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# Entrepreneurial capabilities inherited from previous employment

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# ENTREPRENEURIAL CAPABILITIES INHERITED FROM PREVIOUS EMPLOYMENT

What did entrepreneurs learn in their careers?

Paper prepared for the 45<sup>th</sup> congress of the European Regional Science  
Association in Amsterdam, August 23-27, 2005

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## ABSTRACT

In entrepreneurship literature a strong connection between previous experience and post-entry performance of the firm is assumed. Several studies also provide empirical support for this assumption; the more relevant the background of an entrepreneur is, the better the new firm will perform. However, the actual knowledge inputs that the entrepreneur use are rarely addressed. This study is based on a questionnaire which aims at identifying the resources inputted. In the analyses the actual inputs are linked to the background of the entrepreneur. The results indicate that coming from the same industry provides the entrepreneur with more relevant knowledge which is concentrated on the product side of the business. Previous self-employment spells do not induce knowledge transfer, contrary to theoretical beliefs. Finally, an individual perspective seems more promising for further research, compared to an organisational view.

## **1. INTRODUCTION**

Career histories of entrepreneurs are key to the performance of the firms they start. This view is advocated in many recent literature on entrepreneurship and there is little debate on its general applicability; the better the background of an entrepreneur is, the better the new firm will perform. However, it is to a large extent still unclear how the working experiences of entrepreneurs influence the actual knowledge adopted by the entrepreneur. In other words, what relevant knowledge, used in the start-up of the new firm, did the entrepreneur pick up during employment?

The background of entrepreneurs has always been a critical element in estimating the propensity of entrepreneurship. Trait model studies show that persons with a role model, good education, and an above average income have higher chances of taking the step to entrepreneurship (see for example Blanchflower & Oswald, 1998; Delmar & Davidsson, 2000). Recently, several studies have singled out working experience as an important element of the entrepreneur's background, especially in relation to the performance of the new firm. This reasoning is most prominent in work on spin-offs. Spin-off firms, which are firms grounded by entrepreneurs with industry experience, are regarded as very promising new businesses, because of the entrepreneur's specific knowledge of the industry (Klepper, 2001a; Feldmann, 2002; Dahl et al., 2003; Garvin, 1983). Habitual entrepreneurs are expected to experience the same kinds of benefits. Because of previous self-employment experience, habitual entrepreneurs know how to run a business and, as a consequence, their new businesses will have higher chances of success (MacMillan, 1986).

These studies are all based on the strong assumption that entrepreneurs are educated in their previous employment position. They have picked up knowledge, which they use for establishing their own firm. Not the career backgrounds as such set the entrepreneurs apart from others, rather the entrepreneurs' endowment with resources, knowledge, and capabilities that are relevant for the new business. This idea is to some extent represented in the differentiation of career backgrounds of entrepreneurs. By identifying different background types, a wider range of capabilities is addressed (see for example Weterings & Koster, 2005). The importance of the actual inputs also resonates in the work of Klepper (2001b; 2004). He asserts that the positive effects of industry experience is limited to those entrepreneurs that come from

successful players in the industry. Both examples indicate the role of knowledge inputs. However, they are not addressed as such.

This paper takes the actual knowledge inputs as basis and links these to the backgrounds of the entrepreneurs. In this way, it becomes clear which types of knowledge are most important for the entrepreneurs and also where they have gained this knowledge. By looking at the relation between background and resources, more accurate hypotheses regarding post-entry performance of new firms can be formulated. The hypotheses more specifically take into account the types of resources that are inputted in the firm.

The paper continues, in section 2, with an overview of resource-based ideas of the firm. On the basis of these ideas, expectations on the relationship between background and capabilities are formulated. Section 3 introduces the dataset that buttresses this study. It contains information on career backgrounds and resource inputs of 299 entrepreneurs. Sections 4, 5, and 6 show the results and finally, in section 7, conclusions are drawn.

## **2. RESOURCES**

Entrepreneurship research uses the career paths of entrepreneurs to describe the capabilities they have. Experience results in relevant knowledge for running a business. However, the actual inputs in the firm are addressed in an indirect way. This is in contrast with organisational literature in which the available resources are in focus, rather than the characteristics and backgrounds of the personnel. Thoughts from this realm can be used to deepen the understanding of the role of previous employment experiences of entrepreneurs for the day-to-day management of their new firm.

*“Resources include all assets, capabilities, organisational processes, firm attributes, information, knowledge, etc. controlled by the firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness”* (Barney, 1991 p. 101; Daft, 1983). Actions and competitive advantages of firms can be explained by looking at the resources available (Barney, 1991; Amit & Schoemaker, 1993). In order to accurately describe the impact of the resources, classifications of resources have been made. Different kinds of resources relate to different aspects of running a business. Barney (1991, p. 101) sees three main categories of relevant resources: physical capital resources, human capital resources,

and organisational capital resources. Physical capital resources include all tangible resources necessary for production, such as machinery and the building in which the firm is located. Human capital resources are internalized in the employees and include aspects such as networks, experience, and judgment. Finally, the organisational capital resources are used for planning, controlling and coordinating.

There is an essential problem when linking the concept of 'resources' to entrepreneurship. Entrepreneurship is a process on the individual level, whereas resources are related to the context of the firm. This problem is symptomatic for comparisons of results from the fields of demography of firms and entrepreneurship (Van Wissen, 2002). For example, counting the number of new firms is different from counting the number of self-employed. However, in the early stages of the start-up process the actions of the firm closely correspond to the actions of the entrepreneur (Stam, 2003; Lazear, 2003). The firm is the entrepreneur. The ability of the entrepreneur to combine resources, to identify market niches, and to take the appropriate administrative steps to start a business determine the characteristics of the new firm. This makes human capital the most important resource in the early stages of development. Human capital resources are on the individual level and are internalised in the entrepreneur. When an employee takes the step to entrepreneurship, the human capital resources are transferred in the process.

Obviously, also physical capital resources need to be allocated to the new firm. The new firm needs tangible assets to start working. For this the entrepreneur needs to have money or contacts that can provide the necessary support (Koster & Van Wissen, 2004). The net worth of entrepreneurs has been shown to positively influence the propensity of starting a firm (Delmar & Davidsson, 2000). However, the allocation of these resources is also very much dependent on the capability of the entrepreneur to gather them. The relationship with previous employers can play a vital part in this process, especially when the new firm is a continuation of an existing firm or division or when the employer decides to support the new firm. Having a background in another organisation can help the entrepreneur to transfer relevant resources into the new firm. Organisational capital resources are of less importance at the offset. Most new firms start very small and have very limited organisational structures. Later in the lifespan, other actors, such as suppliers, employees, and business partners gain

influence and the role of the entrepreneur shrinks. As the firm develops and grows, the need for an organisational structure emerges and, on the firm level, organisational resources are created. This study focuses on the start-up process and therefore organisational resources of the firm can be disregarded. This does not mean, however, that the ability of the entrepreneur to organize the new firm is unimportant. It is important, but it can be regarded as part of the human capital of the entrepreneur and not at the level of the firm. Tangible inputs aside, human capital of the entrepreneur forms the main input for a new firm.

Like resources, human capital comes in many flavours. Becker (1964) gives one of the first comprehensive accounts of human capital. He describes the ways in which individuals gather human capital and how it influences their productivity and earnings. In this respect, he makes an important distinction between general training and specific training. General training entails gathering resources that are also useful outside the firm that provides the training (p. 11). The knowledge gained can be deployed in every setting. Management skills are a clear example, but also sale capabilities of the entrepreneur fall into this category. General knowledge is usually captured by variables such as years of education, years of working experience, or age (see for example Hyttinen & Ilmakunnas, 2004). Specific knowledge is a more complex phenomenon. Specific training has a larger positive effect for the providing firm than for other firms (p. 18). In other words, general training results in capabilities that are easily deployed in other firms, whereas specific capabilities lose their merit outside the context of the source firm. It is too simplistic, though, to see both types of training as a dichotomy. They form the poles of a spectrum and most training (and the resulting knowledge) will be somewhere between the two extremes. Becker (1964, p. 18) already states that pure specific training is unlikely to occur. There is always overlap with activities in other firms making it likely that even specific capabilities can be transferred from one firm to another and still remain useful. Especially firms that are similar to the source firm could benefit from specific knowledge types. Following this reasoning, specific knowledge is often seen on the scale of an industry. Having a background in an industry renders advantages for entrepreneurs which stay active in the same industry (Klepper, 2001a; Agarwal et al., 2004). These

entrepreneurs have specific knowledge which is extremely hard to collect when working in another industry.

Using the argument of Becker as a starting point, Brüderl et al. (1992) address more specifically the influence of the employment career. They distinguish between industry-specific and entrepreneur-specific human capital. Industry-specific knowledge entails an understanding of an industry's relevant characteristics. The entrepreneur is able to identify profitable market niches and with knowledge of production the productivity of the firm can be increased. In this view, industry-specific knowledge has both a demand dimension and a supply or production dimension. Shane (2000; Eckhardt & Shane, 2003) highlights the demand component. Experience induces the recognition of possible markets (Shane, 2000 p.259). Although Shane sees an obvious relation between market information and prior experience in an industry, this relation might be more complex. For innovation, also user knowledge appears to be relevant (Boschma & Weterings, 2004). Coming from another industry, user entrepreneurs can precisely indicate the flaws of existing products and the needs of the market. As previous members of the market, they can identify niches a new firm can try to fill.

The second form of experience is entrepreneur-specific experience. This type is related to prior spells of self-employment in which the entrepreneur gathered knowledge about administrative duties and management. Like Becker's general knowledge, this type of experience is industry independent. However, it is not a result of formal training as Becker (1964) sees it, nor does it relate to any production activities as is possible in Becker's view. The nature of the knowledge gained, however, seems very similar in both views.

From the above, the following expectations can be formulated:

1. It is likely that there are several, broadly defined, groups of human capital resources. We expect to find a group of human capital factors that are related to production, and a group of resources that are related to the organisational capabilities of the entrepreneur (Barney, 1991).
2. The available resources are dependent on the working experience of the entrepreneurs. Industry experience is expected to be related to specific resources,

such as knowledge of the production process. Organisational knowledge should be identified as a general type without relations to an industry.

### **3. DATA CONSIDERATIONS**

The data for this study has been obtained through a questionnaire, which was sent to 1001 young firms in the north of The Netherlands (provinces Fryslân, Groningen, and Drenthe) in November 2004. The target population was identified from the Chambers of Commerce (CoC) register. All new firms are required to register here. The questionnaire was sent to firms in all industries, demand-driven industries retail and hotel and catering excluded. Administrative units without any economic activities were excluded from the list. Outlets and subunits of larger companies were also not taken into consideration. The firms started between January 2001 and November 2004 and had at least 2 employees (including owner/entrepreneur)

The response rate was a reasonable 35% and the workable dataset contains 347 respondents. From this set, 49 respondents have been dropped as the corresponding firms started before 2000. Older firms are not used in the analyses, because the answers concerning the start-up process could be unreliable because of recollection problems. The sample of 299 respondents is representative for province, size and industry of the total population of new firms in the three provinces studied<sup>1</sup>.

### **4. EXPERIENCES**

The questionnaire addressed the actual knowledge transfer (or human capital resources) from the previous job of the entrepreneur to the new firm. Which aspects of entrepreneurship were picked up in employment? It becomes clear very quickly that many entrepreneurs have a background in another firm. An impressive 72% of all entrepreneurs come from a position as employee, 64% even has experience in the same industry. According to these figures and adopting a lenient definition, spin-offs are the most common means of entry (Garvin, 1983; Dahl & Reichstein, 2005)<sup>2</sup>. Having a background in another firm is very much appreciated by the entrepreneurs and 75% states that without employment experience, the new firm was unlikely to have been established. Although this hints at the educational role of prior employment spells, it still not addresses the capabilities learned by the entrepreneurs. In order to

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<sup>1</sup> Tests available upon request

<sup>2</sup> Dahl and Reichstein show that a stricter definition leads to a much smaller share of spin-off firms



look beyond crude measures of employee education and to identify the actual knowledge flows from parent company to start-up, the questionnaire proposes nine fields of knowledge in which the entrepreneurs can be educated during previous employment. The categories are quite abstract in order to make them applicable in the context industry of all industries.

<b>Knowledge used</b>	<b>N (used)</b>	<b>%</b>
Industry	165	66
Product	147	59
Potential clients	131	52
Entrepreneurship capabilities	108	43
Management experience	98	39
Network / relations	96	38
Potential suppliers	92	37
Production process	89	36
Identification market niche	60	24
No knowledge used	49	16

Table 2: Knowledge used, N=299, multiple responses possible

Table 2 shows the nine knowledge categories and their relative shares. Knowledge from prior job occupations is an important input for most entrepreneurs. Only 49 entrepreneurs (16 %) indicated not to have used any knowledge from the mother company. On average, entrepreneurs used 3.39 (4.04 excluding 49 zeros) knowledge types. The most important inputs are knowledge about the industry, knowledge about the product and the identification of clients. Industry knowledge is hard to translate into practical examples. It is a general category that could capture business styles and specific characteristics of the industry. The second and third factor are easier to interpret and relate to the market of the firms and the products they manufacture (or service they provide). These are two of the main ingredients for the knowledge typologies formulated in the theoretical part. At some distance, the top three is followed by general knowledge indicators ‘management’ and ‘entrepreneurship’. It is striking to see that recognising a market niche, or a new business opportunity only applies in 25% of all cases. This indicates on the one hand that previous employment is not that important to identify business ideas. On the other hand, it challenges the often attributed innovative flavour of new firm formation. Especially in policy,

entrepreneurs are often seen as innovators in the economy. Albeit true in terms of risk taking and rejuvenation of the economy, the statement hardly holds when considering new products. There are only so many entrepreneurs who start their firm based on a new product or service. Most of the entrepreneurs are followers in the market (see further Aldrich & Martinez, 2001).

## 5. Underlying patterns

The theoretical section identifies several groups of resources to which the human capital of the founders can be related. In this section, we search for these underlying patterns in the nine knowledge types distinguished in the dataset. We expect to find a group of organisational knowledge and a group of product knowledge that is related to industry specific knowledge. For this purpose, a principal component analysis (PCA) was conducted. As all nine variables are dichotomous variables, the dataset does not meet the conditions of a standard PCA, which requires standardized continuous variables. However, the standard correlation matrix that serves as input for a PCA can be replaced with a tetrachoric correlation matrix (Pearson, 1901). This matrix can now be used as input for a standard PCA. The statistical package Prelis/Lisrel accommodates this procedure. Table 3 shows the results.

<b>Types of knowledge used</b>	<b>Component 1</b>	<b>Component 2</b>	<b>Component 3</b>
Potential suppliers	0.444	0.036	-0.039
Production process	0.438	-0.118	-0.127
Product	0.413	-0.239	-0.400
Sector / Industry	0.396	-0.257	-0.161
Potential clients	0.398	0.098	0.304
Network	0.287	0.188	0.562
Business opportunity	0.170	0.258	0.370
Management	0.104	0.638	-0.164
Entrepreneurship capabilities	0.055	0.586	-0.473
Variance explained (%)	40.74	18.96	11.56

Table 3: Principal Component Analysis, Component scores

The PCA seems to confirm the ideas about knowledge types that were introduced earlier. The first component takes up most of the variance and constitutes of quite some factors that all seem to be related to the production process of the firms. There is a focus on the input side of the company; knowledge of potential suppliers, the

production process, and the product itself are the main factors that explain this component. In addition, this component also shows an influence of the potential clients. It seems the component identifies knowledge on the whole production process from input via actually making the product to selling it. The second component clearly indicates organisational knowledge. Management experience and entrepreneurship knowledge are linked and indicate the ability of the entrepreneur to deal with the organisational part of entrepreneurship. The third component has negative values on product-related knowledge types and organisation knowledge. Demand knowledge appears to be the defining variable for this component. When adding a fourth component, 'business opportunity' loses its weight in components 1 and 3 and fills up the fourth component as only variable with a considerable weight. The explained variance added by the fourth component is small and the variable 'business opportunity' is not important to most entrepreneurs (Table 2). Moreover, the fourth component would be largely explained by one variable, making it unsuitable for its goal of data reduction. The fourth component is therefore dropped and we identify three components: input related knowledge, organisation knowledge, and demand knowledge.

These three components can be used to describe certain types of entrepreneurs. It can be expected that the knowledge packages of the entrepreneurs vary. Table 2 already showed the diverse significance of the various knowledge inputs. In order to classify the entrepreneurs through their inputs from previous employment, a hierarchical cluster analysis<sup>3</sup> was conducted. The input for the analysis is the standardized component scores of all cases. A small group of entrepreneurs (n=49) indicated that they did not use any relevant knowledge stemming from their previous employment (Table 2). This group was excluded from the PCA. At this point, these entrepreneurs re-enter the analysis. They are labelled Cluster 0. By definition, the members of this cluster use no knowledge what so ever. Table 4 shows the results of the cluster analysis for 5 distinct start-up groups.

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<sup>3</sup> Cluster method: Ward, Distance measure: Squared Euclidean Distance

Clusters	Production component	Organisation component	Demand component	N
0	NA	NA	NA	49
1	-0.27	0.67	-0.84	91
2	-0.74	-0.25	1.00	68
3	0.38	-1.24	-0.03	58
4	1.62	0.86	0.30	33

Table 4: Cluster analysis

Cluster 0 contains entrepreneurs without any relevant resources gained as employee. These entrepreneurs are probably real entrepreneurs in the sense that they have a desire to be self-employed, regardless of the market they operate in. Some of the entrepreneurs do not have any previous employment, which automatically places them in the groups of no-experience related knowledge inputs. Cluster 1 is dominated by the organisation component. The entrepreneurs apply their previously gained management capabilities to start a company. This goes along with a relatively poor understanding of the demand structure. Containing 91 entrepreneurs, this cluster is the largest. The generic character of organisational knowledge and the wide-spread availability of it, make it a very common feature of entrepreneurs. Cluster 2 has a strongly positive demand component and a negative weight for product knowledge. Entrepreneurs in this cluster base their company on knowledge of possible clients. This type of knowledge is often left out of analyses, but it seems a very powerful asset for an entrepreneur. A lack of market knowledge and the identification of suitable clients is a major problem for many new firms (Van Gelderen, 1999; Van Geenhuizen, 2003). A good understanding of the possible market can be a huge benefit for an entrepreneur. Cluster 3 stands out with a strongly negative organisation component and a positive product component. This description is in line with the idea that some entrepreneurs combine superior product knowledge with weak organisation capabilities. Especially university spin-offs are characterised in these terms (Van Geenhuizen, 2003). Cluster 4 contains well-endowed entrepreneurs. The average component factors of product and organisation knowledge is the highest of all clusters. Besides, this knowledge is combined with a relatively good understanding of the market. Cluster 4 is the smallest group with only 33 entrepreneur (9%). It takes time and experience to gain such an extensive knowledge of all aspects of running a new

firm. Besides, the entrepreneurs need to be outstanding (compared to other entrepreneurs) in many aspects. This group includes elite entrepreneurs in terms of knowledge endowment and this makes it an exclusive and small group.

## **6. Resource transfer and background**

The resources available to the entrepreneur are expected to be influenced by the backgrounds of the entrepreneurs. Different backgrounds lead to different competences. Not only the nature of the knowledge types are influenced, but also the occurrence of knowledge transfer as such. Some entrepreneurs have a background that is not suitable for their new firm and as a consequence no resources are transferred. Two dependent variables are identified to capture both the occurrence of knowledge transfer and the nature of the knowledge. The first is a dummy variable which indicates whether the entrepreneur did or did not use any knowledge from previous employment. Secondly, the standardized component scores of the entrepreneurs are the dependent variables that address the nature of the knowledge inputs. The component scores describe the entrepreneur's special fields of expertise, which is either product, organisation or market.

The independent variables relate to backgrounds on the organisational level and the individual level. The first variable with an organisational flavour is 'related start-up'. In these instances, entrepreneurs are involved in establishing a new firm that has some kind of predecessor. The start-up is either a continuation of an abandoned business, or a split-off part of a larger company. In both cases, the entrepreneur can benefit from resources that come from the previous structures. Entrepreneurs involved in a related start-up are expected to more often use knowledge from the previous firm. The same reasoning applies when looking to support. Some firms receive support from their previous employer while starting up. This also leads to better resource availability. On the individual level, entrepreneurs can have either self-employment experience or industry experience. Self-employment spells are theoretically linked with organisational knowledge. The entrepreneur already knows from past experiences how to run a business. Some of the entrepreneurs will lack a background as an employee, making it impossible for them to transfer knowledge from a prior firm to the new. This variable is therefore not used in the analysis of the occurrence of knowledge transfer.

The industry background of entrepreneurs is often seen as pivotal for knowledge collection (Klepper, 2001a). Having a background in the same industry has been shown to be a beneficial asset for entrepreneurs. It should therefore be related to a higher chance of knowledge use. Looking at the nature of the inputs, sector experience is likely to influence product related knowledge as this is a specific learning element. Generic elements as organisational capabilities and, to a lesser extent, assessment of the market have no relation to sector experience. The last independent variable concerns hybrid start-ups. Some entrepreneurs will start-up their business while remaining employed. This offers the entrepreneurs a natural source of relevant information for the new business.

	<b>Knowledge used</b>
Intercept	0.55**
Related start-up	-0.22
Supported start-up	1.46*
Self-employment experience	--
Hybrid start-up	0.16
Sector experience	2.22***
Nagelkerke R <sup>2</sup>	0.27
-2 loglikelihood	201.0
N	289

Table 5: binary logistic regression on dummy, knowledge used (1 = yes)

Table 5 shows the result of the regression on the dummy variable. The probability of entrepreneurs to use any previously learned knowledge depends strongly, as expected, on the industry experience of the entrepreneurs. It is easier for the entrepreneurs to transfer knowledge to the new firm, when staying in the same industry. Also supports from a parent firm helps the entrepreneur to use knowledge for the new firm. It is easier to use your background when the parent firm offers a helping hand. Using the previous firm as building blocks, however, has no effect. Apparently, the input is of less use to the entrepreneur and even related start-ups can be regarded as new endeavours that do not benefit much from the already existing structures and knowledge. Finally, also hybrid start-ups have no explanatory power in the model.

	<b>Product comp.</b>	<b>Organisation comp.</b>	<b>Market comp.</b>
Intercept	--	--	--
Related start-up	0.06	0.06	-0.07
Supported start-up	0.11*	0.01	-0.08
Self-employment experience	0.02	-0.04	-0.01
Hybrid start-up	-0.16***	-0.01	0.06
Sector experience	0.39***	-0.40***	-0.05
R <sup>2</sup>	0.25	0.15	0.02

Table 6: Linear regression on standardized component scores, the table shows standardized Beta's

When knowledge is transferred from a parent company to a new firm, the nature of this knowledge can still vary. Table 6 shows the effects of the backgrounds on the nature of the knowledge inputs. Based on the PCA, three fields of knowledge are distinguished: product knowledge, organisational knowledge en market knowledge. As the results show, the models have very different explanation power. The R<sup>2</sup> of the models varies from a reasonable 0.23 for product knowledge to a negligible 0.02 for market knowledge. It seems that there is no relation between market knowledge and the four background variables. Obviously other variables could render different results, but it seems that having a feel for market opportunities is something which can be regarded a general learning effect. Organisational knowledge is also a generic learning element. It should be related to previous functions rather than to industry-specific training. Self-employment spells should therefore be positively related to organisational knowledge. However, there is no statistical connection. Perhaps manager experience is a better estimator of this component. It is striking to see that sector experience is highly significant, but has a negative effect. It could be that many entrepreneurs with organisational knowledge enter a sector based on their ability to start and run a firm. The product is of less importance. The regression on product knowledge shows that industry experience is the largest predictor for this type of knowledge. Specific working experience is related to product knowledge. Also support is related to product knowledge. This could indicate cooperation between the parent firm and the supported firm. Hybrid start-ups have a significantly lower input of production knowledge than other new firms. The entrepreneurs retain their previous position while starting up the new firm. It is likely that their employer would not agree with the entrepreneur working in the same field, producing the same product or

service. As a consequence hybrid start-ups will be involved with another product, making product knowledge less applicable to the entrepreneurs.

The organisational variables are not important in any of the regressions. Although these new firms are build on existing structures and resources, the knowledge inputs are not stimulated. To really describe resources transfer from a parent firm to a start-up, the entrepreneur appears the most promising unit of analysis.

## **7. CONCLUSIONS**

This study addresses the relation between resource endowment of entrepreneurs and their prior employment career. In many studies, entrepreneurs are assumed to use their employment experiences for setting up a new firm. However, it is unclear what entrepreneurs have learned in their employment career. This study takes the resources as starting point and it is shown that the capabilities of entrepreneurs classify into three categories. There is a production component of knowledge, an organisational component, and finally a market component. The three components encompass all aspects of running a business. Based on these components, several types of entrepreneurs can be distinguished. First, there is a group of entrepreneurs that do not rely on knowledge gained in previous employments. Three groups excel at one element of entrepreneurship. Finally, there is a group of entrepreneurs that have used knowledge from all three components. These entrepreneurs have good knowledge of the product, the organisation, and the market. This group is understandably small, as the entrepreneurs need a broad frame of reference. Entrepreneurs that mainly transfer organisational knowledge to their new firm form the largest group.

Regression analyses show that sector experience impacts most clearly the production side of running a business. Entrepreneurs with sector experience have knowledge of the product and the production process. This finding is important for spin-off research that often adopts a definition based on sector experience. Spin-offs are expected to perform better as they have sector experience (Klepper, 2001a). This study suggests that the comparative advantage of spin-off firms is mostly at the production level and less on organisational matters or market knowledge.

Self-employment experience has an unexpected effect. Although theoretically linked to organisational knowledge, it seems to have no effect. Entrepreneurs with a previous self-employment spells have the same management knowledge as



entrepreneurs that were employed. Self-employment could be a sign of an entrepreneurial mindset rather than of knowledge of how to run a business.

Finally, it is important to notice that taking an organisational view hardly results in deeper understanding of resource transfer between companies. Firms that are derived from already existing companies have no other resource structure than independently created new firms companies. To explain differences in resource inputs and performance an analysis on the individual level looks more appropriate.

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