more than others is a good start for a theorizing process.

### **6.3 Conclusions**

When drawing conclusions, propositions are put forward. When making a proposition, one needs to bear in mind the limitations of this study (see Section 6.6.). Despite the limitations, in our study we believe it has made a contribution to literature on organizations and their emergence. The coming propositions are intended to be general to allow their testing in different contexts. After all, science advances not only when completely new insights are put forward but also when studies are replicated in different contexts.

The study will make conclusions from four points of view. First, propositions are put forward from the point of view of the institutional theory and, secondly, from the point of view of the resource dependence theory. Third, propositions are also put forward concerning the integrated model. Fourth, while there was only one structural equation in the research model that had predictive relevance, i.e. the one of organizational emergence, there were several statistically significant path loadings between different constructs. Due to the exploratory nature of the study, conclusions are also drawn from these statistically significant paths for future testing. The constructs that did not make statistically significant contributions to organizational emergence did not lead to any proposition and are therefore not discussed here. Table 31 summarizes the propositions.

**Table 31.** Propositions of the study.

Proposition 1:	A favorable market conditions increases a pre-organization's chances to be in conformity with the demands of its immediate audience, and therefore, market conditions have a positive impact on organizational emergence.
Proposition 2:	Experienced founding team increases a pre-organization's chances to be in conformity with the demands of its immediate audience, and therefore, the founding team has a positive impact on organizational emergence.
Proposition 3:	Investment of time and energy in improvising activities seem to increase a pre-organization's chances to acquire legitimacy from its environment, and therefore, improvising could have a positive impact on organizational emergence.
Proposition 4:	Investment of time and energy in networking decreases a pre-organization's chances to acquire legitimacy from its environment, and therefore, networking has a negative impact on organizational emergence.
Proposition 5:	Investment of time and energy in resource combination increases a pre-organization's chances to acquire legitimacy from its environment, and therefore, resource combination has a positive impact on organizational emergence.
Proposition 6:	The exhibition of legitimated elements and the investment of time and energy in legitimating behaviors increase a pre-organization's chances to have legitimacy, and therefore, legitimated elements and legitimating behaviors together have a positive impact on organizational emergence.
Proposition 7:	High technological sophistication decreases a pre-organization's chances to be in conformity with the demands of environment, and therefore, technological sophistication has a negative impact on organizational emergence.
Proposition 8:	The quality of the founding team has a negative impact on the intensity of improvising activities of a pre-organization.
Proposition 9:	Investment of time and energy in networking activities increases the quality of the founding team of a pre-organization.



### 6.3.1 Propositions related to institutional theory

The institutional theory contributed to the model of organizational emergence with three constructs. The mechanism offered by the institutional theory predicts that pre-organizations conform to the demands of their environment through the exhibition of legitimated elements (Zucker 1987). Because of conformity to institutional demands, a pre-organization would be able to transform itself into a new organization.

This study found some evidence to the institutional rule that the institutional framework fundamentally influence what organizations come into existence (North 1990: 5). The most important predictor of organizational emergence turned out to be market conditions. As pointed out earlier, the construct reflects the characteristics of the industrial sector by focusing on firm differences in strategies, differences in products and the stage of development of an industry. The founding team also turned out to an important predictor of organizational emergence. The construct reflects the characteristics of the founding team in terms of collective industry, managerial and entrepreneurial experience as well of collective education level, team completeness, and the number of team members.

The finding of this study regarding market conditions seems to confirm that the chances of a pre-organization to become a new organization increase if the characteristics of the industry and target markets are favorable in terms of variety in firm strategies and available products as well as in terms of the stage of the life cycle of the industry. Moreover, the finding regarding founding team seems to confirm that the chances of a pre-organization to become a new organization increase if the characteristics of the founding team are favorable in terms of different experiences, educational background, team completeness, and team size. Based on these findings, one could conclude that among technology-based pre-organizations, favorable market conditions (i.e. high quality of opportunity) and experienced founding team (i.e. high collective ability) have positive effects on organizational emergence.

The constructs of Market Conditions and Founding Team were derived from the institutional theory by considering them as potential components of the legitimated

elements of pre-organizations. The institutional theory suggested and the findings of this study seem to confirm that pre-organizations conform to the environmental demands partly based on the characteristics of the market conditions and qualities of the founding team. To turn this statement around, external audience seems to regard highly the overall quality of the opportunity and the characteristics of the team when evaluating a pre-organization. Therefore, when using theoretical reasoning, the findings of this study would suggest the following:

**Proposition 1: A favorable market conditions increases a pre-organization's chances to be in conformity with the demands of its immediate audience and, therefore, market conditions have a positive impact on organizational emergence.**

**Proposition 2: Experienced founding team increases a pre-organization's chances to be in conformity with the demands of its immediate audience and, therefore, the founding team has a positive impact on organizational emergence.**

### **6.3.2 Propositions related to resource dependence theory**

The resource dependence theory contributed to the model of organizational emergence with three constructs. The mechanism offered by the resource dependence theory predicts that pre-organizations acquire legitimacy from their external environment through a set of intensive legitimating behaviors (Dowling & Pfeffer 1975). Because of acquired legitimacy, a pre-organization would be able to transform itself into a new organization. The findings of this study seem to indicate that all the three constructs made a statistically significant contribution to organizational emergence. That is, improvising, networking, and resource combination activities are important predictors of organizational emergence.

First, networking activity turned out to be an important predictor of organizational emergence, but in an unexpected fashion. The construct is reflected in three types of activities: contacting potential suppliers, finding R&D partners and finding technological partners. Second, resource combination turned out to be an important predictor of organizational emergence. The construct is reflected in three types of activities, finalizing

the prototype, buying or renting space, and getting equipment. Last, improvising activity turned out to be, to some extent, an important predictor of organizational emergence. The construct is reflected in three types of activities, namely speaking-as-if the pre-organization were a new organization, creating artifacts to demonstrate the existence, and demonstrating the potential of the project with all available means.

Concerning the finding related to networking activity, this study seems to conform that the chances of a pre-organization to become a new organization decrease if time and energy are spent contacting potential suppliers, finding R&D partners, and finding technological partners. The finding related to resource combination activity seems to confirm that the chances of a pre-organization to become a new organization increase if time and energy are spent finalizing a prototype, buying or renting space, and getting equipment. The tentative finding of this study regarding improvising could confirm that the chances of a pre-organization to become a new organization increase through speaking-as-if, creating artifacts, and demonstrating the potentiality of the project. However, this finding is not without reservations, as discussed earlier. Based on these findings, one could conclude that among technology-based pre-organizations the intensity of improvising and resource combination have positive effects on organizational emergence, whereas the intensity of networking has a negative effect on organizational emergence.

The constructs were derived from the resource dependence theory by considering them as potential elements of legitimating behaviors. The resource dependence theory suggested and the findings of this study seem to confirm that pre-organizations can act proactively and acquire legitimacy from their environment through improvising and resource combination. Moreover, the findings of this study seem to confirm that networking decreases a pre-organization's chances to acquire legitimacy from its environment. Therefore, when using theoretical reasoning, the findings of this study would suggest the following:

**Proposition 3:** Investment of time and energy in improvising activities seem to increase a pre-organization's chances to acquire legitimacy from its environment and, therefore, improvising could have a positive impact on organizational emergence.

**Proposition 4:** Investment of time and energy in networking decreases a pre-organization's chances to acquire legitimacy from its environment and, therefore, networking has a negative impact on organizational emergence.

**Proposition 5:** Investment of time and energy in resource combination increases a pre-organization's chances to acquire legitimacy from its environment and, therefore, resource combination has a positive impact on organizational emergence.

### **6.3.3 Propositions related to integrated model**

By integrating the institutional theory and the resource dependence theory using the framework of Cooper (1993) as a guiding line, this study examined three potential legitimated elements and three organizational behaviors as they act upon organizational emergence. The study proposed and empirically verified that two different theories together are able to predict organizational emergence. By integrating the institutional theory and the resource dependence theory, this study was able to demonstrate that legitimated elements and legitimating behaviors are able to produce an explanatory mechanism for the prediction of organizational emergence, but only when we considered the two together. The perspectives were not able to demonstrate predictive relevance when investigated separately. It seems that organization creation is a complex phenomenon where the institutional and the resource dependence relationships are present simultaneously. Pre-organizations not only need to conform to the expectations of their immediate audience but they also need to invest time and energy in legitimating behaviors, which is intended for legitimacy acquisition.

In other words, legitimated elements seem to improve a pre-organization's chances to conform to environmental demands, while legitimating behaviors seem to increase its chances to acquire legitimacy. Conformity and legitimacy acquisition together increase a

pre-organization's chances to become a new organization. In the present context, the acceptance of the previous arguments would lead to the following theoretical reasoning:

**Proposition 6: The exhibition of legitimated elements and the investment of time and energy in legitimating behaviors increase a pre-organization's chances to gain legitimacy and, therefore, legitimated elements and legitimating behaviors together have a positive impact on organizational emergence.**

### 6.3.4 Other propositions

The integrated research model was derived from the institutional theory and the resource dependence theory using the framework of Cooper (1995) as a guiding line. The research model proposed five different structural equations. The mechanism of integration included the idea that some of the constructs were more situational and context-specific (i.e. proximal), while others were more difficult to change (i.e. distal). The distal constructs made an impact on proximal constructs. Only one structural equation had predictive relevance using conservative statistics. While the study failed to prove the four other structural equations, several statistically significant path coefficients were still detected by the statistical analysis. The coming propositions are put forward for these significant contributions.

First, Technological Sophistication turned out to be an important predictor of organizational emergence. As pointed out earlier, the construct is formed by two characteristics of pre-organizations: level of product innovation and R&D emphasis. The findings of this study seem to confirm that the chances of a pre-organization to become a new organization decrease if the technological sophistication of the pre-organization is high in terms of product innovativeness and emphasis on R&D. Based on this finding, one could conclude that among technology-based pre-organizations, high technological sophistication has a negative effect on organizational emergence.

The construct was introduced as a control variable. It seems that the construct should be added to the model of organizational emergence, not as a control construct but as part of

theoretical rationale. This study proposes that in the future the construct of Technological Sophistication could be taken as one of the legitimated elements. Technological sophistication could be regarded as one characteristic of a pre-organization. To use the terminology of Cooper (1993), technological sophistication is an initial firm characteristic. Accepting the previous, the findings of this study seem to suggest that pre-organizations conform to environmental demands partly based on the technological sophistication of the pre-organization. To turn the previous statement around, the technological sophistication of the pre-organization seems to have very important meaning for external audience when evaluating a pre-organization. Therefore, when using theoretical reasoning, the findings of this study would suggest that:

**Proposition 7: High technological sophistication decreases a pre-organization's chances to be in conformity with the demands of its environment and, therefore, technological sophistication has a negative impact on organizational emergence.**

Second, improvising turned out to be an important predictor of the quality of the founding team, but in an unexpected fashion. The findings of this study suggest that improvising seems to decrease the quality of the founding team. The issue is whether there is a logical explanation to this connection: could improvising be an independent construct and have a negative relationship with Founding Team. A logical explanation to this relationship is out of the reach of this study. Since no logic is available to this connection, two options remain: to disregard the result, or to put forward propositions for future tests. The former one is adopted in this study. In other words, even though there was a statistically significant relationship between two constructs in the model of organizational emergence, this relationship is disregarded because of the lack of a logical explanation for the relationship.

Moreover, the intuitive model also indicated that a founding team has a negative impact on improvising. Again, the issue is whether there is a logical explanation to this connection: could founding team be an independent construct and predict the intensity of improvising activities and sound theoretically relevant? It sounds somewhat logical that the better the quality of the founding team, the less improvising behavior is needed: a pre-organization conforms to the expectations of its immediate audience partly through experienced

founding team and thus has less need to improvise. Therefore, this study puts forward the following proposition:

**Proposition 8: The quality of the founding team has a negative impact on the intensity of improvising activities of a pre-organization.**

Third, networking turned out to be an important predictor of the founding team. The findings of this study suggest that networking activity seems to increase the quality of the founding team. The construct of Networking was derived from the resource dependence theory by considering it as part of legitimating behaviors. Again, the issue is whether there is a logical explanation to this connection: could networking be an independent construct and predict the quality of the founding team and sound theoretically relevant? The more new social contacts are established, the better the quality of the founding team. Perhaps a pre-organization is able to introduce new members to the founding team and therefore increase the collective ability through networking. Through enlarging existing contacts, new individuals may join the founding team and increase the credibility of the team. Therefore, this study puts forward the following proposition:

**Proposition 9: Investment of time and energy in networking activities increases the quality of the founding team of a pre-organization.**

## **6.4 Implications**

The study and its findings and propositions have several important implications. Here, implications are drawn for three main parties: scholars, practitioners, and educators.

### **Theoretical and empirical implications**

There exists no theory about organizational emergence. Most of the organizational theories seem to concentrate on established organizations. In similar lines, the empirical-based knowledge about organizational emergence is very limited (Davidsson & Honig 2003). This study has contributed to both of these directions with the purpose of exploring the

organizational emergence phenomenon to increase our understanding on the reasons why some pre-organizations succeed in becoming new organizations.

First, this study used two seemingly opposing theories to propose a mechanism for the prediction of organizational emergence. The institutional theory and the resource dependence theory were integrated to offer a plausible mechanism for the prediction of organizational emergence. This study did not try to challenge the underlying rationales supporting these two theories. Instead, the theories were used to create a better understanding of the focal phenomenon. The central notion, which helped to reach that understanding, was legitimacy. The notion of legitimacy helped to bridge between the institutional theory and the resource dependence theory. As a consequence, a limited number of constructs derived from the two theoretical perspectives were identified as the predictors of organizational emergence. Besides the identified six constructs and one control construct, there are definitely others as potential determinants of organizational emergence. Yet, in this study, we believe that scientific work starts when we are able to say that some things are more important than others in particular contexts.

Second, this study has empirically shown that the institutional theory and the resource dependence theory are highly relevant for and applicable to the study of organizational emergence. As it turned out, institutional forces seem to act upon organizational emergence. The market condition and the founding team were found to be significantly related to organizational emergence. These findings highlight the importance of exhibiting legitimated elements in order to achieve conformity to the demands of the immediate audience of a pre-organization. Likewise, improvising, networking, and resource combination activities were significantly related to organizational emergence. These findings, on the other hand, highlight the importance of acting proactively to acquire legitimacy from the environment.

While this study was not specifically designed to test it, the findings seem to indicate that the institutional theory and the resource dependence theory do not have predictive relevance alone. Instead, it is when the two theories are integrated that we get an acceptable explanation of organizational emergence. The implication one could draw from this is



related to the nature of the focal phenomenon. While entrepreneurs seem to change the world around us by introducing novel combinations, it is perhaps also time to accept the idea that the structural properties of the environment have something to say in the entrepreneurial process. Entrepreneurs are not completely free to do everything they want if they want to succeed in creating new organizations. Once an opportunity has been spotted, it may not be the nascent entrepreneur who is organizing. It is the opportunity that tells a nascent entrepreneur what kind of choices and decisions need to be taken so succeed. In addition, when there are changes in the environment, an opportunity is bound to be affected, too. Therefore, while the requirements of identifying the most lucrative opportunity include creativity, innovativeness, knowledge, experience and so forth, the execution of the opportunity requires a detailed analysis of the environmental conditions. Environment seems to be organizing the activities of nascent entrepreneurs and not the other way around. An integrated theory about organizations and their emergence should reflect these ideas.

The empirical findings, while generally supporting common sense thinking about the determinants of organizational emergence, also produced some unexpected results. First, the nascent entrepreneur did not turn out to be a significant contributor to organizational emergence, despite the widely accepted view that individuals do matter. Second, one would expect to find a positive relationship between networking and organizational emergence. Yet, the findings indicate that networking had a significant negative impact on organizational emergence. While we can start the debate whether the constructs were operationalized properly or not, we should keep our minds open and explore the same factors in other contexts to see if the findings hold.

This study has also been a step in the direction of developing theories of causal relationships, as requested by several entrepreneurship scholars (Low and MacMillan 1988; VanderWerf 1988; Bygrave & Hofer 1991; MacMillan & Katz 1992). While the plausible causal mechanism of organizational emergence (i.e. research model) did not turn out to have predictive relevance what comes to most of the structural linkages between constructs, the empirical exploration was able to demonstrate that, among technology-based pre-organizations, six constructs were important determinants of organizational emergence.

After making the inquiry about the emergence of organizations, there is a general feeling that the cross-sectional design of the study has missed some important information. What have been demanded for long time are longitudinal designs in the studies of organizational emergence and entrepreneurship in general. The methods and tools have not been adapted to answer this demand until lately. In the classical regression world of statistical analysis, methods such as pooled time series have been utilized for some years now. These tools, while being able to treat longitudinal data and to produce great results, do not accept the use of constructs (i.e. latent variables) or causal path models. Therefore, what are needed are tools and methods able to estimate longitudinal data together with structural models and constructs. To be able to say anything meaningful in the entrepreneurship field will soon require the mastering of very sophisticated second-generation multivariate longitudinal data analysis techniques.

#### **Implications to practitioners**

How can nascent entrepreneurs increase their odds to be legitimated? The findings of this study seem to emphasize, at least partly, that planning prior start-up efforts seems to increase the odds of a pre-organization in becoming a new organization. At least, when a nascent entrepreneur has identified an opportunity, he/she should put all her energy to carry out a feasibility plan to determine what the market conditions are. Moreover, special attention needs to be paid to the formation of the founding team because the qualities of the founding team (i.e. collective ability) is one important determining factor of organizational emergence. Indeed, it is the role of planning to position the pre-organization in the right industry, and it is the task of the nascent entrepreneur to choose his/her co-founders.

Contrary to the suggestion of Zacharacis and Meyer (1988:72), the findings of this study seem to suggest that when in contact with the external audience – venture capitalists, business angels, potential suppliers, and other resource providers – a nascent entrepreneur should emphasize the founding team and its qualities. Highly experienced founding team seems to increase the odds of a pre-organization to become a new organization. On the contrary, echoing Zacharakis and Meyer (1988), it seems that the personal characteristics of

the nascent entrepreneur do not have such an influence on external audience in the execution phase of the entrepreneurial project.

However, careful planning in order to place the pre-organization in a lucrative industry and the careful selection of the founding team are only a half of the coin. It seems that masterful planning is a necessary but not sufficient condition of organizational emergence. Pre-organizations also need to carry out different kinds of behaviors in order to succeed. Resources need to be combined and an impression about an existing company needs to be created before a new organization is born. It is the role of all the members of the founding team, and of everybody who works for the entrepreneurial project, to use all their means in order to create an image of an existing organization and to work for producing unique products and services by combining resources in novel ways.

Moreover, when in contact with its external audience, a pre-organization should think of ways to demonstrate the viability and potentiality of the entrepreneurial project to acquire legitimacy from its immediate audience. Improvising behavior seems to lead to new organizations. Yet, a nascent entrepreneur should not forget the most common task of organizing, namely resource combination. Somehow the fact that resources are combined visibly (i.e. a prototype is finalized) seems to help a pre-organization to acquire legitimacy and, therefore, to transform itself into a new organization. Therefore, in addition to impression creation, a pre-organization should be concerned with the basic issue of combining existing resources to add value.

The findings of this study also seem to indicate that a nascent entrepreneur should also be careful about enlarging his or her contacts. At least, it seems that in the gestation phase, i.e. execution phase, heavy investment of time and energy to enlarge a R&D and technology network does not lead to organizational emergence. Perhaps, the nascent entrepreneur should have these partnerships established earlier in the entrepreneurial process, so that the time and energy could be invested in behaviors more crucial to organizational emergence.

Is it possible to create a new organization with improvising and without good favorable market conditions? That is, can a great impression creator transform a pre-organization into

a new organization simply by acting as if the new organization already existed? In the light of the findings of this study, the answer is no. What are also needed are the legitimated elements, such as good favorable market conditions and/or experienced founding team to make the pre-organization to take a leap into a new organization. To summarize, nascent entrepreneurs should take into account that only careful planning and the key actors' proactive behavior allows a project to become a new organization.

### **Implications to educators/mentors**

Is it possible to interest students, unemployed people or other individuals in entrepreneurship to such an extent that they decide to become entrepreneurs? If we assume that all the previous groups of people have already spotted a business opportunity, the findings of this study seem to suggest that yes, indeed, it is possible to transform them into entrepreneurs. In other words, educators and mentors can make the difference in the gestation phase of an entrepreneurial project.

First, while we have to be careful when interpreting the results of this study, it seems that the characteristics of the individual do not make a significant impact on organizational emergence. Therefore, if a business opportunity has been spotted, educators and mentors should focus their efforts on planning. Through planning, a pre-organization can be positioned in an industry characterized by favorable market conditions, and suitable founding members can be searched for. Compared to teaching people how to be creative or innovative, it is relatively easy to make individuals learn the arts of conducting a feasibility study and preparing a sound business plan: conducting a feasibility study or preparing a business plan require skills that can be learned by almost anyone.

What educators and mentors should take into account is that careful planning and positioning the pre-organization is not enough. As much attention needs to be paid to the actual organizing activities, i.e. execution of the plans. Execution does not only manifest itself in the gathering of production units (i.e. resource combination). The challenge will be how to teach potential entrepreneurs to be creative in creating a favorable impression about their pre-organizations. It is not lying to try to create an impression; it is an art. Generally,

we do not teach art in business schools, but planning and execution based on scientific principles.

To summarize, planning can make the difference in educating potential entrepreneurs but only when it is accompanied with careful and creative execution. These skills can be thought, but with different qualifications.

### **6.5 Avenues for future studies**

The following suggestions about possible extensions and applications of this study are made in the belief that organizational emergence is a focal phenomenon of interest to other scholars, too. We still do not have a complete picture of organizational emergence.

This study viewed legitimacy retrospectively; that is, the transformation of pre-organizations into new organization indicates that legitimacy is present. The mechanism of organizational emergence is based on the idea that pre-organizations face liabilities of newness. To overcome the lack of legitimacy, pre-organizations have two basic approaches: to acquire legitimacy from their environment through legitimating behaviors or to exhibit legitimated elements to conform to the demands of their immediate audience. However, this study did not measure legitimacy or whether legitimacy was acquired, nor whether conformity was achieved by the pre-organizations studied. This study assumed that when a pre-organization became a new organization legitimacy had been acquired and conformity achieved. In other words, this study showed that the independent constructs had a direct impact on organizational emergence and assumed that legitimacy acquisition & conformity were the central notions behind the mechanism. For future studies, it could be worth of the effort to concentrate on measuring directly legitimacy. It could be fruitful to add the construct of "Legitimacy" between the independent constructs and organizational emergence to test whether legitimating behaviors and legitimated elements really have an impact on legitimacy, and, in turn, whether legitimacy leads to new organizations. As indicated by Zimmerman and Zeitz (2002), research on the topic of new venture legitimacy is in its infancy.

To complicate the picture further, the dependent variable of this study, Organizational Emergence, could also be divided into two different concepts, despite the fact that construct validity and reliability were established for this construct. The dependent variable had two components, namely new organizational markers and the perception of the nascent entrepreneur concerning the status of the pre-organization. It would be an interesting question to investigate more in depth what affects the perception of the nascent entrepreneur. A proposition could be made that the experiencing of new organizational markers, i.e. the achievement of critical milestones, could have an impact on the perception of nascent entrepreneurs. That is, the more is achieved in terms of new organizational markers, the more positive perception of the nascent entrepreneur concerning the development of his/her project. This may sound a trivial question, but if the proposition is confirmed in the future, it could lead to other interesting questions. We could investigate, for example, whether the achievement of new organizational markers mediates the relationship between legitimating behaviors and perception of nascent entrepreneurs. That is, the activities carried out by a nascent entrepreneur would not affect directly his/her perception of the status of the project, but that the effect would be mediated through the achievement of new organizational markers. While this discussion is hypothetical and not based on theoretical reasoning, it could lead to interesting insights concerning causal relationships in organizational emergence, and therefore, be the start of quite a new theorizing process.

Would the results be different if the study had used measures that are more objective? When using subjective assessment, it is assumed that respondents can overcome perceptual biases to a large degree (Castrogiovanni 1991). If the respondent cannot overcome perceptual biases, the measure is likely to assess an individual's or organization's attributes rather than their environment itself. Take for example the construct of Market Conditions, which considered the differences in strategies of firms and in products and the stage of development of the industry. The information concerning these three issues came from the respondents, i.e. nascent entrepreneurs. While the nascent entrepreneur is a good expert of his industry, his/her perception may be biased or colored by optimistic assumptions about the nature of the industry. Thus, did the variables of the construct of Market Conditions measure the respondents' optimism or the real characteristics of the objective environment?

This study does not have the answer because objective and subjective data was not collected at the same time, but a strong belief that the subjective measures had some correspondence with reality. Future studies could try to come up with a research design to allow the use of objective measures. For example, one could focus on a single industry, use few outside experts of the industry and make them evaluate the market conditions of the different pre-organizations of the industry.

The role of the nascent entrepreneurs in an entrepreneurial process should be investigated in far more depth than it what was possible in this study. First, does background and experience of the nascent entrepreneur have a role in the gestation period, or do they affect only the outcome of the conception phase where opportunities are identified by individuals? We have witnessed that from the early years of 60's, when entrepreneurs' characteristics were the only determinant of entrepreneurial processes, we are finally arriving at a stage where we able to propose that perhaps in some stages of the entrepreneurial processes human capital does make a difference, whereas in some other stages it does not. This proposition is well worth of the effort. If the proposition turns out to have any validity, it could lead to a better integration of the ideas between environmental school and of those who advocate individual choice.

It is also far too premature to reject the idea that networking has negative consequences on organizational emergence. A more thorough investigation of networking behavior is a fruitful endeavor. In this study, networking behavior was mainly concerned with enlarging one's contacts (finding R&D partners, technology partners, and suppliers). What about the use of existing social contacts? This study did not measure the effects of using social networks on organizational emergence. For example, if a nascent entrepreneur knows people in important positions, he or she can pick up the phone and call them informally, instead of passing hours trying to get a hold of these people. It may well turn out that the use of informal networks improves a pre-organization's chances to become a new organization. In other words, it is important to design inquiries in such a way that both the aspects of networking and other aspects not covered by this short discussion are taken into account.

In addition, resource combination may be more complex than acknowledged in the study. In this study, resource combination was related to finalizing the prototype, renting or buying facilities, and getting equipment. What about the part of organizing activities, where procedures, processes, and routines are set up? The mere acquisition of physical resources may not be enough for pre-organizations to become new organizations: processes that connect human and physical resources and transform them into products and services are at least as important. In the future, scholars could try to distinguish this aspect of organizing to see whether it has an effect on organizational emergence.

It would be interesting to test further the central proposition of this study in regard to different types of entrepreneurial opportunities. The study of Samuelsson (2002) observed that exploiting innovative opportunities is systematically different from exploiting equilibrium opportunities. As implied by the author, innovative opportunities suffer more from liabilities of newness because ventures enter a new product-market arena, while equilibrium innovative opportunities are concerned with existing market transactions. Therefore, the pursuit of innovative opportunities could require more legitimated activities than the pursuit of equilibrium venture opportunities. This study did not make a distinction between different kinds of opportunities. As a future suggestion, it would be interesting to test whether the determinants of organizational emergence differ in regard to the type of opportunity.

Moreover, in this study, the origin of the pre-organizations did not receive much attention, because almost all of the pre-organizations were independent start-ups. While the nascent entrepreneurs bring knowledge and expertise to the pre-organization from their previous employment relationships, we did not, however, control or measure if technology, knowledge, manpower, proprietary rights, or other means of production were transferred from an existing organization to a pre-organization. In any case, nascent entrepreneurs always leave something behind, whether it is a large business organization, a start-up, unemployment, studies, etc. when they decide to pursue an entrepreneurial project. It would be worth of studying and interesting to know whether these material and immaterial resources and, in general, the relationship to the host organization have an impact on organizational emergence.



If one would like to add something to the picture painted here, what constructs could be added to the research model to make a real difference in explaining the focal phenomenon? This study assumed that the pre-organizations of the research sample were dependent on external resources (because they were technology-based and participated in a national business plan competition). Yet, the study did not measure the degree of dependence. A pre-organization may require 1 million euros to advance to prototyping (e.g. biotechnology), while for others it takes only 10 000 euros to achieve sales (e.g. software producer). Indeed, one could criticize this study for failing to show whether great dependence of external resources would inhibit a pre-organization from becoming a new organization. Even though a direct measure of dependence was not utilized, the construct of Technological Sophistication could be taken as an approximation of dependence. In general, the more sophisticated technology, the more time and resources are needed for its development. The findings of this study confirm the above-hypothesized relationship: technological sophistication seems to have a negative relationship with organizational emergence. While technological sophistication is not the exact match with the degree of dependence, it is a good start. It may be of interest to future studies to investigate the impact of degree of dependence on organizational emergence and the relationship between technological sophistication and the degree of dependence in a pre-organizational context.

## **6.6 Limitations of the study**

This study has some potential weaknesses, mainly related to the choice of theories and methodological design. First, there exists no theory of organizational emergence. Therefore, this study leaned on existing organizational theories, namely the institutional theory and the resource dependence theory. These theories were developed for existing organizations. While everything was made to adapt the central messages of these theories to the chosen context of organizational emergence, the match is by no means perfect. Important aspects of the focal phenomenon may have been neglected because there is a risk that the chosen theoretical lenses did not allow one to recognize the particularities of the focal phenomenon. Neither did this study explore into depth if other potential theoretical

perspectives could have been used to understand the phenomenon of organizational emergence better.

The decision to use the deductive approach is also a potential limitation to this study. At the same time as this study pointed out that there exists no theory of organizational emergence, it chose a deductive approach, where theory generation generally starts with reviews of existing literature and operating out prior theories. This is a clear contradiction. In situation where no theory exists, an inductive approach could be more useful to gain a preliminary understanding of the dynamics of the focal phenomenon. In the inductive approach, one moves from the observation of the empirical world to the construction of explanations and theories about what has been observed (Gil & Johnson 1991). If the inductive approach had been used first, the study might have generated more context-specific and meaningful constructs for further empirical exploration than the institutional theory and the resource dependence theory were able to do.

Another potential limitation may rise from the fact that this study focused only on the gestation phase of the organization creation process. While concentrating on the gestation phase and neglecting the preceding phase of the organizational creation process (i.e. conception), this study may have missed some important explanatory constructs in the model of organizational emergence. The different phases of organizational creation process are not without links to each other. Success in the conception phase leads to the gestation phase. As such, this study could have used a more longitudinal design to take into account important issues and processes stemming from the conception period. Moreover, closely related to the previous potential limitation, while using legitimating behaviors as a construct to represent the process dimension of organization creation, the real processes and dynamics of the organizational emergence could not have been captured to its fullest richness due to cross-sectional design and quantitative data. A more process-oriented and qualitative research design could have left constructs affecting the outcome unidentified.

The biggest limitation of this study may come from the fact that convenience sampling was used. While it may be practically impossible for a doctoral student to carry out by him or herself a PSED type of research project in France, it would have been a possibility, at least

theoretically speaking. Yet, in this study, we made the decision to use convenience sampling. The consequence of this decision is that claims about pre-organizations in general cannot be put forward based on the findings of this study. The findings hold, at best, for the studied sample. The propositions, while intended to be general, are still generated using the convenience sample.

Closely related to the previous point, one of the potential weaknesses of this study may come from the fact that the sample is not restricted to one industrial sector. Indeed, this study used a national business plan competition to identify pre-organizations. The submitted business plans, and therefore the pre-organizations, were located primarily in technology-based sectors, but were divided into many different industrial sectors. In an ideal situation, the whole sample of the study would have consisted of pre-organizations in the same industrial sector. Only by studying pre-organizations working in a similar environment, one has the potential benefit to be able to claim something definitive as a research result. In this study, the research results are only indicative and concern technology-based pre-organizations.

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## APPENDICES

**APPENDIX 1.** The original cover letter of the first e-mail administration of the questionnaire.

Mme / M. x,

Vous aviez participé à Tremplin Entreprise. Vous envisagiez donc, à cette époque, de créer une entreprise. Je suis un étudiant doctorant de l'ESSEC (Ecole Supérieure de Sciences Economiques à Cergy-Pontoise) et réalise ma thèse en Entrepreneurat. Je m'intéresse tout particulièrement à la façon dont votre projet a évolué depuis le concours.

Ci-joint vous trouverez un questionnaire à l'attention du *porteur* du projet que vous aviez présenté au Tremplin Entreprise. Vous me rendriez un immense service ainsi qu'au monde académique et ses praticiens, si vous acceptiez de prendre quelques minutes de votre temps pour y répondre. Si jamais vous ne travaillez plus au lancement de ce projet, votre réponse reste néanmoins *très* importante et votre opinion sera grandement appréciée.

J'ai travaillé en association avec les organisateurs des Tremplin Entreprise auparavant. Aujourd'hui, je réalise cette étude indépendamment avec l'accord de Tremplin Entreprise. Comme précédemment, je m'engage néanmoins à conserver toute la confidentialité de vos réponses, de votre projet et de vos coordonnées. Toutes les analyses de cette étude feront apparaître des résultats anonymes.

Le fichier joint est un fichier Word. Afin d'y répondre, ouvrez-le document et enregistrez-le sur votre ordinateur. Une fois l'avoir complété, sauvegarder ce document et envoyez-le moi comme fichier joint de votre email. Vous avez également la possibilité de me l'envoyer par fax au 01-34.43.30.01.

Si vous pouviez remplir et retourner ce questionnaire dès aujourd'hui (vous avez besoin d'une 20aine de minutes pour cela), je serai extrêmement ravi d'inclure votre projet dans mon étude.

Si jamais vous aviez des questions relatives à cette étude, n'hésitez pas à contacter soit à mon adresse e-mail [tomikoski@essec.fr](mailto:tomikoski@essec.fr), soit par l'intermédiaire du directeur de ma thèse, Monsieur le Professeur Hamid Bouchikhi ([bouchikhi@essec.fr](mailto:bouchikhi@essec.fr)).

Enfin, si vous souhaitiez savoir comment les projets présentés à Tremplin Entreprise ont évolué de façon générale depuis le concours, je serais ravi de vous envoyer une copie du résumé de cette enquête. Pour cela, cochez simplement la case à la fin du questionnaire pour indiquer que vous souhaitez recevoir une copie des résultats.

Dans l'attente de votre réponse, je vous prie d'agréer, Madame/Monsieur, l'expression de mes sincères salutations.

Erno Tornikoski  
Etudiant doctorant  
Groupe ESSEC  
[tomikoski@essec.fr](mailto:tomikoski@essec.fr)  
Fax: 01-34.43.30.01

**APPENDIX 2.** The original French questionnaire used for data collection (the font size and the page layout differ a bit from the administered questionnaire, but the order of questions is identical to the one of the administered questionnaire).

**(A1)** Vous aviez participé à Tremplin Entreprise. Vous envisagiez donc, à cette époque, de créer une entreprise. **Qu'en est-il aujourd'hui ? Ce projet de création a-t-il déjà abouti ? Etes-vous toujours en train de travailler à son lancement ?** [Choisissez une seule réponse]

- L'activité d'entreprise a déjà démarré. Ce depuis :  /  (mois / année)
- Je travaille toujours au lancement de ce projet.
- J'ai arrêté de travailler à ce projet depuis :  /  (mois / année)
- Le projet est en attente de développement depuis :  /  (mois / année)

*Même si vous ne travaillez pas ou plus à ce projet, je vous remercie de bien vouloir remplir l'intégralité du questionnaire. Vous pouvez lire toutes les questions suivantes au passé. Ainsi, à la question "Travaillez vous seul", vous pouvez lire : "Travailliez vous seul ?"*

**(A2)** Travaillez-vous à plein temps à ce projet (c-à-d que vous y travaillez au moins 35 heures par semaine) ? Si oui, depuis quand (quel mois et quelle année) ? [Choisissez une seule réponse]

- Oui, je travaille à plein temps à ce projet depuis :  /  (mois / année)
- Non, je ne peux pas travailler à plein temps à ce projet
- Non, je n'ai pas besoins de travailler à plein temps à ce projet

**A3)** Avez-vous recruté un salarié (quelqu'un qui n'est pas un (des) propriétaire(s) du projet) à temps plein ou mi-temps ? Si oui, depuis quand (quel mois et quelle année) ? [Choisissez une seule réponse]

- Oui, le premier depuis :  /  (mois / année)
- Non, pas encore mais ceci est prévu
- Non, je n'ai pas besoin de recruter des salariés pour progresser dans la création de l'entreprise

**A4)** Avez-vous obtenu des fonds externes de financements (subventions, crédits diverses, etc.) ? Si oui, depuis quand (quel mois et quelle année) ? [Choisissez une seule réponse]

- Oui, le premier en :  /  (mois / année)
- Non, pas encore
- Non, je n'ai pas besoin de trouver fonds externes pour progresser dans la création de l'entreprise

**A5)** Avez-vous investi votre argent personnel dans votre projet ? Si oui, depuis quand (quel mois et quelle année) ? [Choisissez une seule réponse]

- Oui, depuis :  /  (mois / année)
- Non, pas encore
- Non, je n'ai pas besoin de investir mon argent pour progresser dans la création de l'entreprise

**A6)** Avez-vous déjà réalisé une première vente de votre produit ou service ? Si oui, depuis quand (quel mois et quelle année) ? [Choisissez une seule réponse]

- Oui, le premier depuis :  /  (mois / année)
- Non, pas encore (le produit/service/technologie est prêt(e) pour l'exploitation)
- Non, nous n'avons pas encore finalisé le développement de notre produit/service et/ou notre technologie n'est pas encore prête pour l'exploitation

**A7)** Avez vous déposé les statuts de votre société ? Si oui, depuis quand (quel mois et quelle année) ?

- Oui, depuis :  /  (mois / année)
- Non, pas encore

A8) Disposez-vous d'une ligne téléphonique (mobile ou fixe) séparée pour le projet? Si oui, depuis quand ?

Oui, depuis :  /  (mois / année)  
 Non, pas encore

A9) Avez-vous un compte bancaire dédié à ce projet? Si oui, depuis quand ?

Oui, depuis :  /  (mois / année)  
 Non, pas encore

B1) Ci-dessous sont citées des activités jalonnant souvent le processus de création d'une entreprise. A priori aucune de ces activités n'est plus importante qu'une autre. Le plus intéressant est savoir **combien de temps et d'énergie votre équipe et vous investissez ou avez investi dans les activités suivantes pendant le lancement de votre projet** ? [Choisissez entre les valeurs 1 et 7, celle qui correspond la mieux à votre cas. Le chiffre 4 au milieu de l'échelle de valeurs correspond à une situation neutre]

Nous n'avons pas investi une seule minute de notre temps et de notre énergie dans cette activité (cette activité n'est pas importante)    1   2   3   4   5   6   7    Nous avons investi la majeure partie de notre temps et de notre énergie dans cette activité

Écrivez votre réponse dans cette rubrique (i.e. entre 1 et 7)

Emprunter le matériel de mes amis pour mon projet / affaire	
Parler de mon affaire comme si elle existait déjà	
Démontrer le potentiel de mon produit/service par tous les moyens possibles	
Créer un logo, du papier à entête, et des cartes de visite pour illustrer l'existence de mon affaire	
Discuter avec des clients potentiels	
Contacter des fournisseurs potentiels	
Passer par des amis et connaissance pour rencontrer des personnes importantes pour mon projet/affaire	
Trouver des partenaires pour la Recherche et le Développement du projet	
Trouver des partenaires technologiques	
Trouver des partenaires marketing	
Développer la technologie existante	
Acheter/louer des locaux	
Obtenir de l'équipement	
Finaliser un prototype de notre produit / service	
Réaliser une étude de marché	

B2) Quel est votre niveau d'étude :

Votre réponse :

- 1= BEP ou autre
- 2= Bac
- 3= Bac+2
- 4= Bac+3
- 5= Bac+4 (Maîtrise, Diplôme d'une grande école, etc.)
- 6= DESS, DEA
- 7= Doctorat, PhD

C1) Comment voyez vous les choses concernant **le secteur d'activité** de votre projet ? (Choisissez entre les valeurs 1 et 7, celle qui correspond la mieux à la situation actuelle de votre projet. Le chiffre 4 situé au milieu de l'échelle de valeurs correspond à une situation neutre)

<i>Il y a une grande diversité entre les entreprises en terme de qualité de produit, de service clientèles et d'approches marketing</i>	1	2	3	4	5	6	7	<i>Il n'y a pas diversité entre les entreprises en terme de qualité de produit, de service clientèles et d'approches marketing</i>
Votre réponse :								<input type="text"/>

<i>Il y a une grande différence entre les produits et services que délivrent les sociétés du secteur</i>	1	2	3	4	5	6	7	<i>Il n'y a pas diversité entre les produits et services que délivrent les sociétés du secteur</i>
Votre réponse :								<input type="text"/>

<i>Il y a un (ou deux ou trois) concurrent(s), confortablement installés depuis quelques années, qui contrôlent le marché</i>	1	2	3	4	5	6	7	<i>Notre entreprise est la première dans ce secteur, il n'y a pas concurrence</i>
Votre réponse :								<input type="text"/>

<i>L'activité de ce secteur est à ses débuts et à un stade de fort développement</i>	1	2	3	4	5	6	7	<i>L'activité de ce secteur est stable et est en train de se réorienter vers de nouvelles opportunités</i>
Votre réponse :								<input type="text"/>

<i>Notre produit / service répond à une demande actuellement inexploitée sur le marché</i>	1	2	3	4	5	6	7	<i>Notre produit / service répond à une demande qui a toujours existé sur le marché</i>
Votre réponse :								<input type="text"/>

<i>L'environnement actuel nous offre suffisamment de moyens financiers, de capital humain et ressources nécessaires au développement de notre produit</i>	1	2	3	4	5	6	7	<i>L'environnement actuel ne nous offre pas de moyens financiers, de capital humain et ressources nécessaires au développement de notre produit</i>
Votre réponse :								<input type="text"/>

D1) Comment estimez-vous votre expérience sectorielle (expérience acquise dans le même domaine que celui de votre projet) avant de vous impliquer dans votre projet ?

<i>Je n'avais aucune expérience sectorielle avant de travailler au projet</i>	1	2	3	4	5	6	7	<i>J'avais acquis une expérience sectorielle très importante avant de travailler au projet</i>
Votre réponse :								<input type="text"/>

D2) Comment estimez-vous votre expérience entrepreneuriale (participation à des projets de création d'entreprise) avant de vous impliquer dans votre projet ?

<i>Je n'avais jamais été impliqué dans une création d'entreprise avant de travailler au projet</i>	1	2	3	4	5	6	7	<i>J'avais été impliqué dans plusieurs créations d'entreprise avant de travailler au projet</i>
Votre réponse :								<input type="text"/>



D3) Comment estimez-vous votre expérience managériale (expérience d'une fonction de dirigeant) avant de vous impliquer dans votre projet ?

<i>Je n'avais aucune expérience managériale avant de travailler au projet</i>	1	2	3	4	5	6	7	<i>J'avais acquis une expérience managériale très importante avant de travailler au projet</i>
Votre réponse :								<input type="checkbox"/>

E1) Travaillez-vous seul(e) à la réalisation de votre projet?

Oui [Si « oui », allez directement à la question numéro F1]  
 Non

E2) L'équipe « start-up » est un groupe de personnes travaillant à un même projet. Dans votre cas, combien de personnes travaillent actuellement avec vous à cette réalisation ?

Votre réponse :  personne(s) travaille(nt) avec moi

E3) Un ou plusieurs membres de l'équipe actuelle peuvent avoir déjà assumé une fonction de dirigeant avant de travailler à votre projet. Comment estimez-vous l'expérience managériale de votre équipe actuelle ?

<i>Aucun membre de l'équipe actuelle n'avait d'expérience managériale avant de travailler au projet</i>	1	2	3	4	5	6	7	<i>Chacun des membres de l'équipe actuelle avait une expérience managériale très importante avant de travailler au projet</i>
Votre réponse :								<input type="checkbox"/>

E4) Un ou plusieurs membres de l'équipe actuelle peu(ven)t avoir travaillé à des projets de création d'entreprise auparavant. Comment estimez-vous l'expérience entrepreneuriale de votre équipe actuelle ?

<i>Aucun membre de l'équipe actuelle n'avait été impliqué dans une création d'entreprise avant de travailler au projet</i>	1	2	3	4	5	6	7	<i>Chacun des membres de l'équipe actuelle avait été impliqué dans plusieurs créations d'entreprise avant de travailler au projet</i>
Votre réponse :								<input type="checkbox"/>

E5) Certains membres de l'équipe actuelle peuvent avoir travaillé dans un domaine similaire à celui de votre projet. Comment estimez-vous l'expérience sectorielle de votre équipe actuelle ?

<i>Aucun membre de l'équipe actuelle n'avait d'expérience sectorielle avant de travailler au projet</i>	1	2	3	4	5	6	7	<i>Chacun des membres de l'équipe actuelle avait une expérience sectorielle très importante avant de travailler au projet</i>
Votre réponse :								<input type="checkbox"/>

E6) Comment estimez-vous les compétences de votre équipe actuelle?

<i>Notre équipe actuelle ne possède que quelques unes des compétences essentielles au succès du projet</i>	1	2	3	4	5	6	7	<i>Notre équipe actuelle possède toutes les compétences essentielles au succès du projet</i>
Votre réponse :								<input type="checkbox"/>

E7) Quel est le niveau d'étude le plus courant parmi les membres de votre équipe actuelle ?

Votre réponse :

1= BEP ou autre  
 2= Bac  
 3= Bac+2  
 4= Bac+3  
 5= Bac+4 (Maîtrise, Diplôme d'une grande école, etc.)  
 6= DESS, DEA  
 7= Doctorat, PhD

F1) L'idée de votre projet ou l'opportunité a-t-elle beaucoup évoluée depuis le concours du Tremplin Entreprise ou est-elle restée identique à votre concept initial ?

*L'idée / opportunité est identique* 1 2 3 4 5 6 7 *L'idée / opportunité a beaucoup changé*  
 Votre réponse :

F2) Le concept de votre produit/service a-t-il évolué depuis le concours Tremplin Entreprises?

*Le concept de notre produit / service est identique* 1 2 3 4 5 6 7 *Le concept de notre produit / service a beaucoup changé*  
 Votre réponse :

F3) Vos marchés cibles ont-ils changé depuis le concours Tremplin Entreprises ?

*Nos marchés cibles sont identiques* 1 2 3 4 5 6 7 *Nos marchés cibles ont beaucoup changé*  
 Votre réponse :

F4) Y a t il eu des changements dans votre équipe de « start-up » depuis le concours Tremplin Entreprises?

*L'équipe est identique* 1 2 3 4 5 6 7 *L'équipe a beaucoup changé*  
 Votre réponse :

G1) En règle générale, nous pensons tous un jour ou l'autre à la création d'une société avant d'agir. En ce qui vous concerne, quand (quel mois et quelle année) avez vous commencé à réfléchir à votre projet ?

Votre réponse :  /  / année)

G2) Une étape importante de cette réflexion se caractérise par la première démarche de l'entrepreneur à travailler à cette idée de nouvelle entreprise. Ainsi, une personne peut faire une première étude de marché, elle peut écrire une première version de business plan, etc. Dans votre cas, quand (quel mois et quelle année) avez-vous fait cette première démarche de travailler à votre projet ?

Votre réponse :  /  / année)

Quelle était cette démarche ?

G3) Quel est/sera le principal de produit /service de votre activité?

Votre réponse :

H2) Décrivez-vous votre projet/activité comme étant [Choisissez une seule réponse] :

- une start-up indépendante (créée par une personne ou un groupe de personnes travaillant seul)
- une acquisition/une prise de contrôle d'une entité déjà existante?
- une start-up sponsorisée par une entreprise déjà existante ?
- autre, c'est-à-dire :

H3) Etes-vous satisfait de l'avancement de ce projet de création d'entreprise ?

<i>« Je ne suis pas du tout satisfait de l'avancement de ce projet »</i>	1	2	3	4	5	6	7	<i>« Je suis très satisfait de l'avancement de ce projet »</i>
Votre réponse :								
							<input type="checkbox"/>	

H1) Comment estimez-vous votre projet au point de vue technologique ? (Choisissez entre les valeurs 1 et 7, celle qui correspond le mieux à la situation actuelle de votre projet. Le chiffre 4 situé au milieu de l'échelle de valeurs correspond à une situation neutre)

<i>Des produits / services similaires étaient déjà disponibles sur le marché, il y a 5 ans</i>	1	2	3	4	5	6	7	<i>Aucun produit / service similaire était disponible sur le marché, il y a 5 ans</i>
Votre réponse :								
							<input type="checkbox"/>	

<i>L'activité de notre entreprise n'est pas du tout technologique</i>	1	2	3	4	5	6	7	<i>L'activité de notre entreprise est hautement technologique</i>
Votre réponse :								
							<input type="checkbox"/>	

<i>L'investissement en Recherche et Développement n'est pas du tout une priorité de notre entreprise</i>	1	2	3	4	5	6	7	<i>L'investissement en Recherche et Développement est une des priorités majeures de notre entreprise</i>
Votre réponse :								
							<input type="checkbox"/>	

H4) Comment évaluez-vous le déroulement du lancement de cette affaire ?

<i>Nous n'avons pas du tout passé de temps à démontrer la viabilité de ce projet à nos interlocuteurs extérieurs</i>	1	2	3	4	5	6	7	<i>Nous avons passé beaucoup de temps à démontrer la viabilité de ce projet à nos interlocuteurs extérieurs</i>
Votre réponse :								
							<input type="checkbox"/>	

<i>Nous n'avons pas du tout passé de temps à la recherche de partenaires stratégiques et à la signature de contrats de collaboration</i>	1	2	3	4	5	6	7	<i>Nous avons passé beaucoup de temps à la recherche de partenaires stratégiques et à la signature de contrats de collaboration</i>
Votre réponse :								
							<input type="checkbox"/>	

<i>Nous n'avons pas du tout passé de temps à trouver équipements, matériels, et locale pour lancer l'affaire</i>	1	2	3	4	5	6	7	<i>Nous avons passé beaucoup de temps à la recherche d'équipements, de matériels, et de locaux nécessaires au lancement de l'affaire</i>
Votre réponse :								
							<input type="checkbox"/>	

H5) Nom / Intitulé de votre Projet :

H6) Quelle est le situation géographique de votre projet (code postale) :

H7)) Votre nom :

H8) Votre âge :

H9) Votre genre:

- Femme  
 Homme

H10) Votre statut marital :

- Marié  
 Non marié

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**MERCI BEAUCOUP !** Vos réponses sont celles dont j'avais besoin pour ma thèse. Je vous remercie pour votre coopération. Etes-vous intéressé par l'envoi du résumé de cette étude ?

- Non  
 Oui, par e-mail :   
ou par adresse postale :

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*Si vous aviez-vous des remarques complémentaires à apporter concernant votre situation, le développement futur de votre projet, le Tremplin Entreprises, ou bien cette étude, n'hésitez pas à utiliser l'espace libre ci-dessous.*

**APPENDIX 3.** The cover letter of a remainder e-mail sent to respondents ten days after the first administration of the original questionnaire.

Monsieur x,

La semaine dernière, je vous ai fait parvenir un questionnaire relatif au projet que vous aviez présenté à Tremplin Entreprises 2001/2002. N'ayant reçu de nouvelles de votre part, je me permets de vous contacter et envoyer ce questionnaire à nouveau. En effet, votre contribution à cette thèse doctorale serait grandement appréciée et vos réponses et expériences feraient réellement une différence au niveau des résultats de cette étude compte tenu du petit nombre de participants que vous étiez à ce Tremplin Entreprises.

Au cas où vous ne travailleriez plus à ce projet, je me permets de vous envoyer un questionnaire différent, adapté à cette situation. S'il est fort utile de connaître les facteurs de succès, il est également essentiel de comprendre les raisons pour lesquelles de si nombreux projets de création d'entreprise n'aboutissent pas.

J'espère sincèrement que vous trouverez 20 min de votre temps pour compléter le questionnaire ci-joint. Certes, 20 min peuvent paraître un long moment, mais sachez que la mise au point de ce questionnaire m'a pris une année.

En espérant recevoir de vos nouvelles très prochainement, je vous remercie par avance pour votre temps et considération.

Cordialement,  
Erno Tornikoski  
Etudiant doctorant  
Groupe ESSEC

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*[Dear x,*

*Last week I approach you with a questionnaire related to your project in the Tremplin Entreprises 2001. Since I have not heard from you, I take the permission to send the questionnaire to you again. Your contribution to this doctoral study would be mostly appreciated, because you were not very numerous to participate in the Tremplin Entreprises. Your experiences can make a difference in the results.*

*In the case that you do not work on your project any more, I included a separate questionnaire adapted to the situation. As valuable it is to know why some projects are successful, we also need to understand the situations where a projects are less successful.*

*I hope that you find 20 minutes to fill in the attached questionnaire. 20 minutes may sound like a long time, but for me it has taken 1 year to design the questionnaire.*

*I hope to hear from you soon.*

*Regards,*

*Erno Tornikoski  
Doctoral Student  
Groupe ESSEC*

**APPENDIX 4.** An adapted version of the original questionnaire designed for terminated projects, and sent to respondents who informed and declined to respond to the original questionnaire (the font and the page layout differs somewhat from the administered one, but the order of questions is identical).

(A1) Vous aviez participé à Tremplin Entreprise. Vous envisagiez donc, à cette époque, de créer une entreprise. En suite, vous m'avez indiqué que votre projet était terminé ou en attente de développement. Ce depuis quand ? [Choisissez une seule réponse]

- J'ai arrêté de travailler à ce projet depuis :  /  (mois / année)  
 Le projet est en attente de développement depuis :  /  (mois / année)

Les questions suivantes concernent la situation précédant l'arrêt de votre projet.

(A2) Avant d'arrêter, travailliez-vous à plein temps à ce projet (c-à-d que vous y travailliez au moins 35 heures par semaine) ? Si oui, depuis quand (quel mois et quelle année) ? [Choisissez une seule réponse]

- Oui, je travaillais à plein temps à ce projet depuis :  /  (mois / année)  
 Non, je ne pouvais pas travailler à plein temps à ce projet  
 Non, je n'avais pas besoin de travailler à plein temps à ce projet

A3) Avant d'arrêter, aviez-vous recruté un salarié (quelqu'un qui n'est pas un (des) propriétaire(s) du projet) à temps plein ou mi-temps ? Si oui, depuis quand (quel mois et quelle année) ? [Choisissez une seule réponse]

- Oui, le premier depuis :  /  (mois / année)  
 Non, je n'avais recruté personne même si c'était prévu initialement  
 Non, je n'avais pas besoin de recruter de salariés pour progresser dans la création de l'entreprise

A4) Avant d'arrêter, aviez-vous obtenu des fonds externes de financements (subventions, crédits divers, etc.) ? Si oui, quand (quel mois et quelle année) ? [Choisissez une seule réponse]

- Oui, le premier en :  /  (mois / année)  
 Non, mais j'envisageais d'en obtenir  
 Non, je n'avais pas besoin de trouver fonds externes pour progresser dans la création de l'entreprise

A5) Avant d'arrêter, aviez-vous investi votre argent personnel dans votre projet ? Si oui, depuis quand (quel mois et quelle année) ? [Choisissez une seule réponse]

- Oui, depuis :  /  (mois / année)  
 Non, mais c'était prévu  
 Non, je n'avais pas besoin d'investir mon argent pour progresser dans la création de l'entreprise

A6) Avant d'arrêter, aviez-vous déjà réalisé une première vente de votre produit ou service ? Si oui, quand (quel mois et quelle année) ? [Choisissez une seule réponse]

- Oui, la première en :  /  (mois / année)  
 Non, c'était prévu (le produit/service/technologie était prêt(e) pour l'exploitation)  
 Non, nous n'avons pas encore finalisé le développement de notre produit/service et/ou notre technologie n'était pas encore prête pour l'exploitation

A7) Avant d'arrêter, aviez-vous déposé les statuts de votre société ? Si oui, depuis quand (quel mois et quelle année) ?

- Oui, depuis :  /  (mois / année)  
 Non

A8) Avant d'arrêter, disposiez-vous d'une ligne téléphonique (mobile ou fixe) séparée pour le projet? Si oui, depuis quand ?

Oui, depuis :  /  (mois / année)  
 Non

A9) Avant d'arrêter, aviez-vous un compte bancaire dédié à ce projet? Si oui, depuis quand ?

Oui, depuis :  /  (mois / année)  
 Non

B1) Ci-dessous sont citées des activités jalonnant souvent le processus de création d'une entreprise. A priori aucune de ces activités n'est plus importante qu'une autre. Le plus intéressant est savoir combien de temps et d'énergie votre équipe et vous aviez investi avant d'arrêter dans les activités suivantes pendant le lancement de votre projet ? [Choisissez entre les valeurs 1 et 7, celle qui correspond la mieux à votre cas. Le chiffre 4 au milieu de l'échelle de valeurs correspond à une situation neutre]

Nous n'avons pas investi une seule minute de notre temps et de notre énergie dans cette activité (cette activité n'était pas importante)	1	2	3	4	5	6	7	Nous avons investi la majeure partie de notre temps et de notre énergie dans cette activité
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Écrivez votre réponse dans cette rubrique (i.e. entre 1 et 7)

Emprunter le matériel de mes amis pour mon projet / affaire	
Parler de mon affaire comme si elle existait déjà	
Démontrer le potentiel de mon produit/service par tous les moyens possibles	
Créer un logo, du papier à entête, et des cartes de visite pour illustrer l'existence de mon affaire	
Discuter avec des clients potentiels	
Contacter des fournisseurs potentiels	
Passer par des amis et connaissance pour rencontrer des personnes importantes pour mon projet/affaire	
Trouver des partenaires pour la Recherche et le Développement du projet	
Trouver des partenaires technologiques	
Trouver des partenaires marketing	
Développer la technologie existante	
Acheter/louer des locaux	
Obtenir de l'équipement	
Finaliser un prototype de notre produit / service	
Réaliser une étude de marché	

B2) Quel est votre niveau d'étude :

Votre réponse :

- 1= BEP ou autre
- 2= Bac
- 3= Bac+2
- 4= Bac+3
- 5= Bac+4 (Maîtrise, Diplôme d'une grande école, etc.)
- 6= DESS, DEA
- 7= Doctorat, PhD

C1) Avant d'arrêter, comment voyiez vous les choses concernant **le secteur d'activité** de votre projet terminé ? (Choisissez entre les valeurs 1 et 7, celle qui correspond la mieux à la situation actuelle de votre projet. Le chiffre 4 situé au milieu de l'échelle de valeurs correspond à une situation neutre)

<i>Il y avait une grande diversité entre les entreprises en terme de qualité de produit, de service clientèles et d'approches marketing</i>	1	2	3	4	5	6	7	<i>Il n'y avait pas de diversité entre les entreprises en terme de qualité de produit, de service clientèles et d'approches marketing</i>
Votre réponse :								<input type="text"/>

<i>Il y avait une grande différence entre les produits et services que délivraient les sociétés du secteur</i>	1	2	3	4	5	6	7	<i>Il n'y avait pas de diversité entre les produits et services que délivraient les sociétés du secteur</i>
Votre réponse :								<input type="text"/>

<i>Il y avait un (ou deux ou trois) concurrent(s), confortablement installés depuis quelques années, qui contrôlai(en)t le marché</i>	1	2	3	4	5	6	7	<i>Notre entreprise était la première dans ce secteur, il n'y avait pas de concurrence</i>
Votre réponse :								<input type="text"/>

<i>L'activité de ce secteur était à ses débuts et à un stade de fort développement</i>	1	2	3	4	5	6	7	<i>L'activité de ce secteur était stable et en train de se réorienter vers de nouvelles opportunités</i>
Votre réponse :								<input type="text"/>

<i>Notre produit / service répondait à une demande alors inexploitée sur le marché</i>	1	2	3	4	5	6	7	<i>Notre produit / service répondait à une demande qui a toujours existé sur le marché</i>
Votre réponse :								<input type="text"/>

<i>L'environnement d'alors nous offrait suffisamment de moyens financiers, de capital humain et ressources nécessaires au développement de notre produit</i>	1	2	3	4	5	6	7	<i>L'environnement d'alors ne nous offrait pas de moyens financiers, de capital humains et ressources nécessaires au développement de notre produit</i>
Votre réponse :								<input type="text"/>

D1) Comment estimez-vous l'expérience sectorielle (expérience acquise dans le même domaine que celui de votre projet) que vous aviez avant de vous impliquer dans votre projet maintenant terminé?

<i>Je n'avais aucune expérience sectorielle avant de travailler au projet</i>	1	2	3	4	5	6	7	<i>J'avais acquis une expérience sectorielle très importante avant de travailler au projet</i>
Votre réponse :								<input type="text"/>

D2) Comment estimez-vous l'expérience entrepreneuriale (participation à des projets de création d'entreprise) que vous aviez avant de vous impliquer dans votre projet maintenant terminé?

<i>Je n'avais jamais été impliqué dans une création d'entreprise avant de travailler au projet</i>	1	2	3	4	5	6	7	<i>J'avais été impliqué dans plusieurs créations d'entreprise avant de travailler au projet</i>
Votre réponse :								<input type="text"/>



D3) Comment estimez-vous l'expérience managériale (expérience d'une fonction de dirigeant) que vous aviez avant de vous impliquer dans votre projet maintenant terminé ?

<i>Je n'avais aucune expérience managériale avant de travailler au projet</i>	1	2	3	4	5	6	7	<i>J'avais acquis une expérience managériale très importante avant de travailler au projet</i>
Votre réponse :								<input type="text"/>

E1) Avant d'arrêter, travailliez-vous seul(e) à la réalisation de votre projet?

Oui [Si « oui », allez directement à la question numéro F1]

Non

E2) L'équipe « start-up » est un groupe de personnes travaillant à un même projet. Dans votre cas, combien de personnes travaillaient avec vous à cette réalisation au moment de l'arrêt du projet?

Votre réponse :  personne(s) travaillaie(nt) avec moi

E3) Un ou plusieurs membres de l'équipe pouvaient avoir déjà assumé une fonction de dirigeant avant de travailler à votre projet. Comment estimez-vous l'expérience managériale de votre équipe au moment de l'arrêt du projet ?

<i>Aucun membre de l'équipe d'alors n'avait d'expérience managériale avant de travailler au projet</i>	1	2	3	4	5	6	7	<i>Chacun des membres de l'équipe d'alors avait une expérience managériale très importante acquise avant de travailler au projet</i>
Votre réponse :								<input type="text"/>

E4) Un ou plusieurs membres de l'équipe pouvai(en)t avoir travaillé à des projets de création d'entreprise auparavant. Comment estimez-vous l'expérience entrepreneuriale de votre équipe au moment de l'arrêt du projet?

<i>Aucun membre de l'équipe d'alors n'avait été impliqué dans une création d'entreprise avant de travailler au projet</i>	1	2	3	4	5	6	7	<i>Chacun des membres de l'équipe d'alors avait été impliqué dans une ou plusieurs créations d'entreprise avant de travailler au projet</i>
Votre réponse :								<input type="text"/>

E5) Certains membres de l'équipe peuvent avoir travaillé dans un domaine similaire à celui de votre projet. Comment estimez-vous l'expérience sectorielle de votre équipe au moment de l'arrêt du projet?

<i>Aucun membre de l'équipe actuelle n'avait d'expérience sectorielle avant de travailler au projet</i>	1	2	3	4	5	6	7	<i>Chacun des membres de l'équipe actuelle avait une expérience sectorielle très importante avant de travailler au projet</i>
Votre réponse :								<input type="text"/>

E6) Comment estimez-vous les compétences de votre équipe au moment de l'arrêt du projet ?

<i>Notre équipe d'alors ne possédait que quelques unes des compétences essentielles au succès du projet</i>	1	2	3	4	5	6	7	<i>Notre équipe d'alors possédait toutes les compétences essentielles au succès du projet</i>
Votre réponse :								<input type="text"/>

E7) Quel était le niveau d'étude le plus courant parmi les membres de votre équipe au moment de l'arrêt du projet?

1= BEP ou autre  
 Votre réponse :

- 2= Bac  
 3= Bac+2  
 4= Bac+3  
 5= Bac+4 (Maîtrise, Diplôme d'une grande école, etc.)  
 6= DESS, DEA  
 7= Doctorat, PhD

F1) L'idée de votre projet ou l'opportunité avait-elle beaucoup évoluée depuis le concours du Tremplin Entreprise ou était-elle restée identique à votre concept initial, au moment de l'arrêt du projet ?

<i>L'idée / opportunité était identique</i>	1	2	3	4	5	6	7	<i>L'idée / opportunité avait beaucoup changé</i>
Votre réponse :								<input type="checkbox"/>

F2) Le concept de votre produit/service avait-il évolué depuis le concours Tremplin Entreprises lorsque le projet fut arrêté?

<i>Le concept de notre produit / service était identique</i>	1	2	3	4	5	6	7	<i>Le concept de notre produit / service avait beaucoup changé</i>
Votre réponse :								<input type="checkbox"/>

F3) Vos marchés cibles avaient-ils changé depuis le concours Tremplin Entreprises lorsque le projet fut arrêté?

<i>Nos marchés cibles étaient identiques</i>	1	2	3	4	5	6	7	<i>Nos marchés cibles avaient beaucoup changé</i>
Votre réponse :								<input type="checkbox"/>

F4) Y avait il eu des changements dans votre équipe de « start-up » depuis le concours Tremplin Entreprises lorsque le projet fut arrêté?

<i>L'équipe était identique</i>	1	2	3	4	5	6	7	<i>L'équipe avait beaucoup changé</i>
Votre réponse :								<input type="checkbox"/>

G1) En règle générale, nous pensons tous un jour ou l'autre à la création d'une société avant d'agir. En ce qui vous concerne, quand (quel mois et quelle année) aviez vous commencé à réfléchir à votre projet ?

Votre réponse :  /  / année)

G2) Une étape importante de cette réflexion se caractérise par la première démarche de l'entrepreneur à travailler à cette idée de nouvelle entreprise. Ainsi, une personne peut faire une première étude de marché, elle peut écrire une première version de business plan, etc. Dans votre cas, quand (quel mois et quelle année) aviez vous fait cette première démarche de travailler à votre projet ?

Votre réponse :  /  (mois / année)

Quelle était cette démarche ?

G3) Quel était le principal de produit /service de votre activité?

Votre réponse :

H2) Décrivez-vous votre projet terminé comme étant [Choisissez une seule réponse] :

- une start-up indépendante (créée par une personne ou un groupe de personnes travaillant seul)
- une acquisition/une prise de contrôle d'une entité déjà existante?
- une start-up sponsorisée par une entreprise déjà existante ?
- autre, c'est-à-dire :

H3) Étiez-vous satisfait de l'avancement de ce projet de création d'entreprise au moment de son arrêt ?

<i>« Je n'étais pas du tout satisfait de l'avancement de ce projet »</i>	1	2	3	4	5	6	7	<i>« J'étais très satisfait de l'avancement de ce projet »</i>
Votre réponse :						<input type="checkbox"/>		

H1) Comment estimez-vous votre projet au point de vue technologique, avant son arrêt ? (Choisissez entre les valeurs 1 et 7, celle qui correspond la mieux à la situation actuelle de votre projet. Le chiffre 4 situé au milieu de l'échelle de valeurs correspond à une situation neutre)

<i>Des produits / services similaires étaient déjà disponibles sur le marché, au moins 5 ans auparavant</i>	1	2	3	4	5	6	7	<i>Aucun produit / service similaire n'était disponible sur le marché, au moins 5 ans auparavant</i>
Votre réponse :						<input type="checkbox"/>		

<i>L'activité de notre projet n'était pas du tout technologique</i>	1	2	3	4	5	6	7	<i>L'activité de notre projet était hautement technologique</i>
Votre réponse :						<input type="checkbox"/>		

<i>L'investissement en Recherche et Développement n'était pas du tout une priorité de notre projet</i>	1	2	3	4	5	6	7	<i>L'investissement en Recherche et Développement était une des priorités majeures de notre projet</i>
Votre réponse :						<input type="checkbox"/>		

H4) Comment évaluez-vous le déroulement du lancement de cette affaire désormais terminée ?

<i>Nous n'avons pas du tout passé de temps à démontrer la viabilité de ce projet à nos interlocuteurs extérieurs</i>	1	2	3	4	5	6	7	<i>Nous avons passé beaucoup de temps à démontrer la viabilité de ce projet à nos interlocuteurs extérieurs</i>
Votre réponse :						<input type="checkbox"/>		

<i>Nous n'avons pas du tout passé de temps à la recherche de partenaires stratégiques et à la signature de contrats de collaboration</i>	1	2	3	4	5	6	7	<i>Nous avons passé beaucoup de temps à la recherche de partenaires stratégiques et à la signature de contrats de collaboration</i>
Votre réponse :						<input type="checkbox"/>		

<i>Nous n'avons pas du tout passé de temps à trouver équipements, matériels, et locaux pour lancer l'affaire</i>	1	2	3	4	5	6	7	<i>Nous avons passé beaucoup de temps à la recherche d'équipements, de matériels, et de locaux nécessaires au lancement de</i>
Votre réponse :						<input type="checkbox"/>		

*l'affaire*

H5) Nom / Intitulé de votre Projet :

H6) Quelle était la situation géographique de votre projet (code postale) :

H7)) Votre nom :

H8) Votre âge :

H9) Votre genre:

- Femme  
 Homme

H10) Votre statut marital :

- Marié  
 Non marié

**MERCI BEAUCOUP !** Vos réponses sont celles dont j'avais besoin pour ma thèse. Je vous remercie pour votre coopération. Etes-vous intéressé par l'envoi du résumé de cette étude ?

- Non  
 Oui, par e-mail :  
ou par adresse postale :

*Si vous aviez-vous des remarques complémentaires à apporter concernant votre situation, la raison pour laquelle vous avez arrêté votre projet, le Tremplin Entreprises, ou bien cette étude, n'hésitez pas à utiliser l'espace libre ci-dessous.*

**APPENDIX 5.** The cover letter of an e-mail sent to respondents who indicated that their project was terminated and thus did not want to respond to the original questionnaire.

Monsieur X,

Je vous remercie d'avoir pris le temps de me répondre. Je suis désolé d'apprendre que vous ayez cessé votre projet; votre expérience n'en est moins importante et précieuse pour moi. En effet, ma thèse étudie justement les raisons pour lesquelles de nombreux projets de création d'entreprise n'aboutissent pas. Or, ce genre d'informations est extrêmement difficile à obtenir, car souvent douloureux. Aussi, aurais-je désespérément besoin de votre aide et expérience à ce sujet. Si vous acceptiez de participer à mon étude, je me ferais un réel plaisir de vous envoyer les résultats de celle-ci. Cela pourrait peut-être vous donner de nouvelles idées pour de futurs projets.

J'ai modifié mon précédent questionnaire de façon à mieux m'adapter à votre situation ; y répondre ne demande que 20 min de votre temps. Certes, 20 min peuvent paraître un long moment, mais sachez que la mise au point de ce questionnaire m'a pris une année. Votre contribution ferait vraiment la différence au niveau des résultats de cette étude.

Je vous remercie par avance pour votre temps et considération.

Cordialement,

Erno Tornikoski  
Etudiante Doctoral  
Groupe ESSEC

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*[Dear x,*

*Thank you for taking your time to reply me. I am sorry to hear that your project has been terminated. I am doing my dissertation in order to understand the reasons why some projects are terminated early in the process. Therefore, information from your terminated project would be most valuable to me, much more valuable than information from successful projects. So, I am almost desperately needing to hear your experiences. If you are willing to participate, I will send you the resume of the study, which may give you new ideas for your future projects.*

*I modified the earlier questionnaire to better fit in your situation. It only takes about 20 minutes to fill it in. This may sound like a long time, but for me it took 1 year to design the questionnaire. Your contribution would make a difference to me and this study.*

*Regards,*

*Erno Tornikoski  
Doctoral Student  
Groupe ESSEC]*

## APPENDIX 6. The questionnaire items and their use in the statistical analysis.

Question number in the questionnaire	Total number of items included in the question	The use of the question in the study
D1	1	Nascent Entrepreneur measure: Industry experience
D2	1	Nascent Entrepreneur measure: Start-up experience
D3	1	Nascent Entrepreneur measure: Managerial experience
B2	1	Nascent Entrepreneur measure: Formal education
H8	1	Nascent Entrepreneur measure: Age of the respondent
E1	1	Founding Team measure: Presence of the team
E2	1	Founding Team measure: Number of team members
E3	1	Founding Team measure: Collective managerial experience
E4	1	Founding Team measure: Collective start-up experience
E5	1	Founding Team measure: Collective industry experience
E6	1	Founding Team measure: Completeness of the team
E7	1	Founding Team measure: Collective formal knowledge
C1	6	Measure of Market Conditions
B1	15	Measures of the three Legitimizing behaviors
A7	1	Dependent variable measure: Registration (boundary)
A8	1	Dependent variable measure: Telephone line (boundary)
A9	1	Dependent variable measure: Bank account (boundary)
A2	1	Dependent variable measure: Personal investment of time (resources)
A3	1	Dependent variable measure: Hiring (resources)
A5	1	Dependent variable measure: Personal investment of money (resources)
A4	1	Dependent variable measure: outside financing (exchange)
A6	1	Dependent variable measure: First sales (exchange)
A1	1	Dependent variable measure: Current status of the project
H1	3	Control variable: Tecnological sophistication
G1	1	To reform the sample: When started to think about the business
G2	1	To reform the sample: When took first time action for the project
G3	1	Descriptives: product vs. service orientation
H6	1	Descriptives: Geographical location
H9	1	Descriptives: Gender
H10	1	Descriptives: Marital status
H2	1	Descriptives: Independent vs. corporate start-up
H5	1	To identify the respondents for follow-up calls: Name of the pre-organization
H7	1	To identify the respondents for follow-up calls: Name of the respondent
H4	3	Extra: Alternative measures for legitimating behaviors (single item for each construct)
H3	1	Extra: Satisfaction of the respondents
F1	1	Extra: How much has the project changed since the business plan competition
F2	1	Extra: How much has the initial product / service idea changed since the business plan competition
F4	1	Extra: How much has the founding team changed since the business plan competition
F3	1	Extra: How much has the target market changed since the business plan competition

## APPENDIX 7. Tables related to estimation of respondent error.

Table 1. Industrial sector.

Industrial sector	Research sample		Non-respondents		TOTAL (Tremplin population)	
ICT	56%	36	61%	110	60%	146
Industry	15%	10	11%	20	12%	30
Commerce/distribution	9%	6	11%	19	10%	25
Life-science	14%	9	8%	14	9%	23
Services non-internet	6%	4	9%	17	9%	21
<b>TOTAL</b>	<b>100%</b>	<b>65</b>	<b>100%</b>	<b>179</b>	<b>100%</b>	<b>244</b>

$\chi^2 = 3.53 / df = 4 / 0$  expected frequencies less than 5 / Prob. ( $\chi^2 > 3.53$ ) = 0.473 / Test-value = -0.07

Table 2. Product vs. service emphasis.

Emphasis	Research sample		Non-respondents		TOTAL (Tremplin population)	
Product	54%	35	43%	77	46%	112
Service	46%	30	57%	103	54%	133
<b>TOTAL</b>	<b>100%</b>	<b>65</b>	<b>100%</b>	<b>180</b>	<b>100%</b>	<b>245</b>

$\chi^2 = 1.93 / df = 1 / 0$  expected frequencies less than 5 / Prob. ( $\chi^2 > 1.93$ ) = 0.164 / Test-value = 0.98

Table 3. Gender of the nascent entrepreneur.

Gender	Research sample		Non-respondents		TOTAL (Tremplin population)	
Female	9%	6	8%	15	9%	21
Male	91%	59	92%	164	91%	217
<b>TOTAL</b>	<b>100%</b>	<b>65</b>	<b>100%</b>	<b>173</b>	<b>100%</b>	<b>238</b>

$\chi^2 = 0.00 / df = 1 / 0$  expected frequencies less than 5 / Prob. ( $\chi^2 > 0.00$ ) = 0.961 / Test-value = -1.76

**Table 4.** Geographical location.

Geographic location	Research sample	Non-respondents	TOTAL (Tremplin population)
In Paris region	48% 31	52% 87	51% 118
Outside Paris region	52% 33	48% 79	49% 112
TOTAL	100% 64	100% 166	100% 230

$\chi^2 = 0.15 / df = 1 / 0$  expected frequencies less than 5 / Prob. ( $\chi^2 > 0.15$ ) = 0.694 / Test-value = -0.51

**Table 5.** Laureates of business plan competition.

Laurat of Tremplin	Research sample	Non-respondents	TOTAL (Tremplin population)
Laureat	18% 12	13% 23	14% 35
Not a laureat	82% 53	89% 160	86% 215
TOTAL	100% 65	100% 180	100% 245

$\chi^2 = 0.84 / df = 1 / 0$  expected frequencies less than 5 / Prob. ( $\chi^2 > 0.84$ ) = 0.360 / Test-value = 0.36

**Table 6.** Starting mode.

	Research sample	Non-respondents	TOTAL (Tremplin population)
Solo	19 39% 29%	30 61% 17%	49 100% 20%
Team	46 23% 71%	150 77% 83%	196 100% 80%
TOTAL	65 27% 100%	180 73% 100%	245 100% 100%

$\chi^2 = 3.96 / df = 1 / 0$  expected frequencies less than 5 / Prob. ( $\chi^2 > 3.96$ ) = 0.047 / Test-value = 1.68

**Table 7.** Age of the nascent entrepreneurs.

Variable	Research sample	Non respondents	Student's t-test	Significance level
Age	39.9 (10.612)	38.8 (9.173)	.827	.409



**APPENDIX 8.** Tables related to characteristics of the nascent entrepreneurs (i.e. respondents).

**Table 1.** Age of the nascent entrepreneurs.

Sector	Gender	Female	Male	TOTAL
ICT		43.0	37.6	38.2
	(11.38)	(9.56)	(9.93)	
		4	32	36
Life-science		57.0	42.3	43.9
	(0.00)	(10.86)	(11.24)	
		1	8	9
Industry		-	42.3	42.3
	(0.00)	(11.15)	(11.15)	
		0	10	10
Commerce/Distribution		-	38.2	38.2
	(0.00)	(10.06)	(10.06)	
		0	6	6
Service non-internet		47.0	42.3	43.5
	(0.00)	(11.47)	(10.14)	
		1	3	4
TOTAL		46.0	39.3	39.9
	(10.61)	(10.42)	(10.61)	
		6	59	65

**Table 2.** Marital status of nascent entrepreneurs.

Marital status	Gender	Females	Male	TOTAL
Married		2	22	34
	8%	40%	92%	100%
			37%	38%
Not married		3	37	40
	7.5%	60%	92.5%	100%
			63%	63%
TOTAL		5	59	64
	8%	100%	92%	100%
			100%	100%

$\chi^2 = 0.13 / df = 1 / 2$  expected frequencies less than 5 / Prob. ( $\chi^2 > 0.13$ ) = 0.718 / Test-value = -0.58

**Table 3.** Educational level of nascent entrepreneurs.

<b>Educational level</b>	<b>%</b>	<b>n</b>
<b>BEP</b>	3%	2
<b>Baccalaureat</b>	3%	2
<b>Baccalaureat + 2</b>	3%	2
<b>Baccalaureat + 3</b>	10%	6
<b>Baccalaureat + 4</b>	34%	22
<b>DESS / DEA</b>	28%	18
<b>Doctorat</b>	19%	12
<b>TOTAL</b>	100%	64

**APPENDIX 9.** Statistics related to five new organization markers.

**Table 1.** New organizational markers and number of new organizations.

New organizational marker	Share of pre-organizations	
Identification boundary (opened bank account or phone line)	77%	50
Identity boundary (registered as a business)	63%	41
Manpower resources (has devoted himself/herself fulltime or recruited someone)	94%	61
Financial resources (invested own money or acquired external financing)	92%	60
Exchange (made sales)	38%	25
Number of new organizations (all five new organization markers met)	32%	21

**Table 2.** Identification boundary.

	Yes telephone line	No telephone line	TOTAL
<b>Yes bank account</b>	34	9	43
	79%	21%	100%
<b>No bank account</b>	7	15	22
	32%	68%	100%
<b>TOTAL</b>	41	24	65
	63%	37%	100%
		100%	100%

Khi<sup>2</sup> = 12.00 / 1 degrees of freedom / 0 expected frequencies less than 5  
 Prob. (Khi<sup>2</sup> > 12.00) = 0.001 / Test-value = 3.27

**Table 3.** Exchange.

	Effective	%
Yes first sales	25	38.46%
No yet first sales	8	12.31%
No sales, prod ready	32	49.23%
<b>TOTAL</b>	65	100%

Table 4. Manpower resources.

	Yes hired	Not yet hired	No need to hire	TOTAL
Yes full time	15	21	6	42
	36%	50%	14%	100%
		100	75%	65%
Not yet full time	0	4	11	15
	0%	27%	73%	100%
		0	14%	23%
No need full time	0	3	5	8
	0%	37.5%	62.5%	100%
		0	11%	23%
TOTAL	15	28	22	65
	23%	43%	34%	100%
		100%	100%	100%

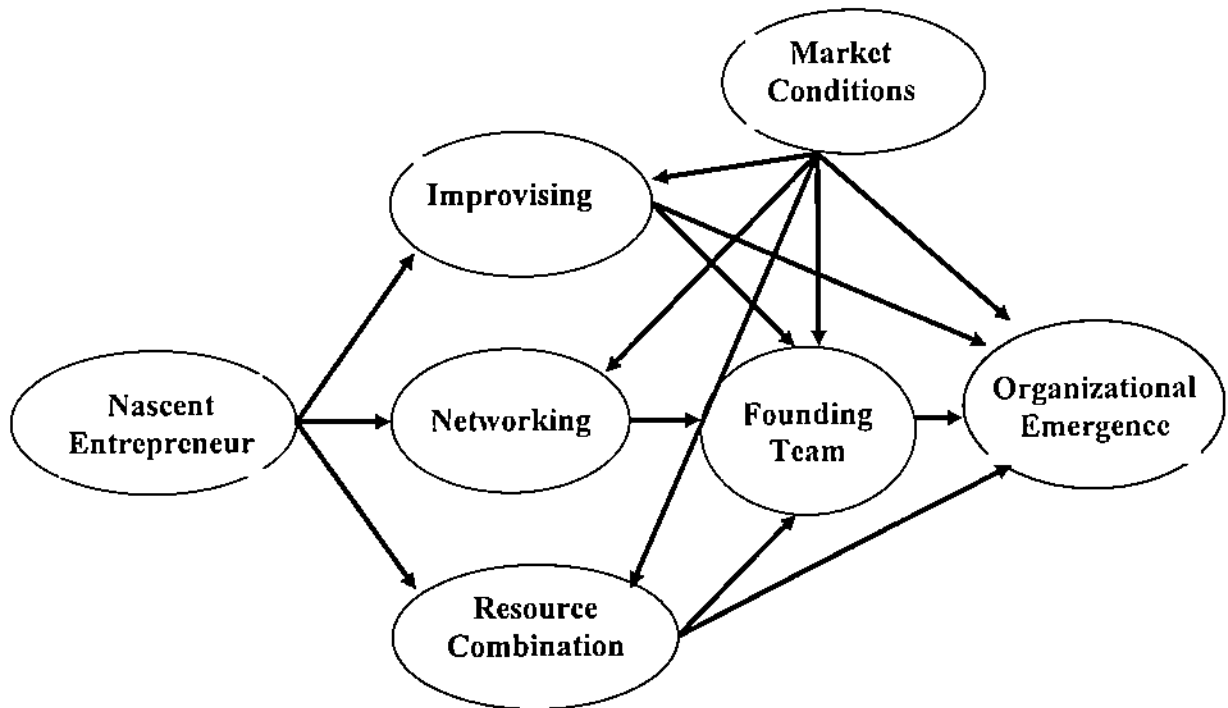
$Khi^2 = 23.28 / 4$  degrees of freedom / 4 expected frequencies less than 5  
 Prob. ( $Khi^2 > 23.28$ ) = 0.000 / Test-value = 3.69

Table 5. Financial resources.

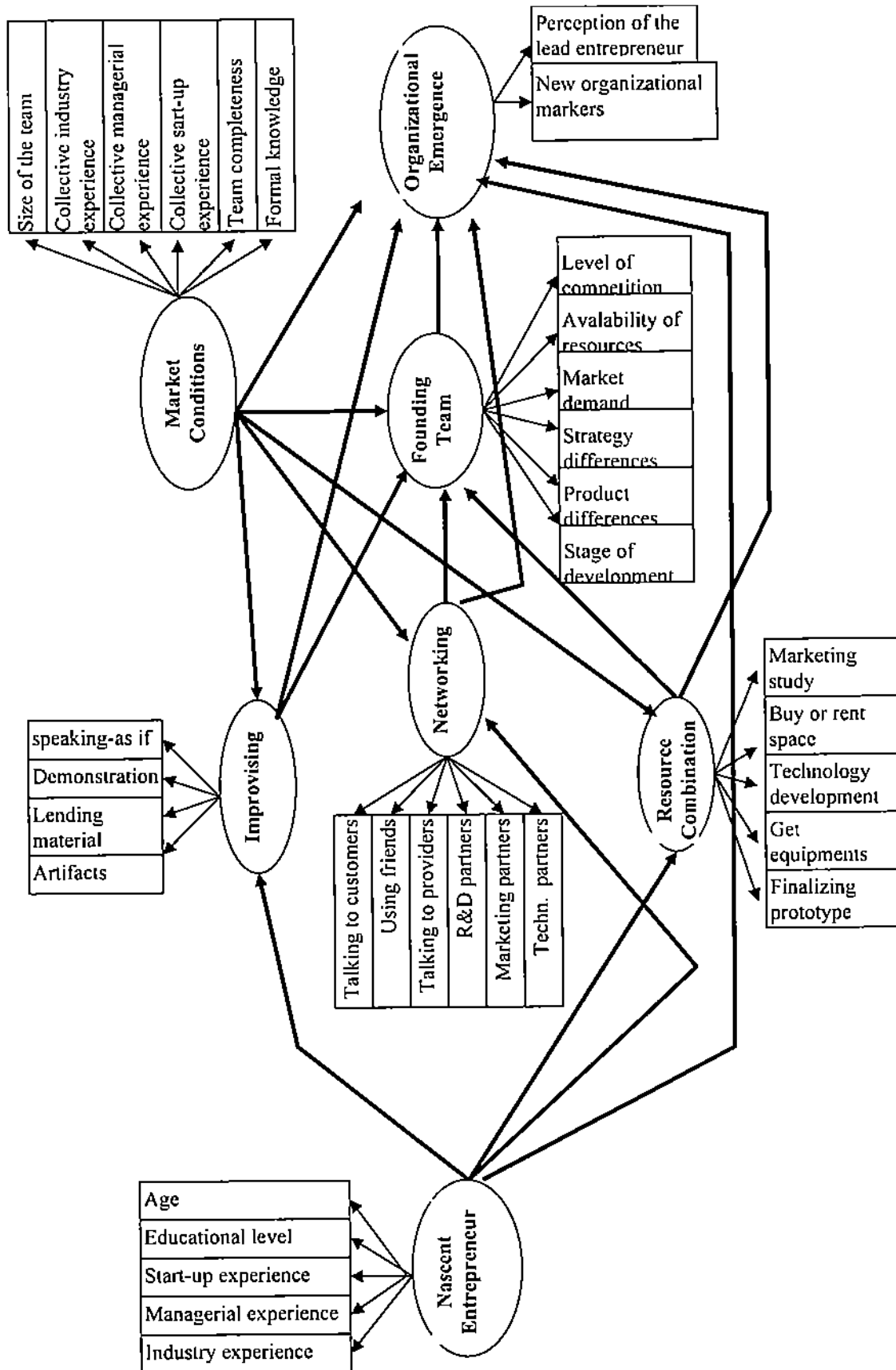
	Yes invested in	Not yet invested in	No need to invest in	TOTAL
Yes external financing	26	0	0	26
	100%	0%	0%	100%
		45	0	41
No external financing	28	4	1	33
	85%	12%	3%	100%
		48	80	100
No need for external financing	4	1	0	5
	80%	20%	0%	100%
		7	20	0
TOTAL	58	5	1	64
	90.5%	8%	1.5%	100.00
		100	100	100

$Khi^2 = 5.14 / 4$  Degrees of freedom / 7 expected frequencies less than 5  
 Prob. ( $Khi^2 > 5.14$ ) = 0.273 / Test-value = 0.60

APPENDIX 10. The inner model (i.e. structural model) of the research model.



APPENDIX 11. The measurement model (i.e. outer model) and the structural model (i.e. inner model) of Organizational emergence.



## APPENDIX 12. The normalization formulas of manifest variables.

Manifest variable	Code	Original scale in the questionnaire	Formula for normalization
New organization markers	OE2	0 to 5	$X * (100/5)$
Perception	Alp	1 to 4	$(X-1) * (100/3)$
Age of respondent	H8	24 to 64	$(X-24) * (100/40)$
Educational level	B2	1 to 7	$(X-1) * (100/6)$
Personal industry experience	D1	1 to 7	$(X-1) * (100/6)$
Personal start-up experience	D2	1 to 7	$(X-1) * (100/6)$
Personal managerial experience	D3	1 to 7	$(X-1) * (100/6)$
Differences in strategies	C1a	1 to 7	$(X-1) * (100/6)$
Difference between products	C1b	1 to 7	$(X-1) * (100/6)$
Level of competition	C1c	1 to 7	$(X-1) * (100/6)$
Stage of development of industry	C1d	1 to 7	$(X-1) * (100/6)$
Newness of demand	C1e	1 to 7	$(X-1) * (100/6)$
Environmental munificence	C1f	1 to 7	$(X-1) * (100/6)$
Loaned materiel	B1a	1 to 7	$(X-1) * (100/6)$
To speak-as-if	B1b	1 to 7	$(X-1) * (100/6)$
To illustrate the potential	B1c	1 to 7	$(X-1) * (100/6)$
Create artifacts	B1d	1 to 7	$(X-1) * (100/6)$
To discuss with potential clients	B1e	1 to 7	$(X-1) * (100/6)$
To contact potential suppliers	B1f	1 to 7	$(X-1) * (100/6)$
To use friends for access to info	B1g	1 to 7	$(X-1) * (100/6)$
To find R&D partners	B1h	1 to 7	$(X-1) * (100/6)$
To find technology partners	B1i	1 to 7	$(X-1) * (100/6)$
To find marketing partners	B1j	1 to 7	$(X-1) * (100/6)$
To develop existing technology	B1k	1 to 7	$(X-1) * (100/6)$
To buy or rent space	B1l	1 to 7	$(X-1) * (100/6)$
To get equipments	B1m	1 to 7	$(X-1) * (100/6)$
To finalize the prototype	B1n	1 to 7	$(X-1) * (100/6)$
To do marketing study	B1o	1 to 7	$(X-1) * (100/6)$
Number of persons in team	E2	0 to 15	$X * (100/15)$
Collective managerial experience	E3	0 to 7	$X * (100/7)$
Collective start-up experience	E4	0 to 7	$X * (100/7)$
Collective industry experience	E5	0 to 7	$X * (100/7)$
Team complementarity	E6	0 to 7	$X * (100/7)$
Collective educational level	E7	0 to 7	$X * (100/7)$
Level of product innovation	H1a	1 to 7	$(X-1) * (100/6)$
Perception about high-tech status	H1b	1 to 7	$(X-1) * (100/6)$
R&D emphasis	H1c	1 to 7	$(X-1) * (100/6)$

**APPENDIX 13.** The means, standard deviation, and extremes values of the manifest variables.

Manifest variable	Code	Mean	Standard-deviation	Minimum	Maximum
Educational level	B2	5.2923	1.3892	1.0000	7.0000
Personal industry experience	D1	4.5938	2.2757	1.0000	7.0000
Personal start-up experience	D2	3.6923	2.3200	1.0000	7.0000
Personal managerial experience	D3	4.4462	2.0459	1.0000	7.0000
Age of respondent	H8	39.939	10.612	24.000	64.000
Differences in strategies (reversed)	C1a	4.0000	2.1697	1.0000	7.0000
Difference in products (reversed)	C1b	4.3077	2.1190	1.0000	7.0000
Level of competition	C1c	4.4769	1.9542	1.0000	7.0000
Stage of devel. of industry (reversed)	C1d	4.8906	2.1369	1.0000	7.0000
Newness of demand (reversed)	C1e	5.2344	1.9100	1.0000	7.0000
Munificence (reversed)	C1f	3.5385	2.0387	1.0000	7.0000
Loaned material	B1a	1.6774	1.2798	1.0000	6.0000
To speak as if	B1b	4.5313	1.9998	1.0000	7.0000
To illustrate the potential	B1c	6.0000	1.2890	2.0000	7.0000
To create artifacts	B1d	4.3231	1.9931	1.0000	7.0000
To discuss with pot clients	B1e	5.5077	1.5799	1.0000	7.0000
To contact potent suppliers	B1f	4.0625	1.9516	1.0000	7.0000
To use friends for access to info	B1g	4.3692	1.8693	1.0000	7.0000
To find R&D partners	B1h	4.7692	2.0664	1.0000	7.0000
To find technology partners	B1i	4.1385	1.9444	1.0000	7.0000
To find marketing partners	B1j	3.2923	1.8036	1.0000	7.0000
To develop existing technology	B1k	5.1846	1.9207	1.0000	7.0000
To buy or rent space	B1l	2.3692	1.7765	1.0000	7.0000
To get equipments	B1m	2.6615	1.7998	1.0000	7.0000
To finalize the prototype	B1n	5.7692	1.5369	1.0000	7.0000
To do marketing study	B1o	4.9077	1.8121	1.0000	7.0000
Number of persons in the team	E2	2.5231	2.8222	0.0000	15.0000
Collective managerial experience	E3	2.6923	2.2252	0.0000	6.0000
Collective start-up experience	E4	2.3077	2.0749	0.0000	7.0000
Collective industry experience	E5	3.2154	2.5084	0.0000	7.0000
Team complementarity	E6	3.8154	2.4862	0.0000	7.0000
Collective educational level	E7	4.0462	2.5385	0.0000	7.0000
Level of product innovation	H1a	6.0923	1.3442	1.0000	7.0000
Level of innovativeness	H1b	5.4154	1.6257	1.0000	7.0000
R&D emphasis	H1c	5.3846	1.8538	1.0000	7.0000
Perception about high-tech status	A1p	3.0000	1.0670	1.0000	4.0000
New organizational markers	OE2	3.6462	1.2822	0.0000	5.0000



**APPENDIX 14.** Mean, standard deviation (SD), and extreme values of normalized manifest variables.

Manifest variables	Code	Mean	SD	Minimum	Maximum
Educational level	B2	71.5385	23.1537	0.0000	100.0000
Industry experience	D1	59.8958	37.9280	0.0000	100.0000
Start-up experience	D2	44.8718	38.6661	0.0000	100.0000
Managerial experience	D3	57.4359	34.0977	0.0000	100.0000
Age of respondents	H8	39.8462	26.5297	0.0000	100.0000
Differences in strategies	C1a	50.0000	36.1620	0.0000	100.0000
Differences in products	C1b	55.1282	35.3158	0.0000	100.0000
Level of competition	C1c	57.9487	32.5691	0.0000	100.0000
Stage of development of industry	C1d	64.8437	35.6143	0.0000	100.0000
Newness of demand	C1e	70.5729	31.8337	0.0000	100.0000
Munificence	C1f	42.3077	33.9780	0.0000	100.0000
Loaned material	B1a	11.2903	21.3299	0.0000	83.3333
To speak-as-if	B1b	58.8542	33.3293	0.0000	100.0000
Illustrate the potential	B1c	83.3333	21.4834	16.6667	100.0000
Create artifacts	B1d	55.3846	33.2187	0.0000	100.0000
Discuss potential clients	B1e	75.1282	26.3317	0.0000	100.0000
To contact potential suppliers	B1f	51.0417	32.5260	0.0000	100.0000
Use friends for info	B1g	56.1538	31.1557	0.0000	100.0000
Find R&D partners	B1h	62.8205	34.4392	0.0000	100.0000
Find technology partners	B1i	52.3077	32.4072	0.0000	100.0000
Find marketing partners	B1j	38.2051	30.0602	0.0000	100.0000
Develop technology	B1k	69.7436	32.0113	0.0000	100.0000
Buy or rent space	B1l	22.8205	29.6084	0.0000	100.0000
Get equipments	B1m	27.6923	29.9967	0.0000	100.0000
Finalize prototype	B1n	79.4872	25.6154	0.0000	100.0000
Do marketing study	B1o	65.1282	30.2020	0.0000	100.0000
Team size	E2	16.8205	18.8147	0.0000	100.0000
Collective managerial experience	E3	38.4615	31.7885	0.0000	85.7143
Collective start-up experience	E4	32.9670	29.6418	0.0000	100.0000
Collective industry experience	E5	45.9341	35.8343	0.0000	100.0000
Team complementarity	E6	54.5055	35.5175	0.0000	100.0000
Collective educational level	E7	57.8022	36.2644	0.0000	100.0000
Level of product innovation	H1a	84.8718	22.4033	0.0000	100.0000
Perception about high tech status	H1b	73.5897	27.0947	0.0000	100.0000
R&D empahsis	H1c	73.0769	30.8972	0.0000	100.0000
New Organization markers	OE2	71.6923	26.9226	0.0000	100.0000
Perception of nascent entrepreneur	A1p	66.6667	35.5662	0.0000	100.0000

## APPENDIX 15. Summary of used measures.

CONSTRUCT	MANIFEST VARIABLE(S)	QUESTIONS	NATURE
Organizational Emergence	New organization markers	Have you incorporated the project? Do you have a separate phone line? Do you have a bank account for the business? Are you working full time for the project? Have you recruited full time or part time employees? Have you invested your own money? Have you acquired external financing? Have you made the first sale of your main product?	Nominal (Yes / No / No need)
	Perception of nascent entrepreneur	What is the current situation of your project?	Nominal (four categories)
Nascent Entrepreneur	1) Managerial experience 2) Start-up experience 3) Industry experience 4) Level of education 5) Age	1) How would you estimate your managerial experience before you started your project? 2) How would you estimate your entrepreneurial experience before starting the current project? 3) How would you estimate your experience in the same sector as the current project? 4) What is your level of education? 5) What is your age?	Ordinal (7 point Likert-scale) + ratio for age
Founding Team	1) Collective managerial experience 2) Collective Start-up experience 3) Collective industry experience 4) Team completeness 5) Collective educational level 6) Number of team members	1) How would you estimate the collective managerial experience of your current team? 2) How would you estimate the collective entrepreneurial experience of your current team? 3) How would you estimate the collective industry experience of your team? 4) How would you estimate the competencies of your team? 5) What is the most current highest educational level among your team members? 6) Organizing team is a group of people working for the same purpose. In your project, how many individuals are working with you to realize the project	Ordinal (7 point Likert-scale) + Ratio for the number of team members
Market Conditions	1) Level of competition; 2) Stage of development of industry; 3) Strategical differences; 4) Product differences 5) Availability of resources 6) Market demand	1) There are several major competitors that have been well established for years 2) The industry is in early, high-growth stage of development 3) There is much diversity between firms in terms of product quality, customer service, and marketing approaches 4) There are few differences between the products/services provided by various firms 5) The environment offers us enough financial, human, and other resources 6) There is substantial untapped market demand for our product	Ordinal (7 point Likert-scale)

<b>Improvising</b>	<ol style="list-style-type: none"> <li>1) Lending material</li> <li>2) Creating artifacts</li> <li>3) Speaking about the business</li> <li>4) Demonstrating the viability</li> </ol>	<ol style="list-style-type: none"> <li>1) Lending material from friends for the business</li> <li>2) Create business logos, business cards, and company letters to given an impression of an existing company</li> <li>3) Speak like to business was real</li> <li>Demonstrate the viability of the project with all possible means</li> </ol>	Ordinal (7 point Likert-scale)
<b>Networking</b>	<ol style="list-style-type: none"> <li>1) Talk to customers;</li> <li>2) Contact suppliers;</li> <li>3) Use friends to get an access to important people</li> <li>4) Find technological partners;</li> <li>5) Find marketing partners;</li> <li>6) Find R&amp;D partners</li> </ol>	<ol style="list-style-type: none"> <li>1) Talking to potential customers</li> <li>2) Contacting potential suppliers</li> <li>3) Using friends &amp; acquaintances to get an access to important people</li> <li>4) Finding technological partners</li> <li>5) Finding marketing partners</li> <li>6) Finding R&amp;D partners</li> </ol>	Ordinal (7 point Likert-scale)
<b>Resource Combination</b>	<ol style="list-style-type: none"> <li>1) Technology development;</li> <li>2) Acquiring facilities;</li> <li>3) Obtaining equipments;</li> <li>4) Finalizing the prototype;</li> <li>5) Making marketing study</li> </ol>	<ol style="list-style-type: none"> <li>1) Developing the technology</li> <li>2) Buying / leasing facilities</li> <li>3) Obtaining equipment</li> <li>4) Finalizing the prototype of our product / service</li> <li>5) Making a marketing study</li> </ol>	Ordinal (7 point Likert-scale)
<b>Technological Sophistication</b>	<ol style="list-style-type: none"> <li>1) Availability of products</li> <li>2) High-tech vs. low tech</li> <li>3) R&amp;D spending</li> </ol>	<ol style="list-style-type: none"> <li>1) Were the products and services to be provided by your new business available in the market place 5 years ago?</li> <li>2) Would you consider this new business to be a high-tech?</li> <li>3) Will spending money on research and development be a major priority for this new business?</li> </ol>	Ordinal (7 point Likert-scale)
<b>Descriptives</b>	<ol style="list-style-type: none"> <li>1) Marital status</li> <li>2) Geographic location</li> <li>3) Gender</li> <li>4) Age</li> </ol>	<ol style="list-style-type: none"> <li>1) What is your marital status?</li> <li>2) What is the postal code of your business?</li> <li>3) What is your gender?</li> <li>4) What is your age?</li> </ol>	Nominal + ratio for age

**APPENDIX 16.** Tables related to the comparisons of pre-organizations and new organizations: Chi Square –test.

**Table 1.** Starting mode.

	New organization		Pre-organization		TOTAL
<b>Solo-entrepreneur</b>	5		13		18
	28%		72%		100%
		24%		30%	28%
<b>Team-entrepreneur</b>	16		31		47
	34%		66%		100%
		76%		70%	72%
<b>TOTAL</b>	21		44		65
	32%		68%		100%
		100%		100%	100%

$\chi^2 = 0.03 / df = 1 / 0$  expected frequencies less than 5 / Prob. ( $\chi^2 > 0.03$ ) = 0.852 / Test-value = 1.04

**Table 2.** Geographical location.

	New organization		Pre-organization		TOTAL
<b>From Paris region</b>	12		9		21
	40%		60%		100%
		57%		43%	48%
<b>Outside Paris</b>	9		24		33
	27%		73%		100%
		43%		57%	52%
<b>TOTAL</b>	21		42		63
	33%		67%		100%
		100%		100%	100%

$\chi^2 = 0.64 / df = 1 / 0$  expected frequencies less than 5 / Prob. ( $\chi^2 > 0.64$ ) = 0.422 / Test-value = 0.20

**Table 3.** Gender of the nascent entrepreneur.

	New organization		Pre-organization		TOTAL
<b>Female</b>	3		3		6
	50%		50%		100%
		14%		7%	9%
<b>Male</b>	18		41		59
	31%		69%		100%
		86%		93%	91%
<b>TOTAL</b>	21		44		65
	32%		68%		100%
		100%		100%	100%

$\chi^2 = 0.26 / df = 1 / 2$  expected frequencies less than 5 / Prob. ( $\chi^2 > 0.26$ ) = 0.607 / Test-value = -0.27

Table 4. Perception vs. emergence.

	New organization		Pre-organization		TOTAL
<b>Active and running</b>	<b>18</b>	<b>10</b>	<b>28</b>		
	64%	36%	100%		
		85.7%	22.7%		43%
<b>Still working on</b>	<b>1</b>	<b>17</b>	<b>18</b>		
	6%	94%	100%		
		4.8%	38.6%		28%
<b>Terminated</b>	<b>2</b>	<b>7</b>	<b>9</b>		
	22%	78%	100%		
		9.5%	16%		14%
<b>Stand-by</b>	<b>0</b>	<b>10</b>	<b>10</b>		
	0%	100%	100%		
		0%	22.7%		15%
<b>TOTAL</b>	<b>21</b>	<b>44</b>	<b>65</b>		
	32	68%	100%		
		100%	100%		100%

$\chi^2 = 24.17 / df = 3 / 2$  expected frequencies less 5 / Prob. ( $\chi^2 > 24.17$ ) = 0.000 / Test-value = 4.08

Table 5. Sector of activity.

	New organization		Pre-organization		TOTAL
<b>ICT</b>	<b>12</b>	<b>24</b>	<b>36</b>		
	33%	67%	100%		
		57%	55%		55%
<b>Life-science</b>	<b>2</b>	<b>7</b>	<b>9</b>		
	22%	78%	100%		
		10%	16%		14%
<b>Industry</b>	<b>4</b>	<b>6</b>	<b>10</b>		
	40%	60%	100%		
		19%	14%		15%
<b>Commerce/distribution</b>	<b>0</b>	<b>5</b>	<b>5</b>		
	0%	100%	100%		
		0%	11%		8%
<b>Service-non internet</b>	<b>3</b>	<b>2</b>	<b>5</b>		
	60%	40%	100%		
		14%	5%		8%
<b>TOTAL</b>	<b>21</b>	<b>44</b>	<b>65</b>		
	32%	68%	100%		
		100%	100%		100%

$\chi^2 = 4.85 / df = 4 / 6$  expected frequencies less than 5 / Prob. ( $\chi^2 > 4.85$ ) = 0.303 / Test-value = 0.51

**Table 6.** Laureate of Tremplin enterprises business plan competition.

	New organization		Pre-organization		TOTAL
<b>Laureat</b>	3		3		6
	50%		50%		100%
		14%		7%	9%
<b>Not laureate</b>	18		41		59
	31%		69%		100%
		86%		93%	91%
<b>TOTAL</b>	21		44		65
	32%		68%		100%
		100%		100%	100%

$\chi^2 = 0.26$  / df = 1 / 2 expected frequencies less than 5 / Prob. ( $\chi^2 > 0.26$ ) = 0.607 / Test-Value = -0.27

## APPENDIX 17. Student's t-test for all manifest variables (standard deviation in parenthesis).

Manifest variable	New organization	Pre-organization	Student's t-test	Significance
Loaned material	1.571 (1.094)	1.732 (1.315)	0.477	.635
To speak-as-if	4.900 (2.021)	4.364 (1.943)	1.011	.316
To illustrate the potential	5.952 (1.396)	6.023 (1.234)	0.203	.840
To create artifacts	4.857 (1.884)	4.068 (1.993)	1.495	.140
To discuss with potential clients	5.857 (1.320)	5.342 (1.664)	1.227	.224
To discuss with potential suppliers	4.238 (1.770)	3.977 (2.006)	0.502	.617
To use friends for access to info	4.000 (1.902)	4.545 (1.827)	1.093	.278
To find R&D partners	4.238 (2.136)	5.023 (1.983)	1.432	.157
To find technology partners	3.381 (1.987)	4.500 (1.815)	2.218	.030
To find marketing partners	3.333 (1.782)	3.273 (1.814)	0.125	.901
To develop existing technology	4.857 (1.910)	5.341 (1.906)	0.941	.350
To buy or rent space	3.048 (2.035)	2.045 (1.537)	2.171	.034
To get equipments	3.143 (2.054)	2.432 (1.615)	1.492	.141
To finalize the prototype	6.238 (1.411)	5.545 (1.544)	1.711	.092
To do marketing study	4.476 (1.763)	5.114 (1.799)	1.324	.190
Differences in Strategies	4.857 (2.054)	3.591 (2.103)	2.252	.028
Difference in products	5.286 (1.608)	3.841 (2.174)	2.670	.010
Level of competition	4.286 (1.931)	4.568 (1.959)	0.538	.593
Stage of development of industry	6.048 (1.133)	4.326 (2.253)	3.257	.002
Newness of demand	5.238 (1.630)	5.233 (2.009)	0.011	.991
Resource scarcity	3.333 (1.808)	3.636 (2.133)	0.553	.582
Age	37.5 (7.055)	41.1 (11.761)	1.289	.202
Educational level	5.476 (1.295)	5.205 (1.424)	0.729	.469
Personal industry experience	4.571 (2.301)	4.605 (2.237)	0.055	.957
Personal start-up experience	3.048 (2.380)	4.000 (2.226)	1.553	.126
Personal managerial experience	4.095 (2.045)	4.614 (2.025)	0.947	.347
Number of persons in the team	3.310 (3.705)	2.148 (2.186)	1.557	.124
Collective managerial experience	2.429 (2.014)	2.818 (2.309)	0.652	.517
Collective start-up experience	1.905 (1.797)	2.500 (2.169)	1.075	.287
Collective industry experience	3.714 (2.529)	2.977 (2.463)	1.101	.275
Team complementarity	4.048 (2.420)	3.705 (2.510)	0.513	.610
Collective educational level	4.000 (2.390)	4.068 (2.606)	0.100	.921
Level of product innovation	5.619 (1.647)	6.318 (1.103)	1.990	.051
Perception about high-tech status	5.429 (1.841)	5.409 (1.512)	0.044	.965
R&D emphasis	5.190 (1.893)	5.477 (1.828)	0.576	.567

**APPENDIX 18.** Outer weights and correlations between manifest variables and constructs in the research model (for the estimation of individual item reliability of the constructs).

<b>Block</b>	<b>Outer weight w</b>	<b>Correlation with construct</b>
<b>Organizational Emergence</b>		
- New organization markers	0.57	0.89
- Perception of nascent entrepreneur	0.55	0.88
<b>Nascent Entrepreneur</b>		
- Start-up experience	0.40	0.79
- Managerial experience	0.44	0.88
- Age of nascent entrepreneur	0.42	0.71
<b>Market Conditions</b>		
- Differences in strategies	0.40	0.89
- Difference in products	0.44	0.89
- Stage of development of industry	0.36	0.73
<b>Improvising</b>		
- To speak-as-if	0.44	0.86
- To create artefacts	0.43	0.83
- To illustrate the potential	0.36	0.74
<b>Networking</b>		
- Contact potential suppliers	0.32	0.75
- Find R&D partners	0.38	0.90
- Find technology partners	0.46	0.92
<b>Resource Combination</b>		
- Finalize prototype	0.55	0.73
- Get equipments	0.53	0.81
- Buy or rent facilities	0.25	0.72
<b>Founding Team</b>		
- Number of team members	0.22	0.72
- Managerial experience	0.20	0.88
- Start-up experience	0.17	0.80
- Industry experience	0.17	0.81
- Team completeness	0.23	0.92
- Educational level	0.20	0.89
<b>[Technological Sophistication]</b>		
- Level of product innovation	[0.99]	[1.00]
- R&D emphasis	[0.06]	[0.15]





## APPENDIX 20. PLS estimation of the research and re-specified research models.

Table 1. Research model.

Block	Construct	Correlation	Contri to R2	Regression coefficient	Standard deviation	Student'T	P.value
Improvising R <sup>2</sup> = 0.0465	INTERCEPT			0.0000			
	Nascent Entrepreneur	0.1499	34.5580	0.1073	0.1286	0.8345	.4072
	Market Conditions	-0.1893	65.4420	-0.1609	0.1286	-1.2513	.2155
Networking R <sup>2</sup> = 0.0609	INTERCEPT			0.0000			
	Nascent Entrepreneur	0.2000	52.5937	0.1603	0.1276	1.2558	.2139
	Market Conditions	-0.1925	47.4063	-0.1501	0.1276	-1.1759	.2441
Resource Combination R <sup>2</sup> = 0.0185	INTERCEPT			0.0000			
	Nascent Entrepreneur	-0.1235	92.8856	-0.1391	0.1305	-1.0663	.2904
	Market Conditions	-0.0223	7.1144	-0.0591	0.1305	-0.4529	.6522
Founding Team R <sup>2</sup> = 0.1998	INTERCEPT			0.0000			
	Market Conditions	0.2080	20.8523	0.2003	0.1189	1.6838	.0974
	Improvising	-0.2963	54.8223	-0.3696	0.1339	-2.7597	.0077
	Networking	0.1297	21.3837	0.3293	0.1282	2.5685	.0127
	Resource Combination	-0.1119	2.9417	-0.0525	0.1263	-0.4157	.6791
Organizational Emergence R <sup>2</sup> = 0.4284	INTERCEPT			0.0000			
	Nascent Entrepreneur	-0.0965	-	0.1379	0.1091	1.2647	.2111
	Market Conditions	0.4302	35.8326	0.3568	0.1086	3.2855	.0017
	Improvising	0.0881	6.25039	0.3040	0.1256	2.4203	.0187
	Networking	-0.2176	19.5647	-0.3852	0.1189	-3.2383	.0020
	Resource Combination	0.2528	17.0231	0.2885	0.1126	2.5623	.0131
	Founding Team	0.1717	11.5092	0.2871	0.1129	2.5432	.0137
	Technological Sophist.	-0.2495	12.9275	-0.2219	0.1051	-2.1119	.0391

Table 2. Re-specified research model.

Block	Construct	Correlation	Contri to R2	Regression coefficient	Standard deviation	Student'T	P.value
Founding Team R <sup>2</sup> = 0.1458	INTERCEPT			0.0000			
	Improvising	-0.2854	75.0043	-0.3831	0.1258	-3.0457	0.0034
	Networking	0.1341	24.9957	0.2718	0.1258	2.1606	0.0346
Organizational Emergence R <sup>2</sup> = 0.4362	INTERCEPT			0.0000			
	Market Conditions	0.4494	33.6189	0.3264	0.1062	3.0729	0.0032
	Improvising	0.0841	4.9708	0.2580	0.1217	2.1190	0.0384
	Networking	-0.2246	17.5528	-0.3409	0.1132	-3.0106	0.0039
	Resource Combination	0.2767	18.5364	0.2923	0.1098	2.6617	0.0100
	Founding Team	0.2026	12.7731	0.2750	0.1107	2.4845	0.0159
	Tech sophistication	-0.2511	12.5481	-0.2180	0.1017	-2.1437	0.0363

**Appendix 21.** Unidimensionality of the measurement model (simple model).

<b>Block</b>	<b>Dimension</b>	<b>Cronbach Alpha</b>	<b>Dillon-Goldstein rho</b>	<b>Number</b>	<b>Eigenvalue</b>
Organizational Emergence	2	0.7329	0.8822	1	1.5784
				2	0.4216
Founding Team	5	0.9029	0.9292	1	3.6303
				2	0.6038
				3	0.3543
				4	0.2995
				5	0.1121
Market Conditions	3	0.7858	0.8763	1	2.1126
				2	0.6293
				3	0.2581
Improvising	3	0.7360	0.8508	1	1.9679
				2	0.6270
				3	0.4051
Networking	3	0.8214	0.8947	1	2.2207
				2	0.5683
				3	0.2109
Resource Combination	3	0.6362	0.8067	1	1.7858
				2	0.8744
				3	0.3398
Technological Sophistication	2	0.1663	0.7058	1	1.0907
				2	0.9093

**APPENDIX 22.** Outer weights and correlations between manifest variables and constructs in the simple model (for the estimation of individual item reliability of the constructs).

Block	Outer weight w	Correlation	Communality index (AVE)	Redundancy index
<b>Founding Team</b>			0.69	
- Team size	0.4030	0.8016		
- Collective managerial experience	0.0442	0.7715		
- Collective industry experience	0.3521	0.8446		
- Team complementarity	0.2025	0.8985		
- Collective educational level	0.1909	0.8562		
<b>Market Conditions</b>			0.70	
- Differencies in Products	0.4178	0.8542		
- Differencies in strategies	0.3162	0.8481		
- Stage of development of industry	0.4725	0.8005		
<b>Improvising</b>			0.60	
- To speak-as-if	0.6031	0.8889		
- Illustrate the potential	0.4907	0.8105		
- Create artifacts	0.1080	0.6519		
<b>Networking</b>			0.72	
- Discuss potential fournisseur	0.1666	0.6542		
- Find R&D partners	0.3672	0.9113		
- Find technology partners	0.5834	0.9571		
<b>Resource Combination</b>			0.56	
- Buy or rent space	0.4902	0.7979		
- Get equipments	0.2643	0.7079		
- Finalize prototype	0.5698	0.7403		
<b>Technological Sophistication</b>			0.51	
- Level of product innovation	0.9930	0.9983		
- R&D empahsis	0.0584	0.1485		
<b>Organizational Emergence</b>			0.79	0.29
- Perception	0.5702	0.8914		
- New Organization markers	0.5555	0.8853		

## APPENDIX 23. PLS estimation of simple, institutional, and resource dependence models.

Table 1. Simple model.

Block	Construct	Correlation	Contri to R2	Regression coefficient	Standard deviation	Student'T	P.value
Organizational Emergence R <sup>2</sup> = 0.4692	INTERCEPT			0.0000			
	Founding Team	0.2677	16.9905	0.2979	0.1041	2.8616	.0059
	Market Conditions	0.4497	29.7452	0.3104	0.1036	2.9954	.0040
	Improvising	0.1057	6.5004	0.2885	0.1146	2.5168	.0146
	Networking	-0.2409	18.0601	-0.3518	0.1075	-3.2715	.0018
	Resource Combination	0.2759	16.0744	0.2733	0.1048	2.6077	.0116
	Technological Sophistication	-0.2516	12.6294	-0.2356	0.0995	-2.3679	.0212

Table 2. Institutional model

Block	Construct	Correlation	Contri to R2	Regression coefficient	Standard deviation	Student'T	P.value
Organizational Emergence R <sup>2</sup> = 0.2299	INTERCEPT			0.0000			
	Nascent entrepreneur	-0.1671	2.4567	-0.0338	0.1173	-0.2881	0.7742
	Founding Team	0.2761	19.3459	0.1611	0.1178	1.3672	0.1766
	Market Conditions	0.4510	78.1974	0.3985	0.1196	3.3318	0.0015

Table 3. Resource dependence model.

Block	Construct	Correlation	Contri to R2	Regression coefficient	Standard deviation	Student'T	P.value
Organizational Emergence R <sup>2</sup> = 0.1904	INTERCEPT			0.0000			
	Improvising	0.1202	7.1772	0.1137	0.1313	0.8664	0.3897
	Networking	-0.2270	40.9560	-0.3435	0.1241	-2.7684	0.0074
	Resource Combination	0.2977	51.8668	0.3317	0.1258	2.6357	0.0106

**APPENDIX 24.** PLS estimation of intuitive model, and of simple model with complete data set.

**Table 1.** Intuitive model.

Block	Construct	Correlation	Contri to R2	Regression coefficient	Standard deviation	Student'T	P.value
Improvising R <sup>2</sup> = 0.1306	INTERCEPT			0.0000			
	Founding Team	-0.3330	78.8292	-0.3092	0.1201	-2.5739	0.0125
	Market Conditions	-0.1942	21.1708	-0.1424	0.1201	-1.1855	0.2403
Networking R <sup>2</sup> = 0.0736	INTERCEPT			0.0000			
	Founding Team	0.1641	44.7736	0.2008	0.1240	1.6192	0.1105
	Market Conditions	-0.1855	55.2264	-0.2191	0.1240	-1.7669	0.0822
Resource Combination R <sup>2</sup> = 0.0235	INTERCEPT			0.0000			
	Founding Team	-0.1532	99.0146	-0.1520	0.1273	-1.1939	0.2371
	Market Conditions	-0.0326	0.9854	-0.0071	0.1273	-0.0559	0.9556
Organizational Emergence R <sup>2</sup> = 0.4245	INTERCEPT			0.0000			
	Founding Team	0.1188	6.8217	0.2438	0.1128	2.1609	0.0348
	Market Conditions	0.4307	34.8833	0.3438	0.1055	3.2600	0.0019
	Tech Sophistication	-0.2515	13.1855	-0.2225	0.1025	-2.1702	0.0341
	Improvising	0.0822	4.5345	0.2340	0.1240	1.8881	0.0640
	Networking	-0.2340	18.3721	-0.3334	0.1133	-2.9431	0.0047
	Resource Combination	0.2845	22.2028	0.3313	0.1109	2.9860	0.0041

**Table 2.** Simple model and complete data set.

Block	Construct	Correlation	Contri to R2	Regression coefficient	Standard deviation	Student'T	P.value
Organizational Emergence R <sup>2</sup> = 0.6455	INTERCEPT			0.0000			
	Market Conditions	0.5232	27.2245	0.3358	0.1145	2.9320	0.0063
	Founding Team	0.2651	11.2987	0.2751	0.1100	2.4999	0.0179
	Improvising	0.1513	5.1725	0.2207	0.1360	1.6223	0.1149
	Networking	-0.2926	19.8967	-0.4389	0.1188	-3.6937	0.0008
	Resource Combination	0.3801	19.3725	0.3290	0.1266	2.5991	0.0142
	Tech Sophistication	-0.3500	17.0351	-0.3141	0.1122	-2.8007	0.0087