

**CONFIGURATIONS OF NEW VENTURES AND SMES:
A LITERATURE REVIEW OF EMPIRICAL RESEARCH**

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Abstract

This article aims at analyzing configuration studies and their respective variable selection in the context of entrepreneurship and SMEs. New ventures as well as SMEs are both confronted with a high amount of dynamism and complexity. The configuration approach is well suited to capture that and allows researchers to model and analyze the performance and change of these ventures. This perspective focuses on identifying classifications of firms that resemble each other along mutual interactive dimensions (Short et al., 2008). In the first part, the theoretical background of this paper is presented. Following that, the existing configuration literature is reviewed. 34 articles meet the tight selection criteria, which determine an article's inclusion. In a next step, the characteristics of the whole sample are discussed and the variable selection of the papers is analyzed in detail. Similarities as well as varieties between the different articles are highlighted and if available the reasoning behind the variable selection is also presented. In order to provide a systematic overview, the variables are categorized in four domains (person, structure and resources, strategy, environment), which encompass contextually related variables. It shows that strategy and environment are the two domains, which were examined most often. More than 90% of the analyzed articles incorporated variables within these domains. However, not even half of the studies focused on the person. Furthermore, factors that are intensively discussed in entrepreneurship literature but were not included in any study are described in this paper.

1 Introduction

Over the past several decades, the identification of factors that determine new venture performance such as survival, growth or profitability has been one of the most central fields of entrepreneurship research (Sarasvathy, 2004). A multitude of research papers has focused on exploring various variables and their impact on performance (Bamford et al., 2004). However, in order to be able to analyze and model the performance of new ventures and SMEs, the complexity and dynamism they are facing as well as the fact that they may not be a homogenous group but significantly different in regard to many characteristics (Gartner et al., 1989) have to be taken into account.

Different approaches to analyze venture performance exist and can be distinguished by their complexity. The most basic model is the universal effects approach, which assumes that only one exclusive best strategy exists to successfully manage a venture. The contingency approach is more complex and assumes that the scope and direction of the performance impact of a certain success factor are influenced by the environment. The configuration approach is even more elaborated and regards companies as complex entities, whose performance depends on the interaction of different factors.

The comparison of these approaches, which are well established in the management as well as entrepreneurship literature, shows that the configuration approach is best suited to analyze and model the performance of new ventures and SMEs. This perspective assumes that ventures can be better understood by developing distinctive, internally consistent sets of organizations than by seeking to expose relationships that hold across all ventures (Ketchen et al., 1993). Hence, the configuration approach focuses on identifying classifications of firms that resemble each other along conceptual domains such as person, structure, strategy and environment, which ought to be analyzed as a whole (Miller, 1996).

One of the most crucial issues determining the outcome of studies applying the configuration approach is the selection of the variables. Significant differences in the variable sets applied appear between most of the articles. Although papers that focused on providing an overview of empirical configuration studies in entrepreneurship research already exist (e.g. Harms et al., 2007), the variable selection within these studies may still cause occasion for detailed analysis.

Consequently, this paper attempts to provide an extensive overview of the variable selection and the underlying reasoning of configuration studies in the context of new ventures and SMEs. In order to review the existing literature systematically, a search pattern was developed and tight selection criteria were applied. The literature review resulted in 34 articles, which are analyzed in detail. First, general characteristics of the sample are presented. Second, the variable selection of the articles is examined separately for each domain.

Following the introduction, the theoretical background of the paper and the suitability of the configuration approach in the context of new ventures and SMEs are discussed in detail. In the next section, the method and results of the literature review are presented. Lastly, factors are explored, which were not yet included in any configuration study, and final conclusions are drawn.

2 Theoretical Background

A key topic in entrepreneurship research is the explanation and modeling of new venture performance and development (Sarasvathy, 2004). However, the process of starting and running a business is a complex task involving many influencing factors, which imposes high methodological requirements. Different approaches to analyze new venture performance exist and can be differentiated according to the kind of the relationship between the analyzed variables and new venture performance.

2.1 The Universal Effects Perspective and the Contingency Approach

The *universal effects perspective* assumes that linear relationships between mutually independent success factors and the new venture performance exist and hold under any circumstances (March & Sutton, 1997; Scherer & Beyer, 1998). This rather simplistic approach was applied to probe various relationships as for example between entrepreneurship and performance (e.g. Miller & Friesen, 1982a; Covin & Slevin 1986, 1988) or entrepreneurship and organizational structure (e.g. Khandwalla, 1977; Miller, 1983).

The *contingency approach* is a more elaborated approach compared to the universal effects perspective since it assumes that the strength and direction of the performance impact of a certain success factor are affected by the environment (Harms et al., 2007). In other words, there is no longer one exclusive best way to manage a venture but one best way for the respective context the company is operating in (Scherer & Beyer, 1998). For instance, Hofer and Sandberg (1987) found that the success rate of new venture entry is significantly higher if the respective industry is dominated by a major competitor (i.e. >49% market share) than if the largest existing player has less than 25% market share.

However, researchers applying one of these traditional approaches may face severe shortcomings. According to Miller (1981), five major points of criticism exist concerning the assumptions behind most contingency approaches. Two of them are that no attempt is made to segment the sample to discover whether differences in the nature of relationships within the sample exist and that only one way to succeed in a certain environment is assumed to be relevant and is searched for. By the same token, Hambrick and Mason (1984) argue that some success factors applied in combination might influence performance negatively when used together or their impact may depend on factors, which are not included in the study. Moreover, the contingency approach ignores changes in contingencies and is consequently not capable of illustrating organizational development (Harms et al., 2007). Dess et al. (1993) provide an overview of the main benefits and the limitations associated with the number of domains examined within an approach.

Nevertheless, traditional approaches are yet widely adopted by entrepreneurship research. On a methodological level, Bouckennooghe et al. (2004) found that from 1999 through 2003 about 60% of the empirical studies in leading entrepreneurship journals applied inadequate statistical techniques. On a theoretical level, Sarasvathy (2004) argues that a shift in entrepreneurship research is needed away from a separated analysis of the impact of the inner and outer environment on performance towards a focus on the interface between them.

To sum up, assumptions and orientations of the traditional approaches are inadequate to model and consequently explain the multiple and significantly interdependent contingencies such as strategy, leadership or technology, which most of the firms have to face (Burton & Obel, 2004; Galunic & Eisenhardt, 1994). Accordingly, a clear need is identified to move beyond simple contingency approaches towards an approach, which takes into account the complexity and dynamism that entrepreneurs and SMEs are confronted with – the configuration approach.

2.2 The Configuration Approach

The configuration approach was developed in the early nineteen-seventies and made a serious impact on business studies. At the early stage many researchers conducted research in this field albeit under different labels. Examples therefore are Mintzberg's (1973) modes, Miller and Friesen's (1978) archetypes, Miles and Snow's (1978) typologies, Porter's (1980) generic strategies and strategic groups or Miller's (1981) gestalts, which have built the base for many subsequent studies. Researchers did not agree on a common definition of the term configuration, which hampered the development of the configuration research (Miller, 1996). Following Meyer et al. (1993, p. 1175), a configuration is "...any multidimensional constellation of conceptually distinctive characteristics that commonly occur together". The configuration approach describes an organization as a complex entity, which can be characterized by four domains consisting of a certain number of variables mutually influencing each other (Miller, 1987a). Hence, domain can be understood as a superordinate term that encompasses variables that contextually relate.

Miller (1987a) selected four domains or imperatives as he labeled them according to the following three criteria. Firstly, their vital and driving force within organizations has to be unquestionable. Secondly, domains must have proven empirically that they engender integral relationships among strategy, structure and environment. Thirdly, their central role in generating organizational configurations that occur several times has to be undeniable. Four domains, namely environment, organizational structure, leadership and strategy meet these

criteria (Miller, 1987a). Since the variables within each domain are not necessarily linked linearly, the configuration approach is able to model not only dependencies but also interdependencies between them (Reeves et al. 2003; Harms et al., 2009).

The configuration approach builds on a number of assumptions that are closely related to each other. A key idea of this perspective, which is known as the concept of *equifinality*, is that different ways exist to succeed in the same environment (Katz & Kahn, 1978). Not only one optimal path but a number of successful or unsuccessful models of adaption to a given surrounding are assumed to be relevant. By the same token, Harms et al. (2009, p. 33) state: “Equifinality is a necessary condition for the existence of various firm types, since without various possibilities to be effective, economic forces tend to eliminate inefficient firm types”.

Another key assumption is the concept of *fit*, which proposes that it is the fit that is related to performance. Fit can be described as the degree of consistency between multiple domains, internal factors as well as external demands (Nadler & Thusman, 1979). This concept is of crucial importance for the configuration approach since it reduces the multitude of potential variable patterns to a few “fitting” firms (Miller, 1992). Closely related to the concept of fit is the assumption of *reductive mechanisms*, which states that there will be a limited number of empirically observable firm types (Miller, 1981). Economic, institutional and technical forces limit the quantity of conceivable organizational forms and strategy options to a rather small number of configurations that have the potential to survive on the market (Wolf, 2000).

In addition, the configuration perspective enables researchers to identify and model *organizational change*. For example, Bennebroek Gravenhorst et al. (2003) developed organizational change taxonomies and found that the acceptance of change differs between firm types. The configuration approach assumes that ventures do not adapt incrementally to changes in their environment but rather in large dramatic jumps. In contrast to many studies, which argue in favor of slow gradual changes that they regard as less risky, it was found that companies that change concertedly and dramatically are more likely to be associated with high performance (Miller & Friesen, 1982b). Following this perspective, Harms et al. (2009) argue that the development of a venture can be described as a punctuated equilibrium process.

Configurations can either be discovered via typologies, meaning theoretical reasoning, or via taxonomies, meaning qualitative and quantitative methods. *Typologies* refer to a conceptually derived, interrelated set of ideal types, each of them representing a unique combination of the organizational attributes that ought to affect the relevant outcomes (Dess et al., 1993). Examples for well reputed typologies in the configuration literature are the ones by Weber (1947), Miles and Snow (1978), Mintzberg (1979) or Porter (1980, 1985). On the one hand, typologies proved to be very popular probably because they provide a parsimonious framework for describing complex organizational entities. On the other hand, they have been massively criticized. For instance, Hambrick (1984, p. 28) argues: “Pure typologies are largely the product of rather personal insight [and] may not accurately reflect reality”. Nevertheless, typologies are in many cases grounded on empirical knowledge and experience (Short et al., 2008). *Taxonomies* are the second way to discover configurations by applying qualitative methods such as case studies or quantitative methods such as real types (Scherer & Beyer, 1998). Miller and Friesen’s (1977) study was based on the taxonomy approach and is a good example for a popular paradigm. However, unless theoretically substantiated, taxonomies may contain statistical artifacts and are not useful beyond a single sample (Short et al., 2008). Although typologies and taxonomies seem to be very different at the first sight, they have a lot in common (Meyer et al, 1993). Short et al. (2008, p. 1058) describe both as

“...the products of cycling induction and deduction. While one is the result of conceptual ideas based on empirical experience, the other is a result of empirical techniques only made useful through conceptualization”. It can be argued that both methods rely on each other to a certain degree (Doty & Glick, 1994). While typologies may be of limited value for research and practice unless empirically tested, taxonomies need to be theoretically substantiated in order to claim this value (Wolf, 2000).

Despite the aforementioned advantages of the configuration approach compared to the universal effects perspective or contingency approaches, methodological and theoretical challenges also have to be brought forward (Harms et al., 2009). The main challenge on the methodological level is basically the decision between typologies and taxonomies, which were discussed in the last preceding paragraph. On the theoretical level, Harms et al. (2009) identify two major challenges, which researchers applying the configuration approach have to face. Firstly, a number of assumptions (equifinality, fit, reductive mechanisms and configuration change) needs to hold. The second important issue concerns the variable selection. In this regard, Ketchen et al. (1997) distinguish between the essentialist approach using a narrow range of variables and the empiricist approach using a broad range of variables. Both approaches can be grounded on an inductive or deductive concept. As already mentioned above, the selection of a variable set for each domain is of crucial importance for the outcome of a configuration study. However, configuration research has not yet been able to solve this particular challenge since, to the knowledge of the authors, no article has been published so far, which analyzes the variable selection and the reasoning behind it. The authors attempt to close this research gap by an analysis of the existing studies in this field.

In summary, the main advantages of the configuration approach are that complex multivariate relationships between variables are incorporated, more detail is provided, organizational change can be modeled and that different ways to succeed are acknowledged. Although this perspective on the one hand certainly offers immense potential for findings that have normative implications (Dess et al., 1993), on the other hand it imposes high methodological as well as theoretical demands on researchers.

2.3 Suitability of the Configuration Approach in the Context of New Ventures

Having presented how beneficial the application of the configuration approach can be in business studies in general, the advantages and challenges of this approach are now discussed in the context of entrepreneurship research.

The analysis of mutual interaction between the four domains can be regarded as a particular strength of the configuration approach (Dess et al., 1993). Miller (1996, p. 507) stresses the importance of the aforementioned interface: “Since configurations are about organizational wholes, more should be done to discover their thematic and systematic aspects – to probe into just why and how their elements interrelate and complete each other to produce the driving character to drive an enterprise”. In other words, the complex nature of new ventures and SMEs can be analyzed by applying the configuration approach. Another reason why the configuration perspective can contribute to entrepreneurship research is that it allows to model and analyze a firm’s development over time, which is of great interest in the entrepreneurship literature (e.g. Bennebroek Gravenhorst et al., 2003).

In general, the configuration approach is well suited for entrepreneurship research since it captures the holistic nature of new ventures and offers the opportunity to model their performance and development (Harms et al., 2009).

3 Method

A systematic literature review is provided in order to analyze the variables used within empirical configuration studies published from 1989 through 2009. The search pattern applied builds up on the one developed by Harms et al. (2007) and can be described as follows. As a first step, the research was narrowed down to the five leading entrepreneurship journals according to Katz (2003), namely Entrepreneurship & Regional Development, Entrepreneurship Theory & Practice, Journal of Business Venturing, Small Business Economics and Journal of Small Business Management. An initial search in the EBSCOhost database using the terms configuration, taxonomies, typologies, gestalts, archetypes, strategic groups and generic strategies was conducted. As a next step, the following criteria were established to determine an article's inclusion: (1) More than two factors had to be examined simultaneously as otherwise universal effects or simple contingencies would have been analyzed, (2) cluster analysis and/or three-way interaction had to be applied to empirically identify firm types (Aiken & West, 1991) and (3) the focus of the study had to be put on young firms and/or SMEs. The articles found were analyzed in order to check their suitability in regard to these three criteria. As a further step, papers, which were not published in one of the five specified journals but were referred to in the resulting articles, as well as papers, which were known to the authors, were also included in the analysis if they met the three criteria. In addition, all the journals, which published one of these articles, were also integrated in the search pattern in order to initiate a snowball effect and consequently minimize the risk of ignoring any valuable studies. Since it is difficult to decide whether a case study in fact represents a firm type, there was a focus on quantitative taxonomies. Even though case studies can offer rich descriptions of firms using multiple domains, it would be difficult to achieve generalizable results.

4 Results

4.1 Characteristics of the Sample

The literature review resulted in 34 articles that met the aforementioned selection criteria. Table 1 gives an overview of the authors, the publication dates, the domains examined (P-person, S&R-structure and resources, St-strategy, E-environment), the characteristics of the samples and the industry foci of the papers as well as of the journals they were published in.

Author	Year	Domains				Sample	Sample Size	Industry (Ind.)	Journal
		P	S&R	St	E				
Bantel, K.A.	1998		X	X	X	Adolescent firms (5-12 y.)	162	Several rapidly changing tech-based ind.	JBV
Barth, H.	2003		X	X	X	Firms with <200 employees (ee)	171	Software & mechanical engineering ind.	JSBM
Beneito, P.	2002		X	X	X	Firms with >10 ee	1488	Manufacturing ind.	ERD
Birley, S., Westhead, P.	1990	X	X	X	X	Small firms	222	Multi-ind.	SMJ
Borch, O.J. et al.	1999	X	X	X	X	Small firms	660	Multi-ind.	ETP
Carter, N.M. et al.	1994			X	X	Nascent entrepreneurs	2653	Multi-ind.	SMJ
Conant, J.S. et al.	1990		X	X		Entire industry	150	American health care maintenance	SMJ
Covin, J.G. et al.	1990			X	X	Small firms (<500 ee)	103	High- & low-tech ind.	JBV
Covin, J.G. et al.	1999		X	X	X	Medium firms (>50 ee)	57	Manufacturing ind.	JBV
Dess, G.G. et al.	1995		X	X	X ⁱ⁾		32	Multi-ind.	SMJ
Frank, H. et al.	2006		X	X	X	Entire industry	85	Electrical & electronics ind.	ⁱⁱ⁾
Galbraith, C.S. et al.	2008			X	X	SMEs	44	High-tech ind.	JSBM
Gartner, W.B. et al.	1989	X	X	X	X	Startups	106	Multi-ind.	JBV
Heirman, A. et al.	2004	X	X	X	X	Research-based startups (5-12 y.)	83	High-tech ind.	JTT
Hill, S.A., Birkinshaw, J.	2008		X	X		Corporate ventures	95	Multi-ind.	JBV
Julien, P.-A., Raymond, L.	1994		X	X	X	SMEs	79	Retail ind.	ETP
Kessler, A., Hienerth, C.	2002	X	X	X	X	Startups	918	Multi-ind.	ⁱⁱⁱ⁾
Khan, A.M., Manopichetwattana, V.	1989		X	X	X	Small firms (<500 ee)	50	Manufacturing ind.	MS
Korunka, C. et al.	2003		X	X	X	Nascent entrepreneurs & startups	1169	Multi-ind.	ETP
Lafuente, A., Salas, V.	1989	X	X	X	X	50% <5 y. 50% >5 y.	360	Manufacturing, trade & service ind.	SMJ
Meijaard, J. et al.	2002		X	X	X	SMEs (<100 ee)	1411	Multi-ind.	SBE
Merz, G.R. et al.	1994		X	X	X	Small firms (>3 y.)	216	Business services, construction, wholesaling & manufacturing ind.	JSBM
Miller, N.J., Besser, T.L.	2000	X		X	X	Small firms	844	Multi-ind.	JSBM
Miller, N.J. et al.	2001	X	X	X	X	Small family businesses	384	Multi-ind.	JSBM
Mitra, R., Pingal, V.	1999	X	X	X	X	SMEs (majority <150 ee)	40	Automobile ancillaries	JSBM
Mugler, J., Kessler, A.	2004	X	X	X	X	Startups	1405	Multi-ind.	JEC

Ostgaard, T.A., Birley, S.	1994			x	x	Small (<50 ee) & young firms (2- 10 y.)	159	Manufacturing, engineering & software development ind.	JBV	
Paige, R.C., Littrell, M.A.	2002	x			x	x	Every 2nd firm in the ind.	278	Craft retail ind.	JSBM
Payne, G.T. et al.	2009		x		x	x	Service-intensive SMEs (<50 ee)	1030	Healthcare ind.	JSBM
Stearns, T.M. et al.	1995				x	x	Startups (1-6 y.)	2653	Multi-ind.	JBV
Westhead, P.	1995	x			x	x	Owner-managed firms	93	High-tech ind.	ETP
Wiklung, J., Shepherd, D.	2005						Small businesses (50% 10-19 ee; 50% 20-29 ee)	413	Knowledge- intensive manufacturing, labor-intensive manufacturing, professional services & retail ind.	JBV
				x		x				
Woo, C.Y. et al.	1991	x	x				Startups	510	Retail & personal services ind.	JBV
Yiu, D.W., Lau, C.-M.	2008				x	x	Random sample of Chinese firms	458	Multi-ind.	ETP

ⁱ⁾ Nondiversified firms and firms in which a member of the Business Advisory Board holds a seat of one of the two universities that sponsored the research

ⁱⁱ⁾ RENT XX Research in Entrepreneurship and Small Business (CD)

ⁱⁱⁱ⁾ ICSB World Conference, Puerto Rico 2002

Legend:

ERD	Entrepreneurship & Regional Development
ETP	Entrepreneurship: Theory & Practice
JBV	Journal of Business Venturing
JEC	Journal of Enterprising Culture
JSBM	Journal of Small Business Management
JTT	Journal of Technology Transfer
MS	Management Science
SBE	Small Business Economics
SMJ	Strategic Management Journal

Table 1: Review of configuration studies

In terms of outlets, nine articles (27%) were published in the *Journal of Business Venturing* and eight articles (24%) in the *Journal of Small Business Management*, which shows a propensity for configuration research in the context of young firms and SMEs in these two journals. While *Entrepreneurship Theory and Practice* as well as the *Strategic Management Journal* both published five articles (15%), which met the selection criteria, the remaining ones were released each by a different medium. Concerning the dates of publication, it can be said that during the second analyzed decade slightly more articles were published than during the first decade (41% before and 59% after the year 1999). No more than four articles were published in one single year.

A categorization of the companies, which were analyzed in the articles, turned out to be rather complex since the authors applied many different selection criteria to their samples. While some authors used the age of the firms as a criterion (e.g. Bantel, 1998; Carter et al., 1994), others applied the company size (e.g. Barth, 2003; Covin et al., 1999), whereas some

other researchers chose again different criteria (e.g. Dess et al., 1995; Westhead, 1995). Furthermore, the definitions of the sample characteristics varied widely between the articles. As table 1 shows, some papers defined small firms as enterprises with less than 500 employees, whereas others subsumed all companies with more than 30 employees as medium ones.

Analyzing the industry foci, on the one hand there were studies that included companies from a large number of different industries and on the other hand some papers focused on only a couple of or in some cases solely on one particular industry. Almost half of the papers (47%) examined less than 200 companies. From the remaining 18 papers, nine decided on a sample of 201 through 800 firms and nine on a sample of more than 800 companies.

When analyzing the results of studies, the sample size always deserves critical consideration. In strategic management research the value of the configuration approach was criticized, since many studies did not detect a link between configurations and performance indicators. Ferguson and Ketchen (1999) conducted a study to analyze the lack of findings and found that that only 8% of the 24 articles examined by them employed large enough samples to detect all important relationships. Consequently, the level of statistical power, which is determined by effect size, significance level (α) and sample size, needs to be adequate in order to discover all possible relationships between configurations and performance. Possible ways to ensure sufficient statistical power for future configurations research are to either increase the sample size, the number of configurations or the significance level (α) or to postpone the study until the effect size detection attains a sufficient level (Ferguson and Ketchen, 1999).

4.2 Variable Selection

In general, it can be said that there was a vast variety of variables applied. In order to provide a systematic overview, all variables adopted in the articles were categorized in one of the following four domains: person, structure and resources, strategy as well as environment. The domains are based on an adaption of Miller's (1987a) imperative influences on configurations. Although several articles categorized their variables in a similar way, others used different schemes or did not sort them at all. In order to ensure consistency within this review, in some cases variables were categorized differently than in the original paper. Nevertheless, it also needs to be mentioned that some factors could have been attributed to two domains.

Comparing the number of articles integrating certain domains, it appears that strategy was the domain that was researched into the most (see figure 1). Only two of the examined articles did not devote attention to strategic factors. Environmental influences were almost as extensively researched with 91% of all studies incorporating this domain. While structure and resources were discussed in 77% of the articles, not even half of the articles explicitly focused on the person. In the following part of the paper the variable selection and the underlying reasoning will be discussed for each domain in detail.

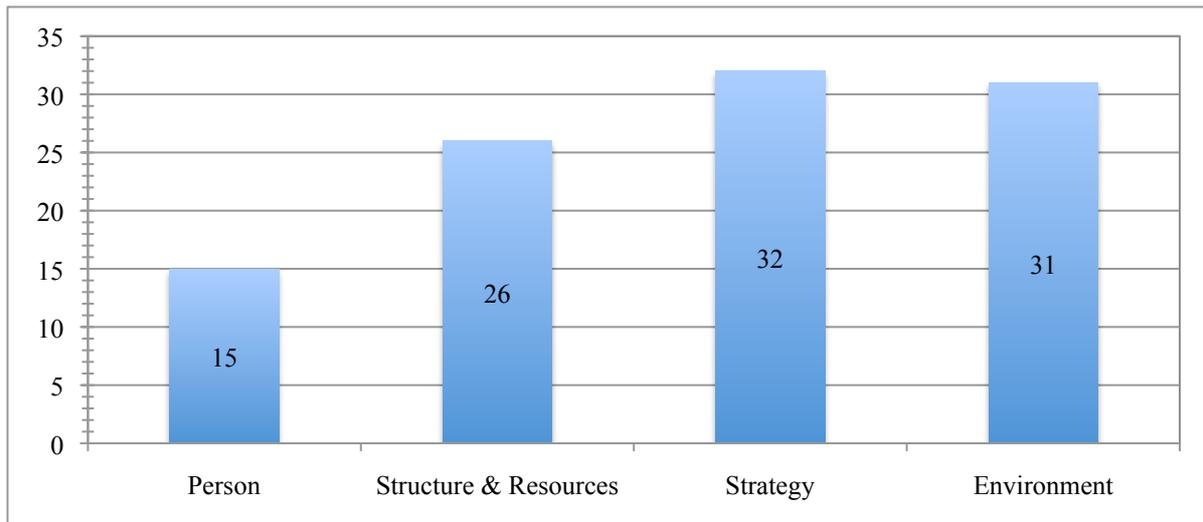


Figure 1: Number of articles analyzing the four domains

➤ *Person*

As mentioned before, “person” was the least researched domain with only 15 of the total 34 papers analyzing it (44%). Three of these articles integrated only a single or a couple of variables targeting at the personal characteristics. The remaining twelve articles applied different sets of variables, which basically can be summarized by the personal characteristics of the founder, his/her motives to found the business and the experience he/she possesses. Nevertheless, the range of variables to evaluate the *characteristics of the founder* was extensive. While education was examined most often, the interest in basic characteristics such as age, gender or marital status was limited. Other variables that were used to specify traits of the entrepreneur are need for achievement, risk-taking propensity, self-initiative or internal locus of control.

In order to probe the *motivation for setting up a company*, entrepreneurs were for example asked whether they were mainly motivated by the opportunity to satisfy their goals, to do the kind of work they always aspired, to make money or by the threat of losing their previous job or by their unwillingness to work for somebody else.

The level of entrepreneurial, managerial and industry-related *experience* of the founder can be identified as the third main group of variables that was of great interest. Kessler and Hienerth (2002), Korunka et al. (2003) as well as Mugler and Kessler (2004) used virtually the same set of personal variables, which always included need for achievement, risk-taking propensity, internal locus of control, self-initiative and motivation. The first three of these variables were chosen by the authors since a number of studies investigating the differences between entrepreneurs and non-entrepreneurs showed their crucial importance in this regard (Korunka et al. 2003). Each of these variables builds on a different theory and was measured by seven or eight items (e.g. internal locus of control – Rotter, 1966). Except for this variable set, no other one was identified to be applied repeatedly in different papers.

A reason for the comparatively low level of interest in this domain is certainly that many studies focused on relatively mature companies. Consequently, a great number of the articles placed emphasis rather on the management style adopted than on the founder of the venture. In addition to that, some of the articles analyzing new ventures examined industries in which companies are usually set up by entrepreneurial teams, which complicates the evaluation

significantly. On the contrary, the configuration studies that included this domain were analyzing startups in most cases.

➤ *Structure and Resources*

26 articles (77%) examined how the firms are structured and from which resources they can draw. The variables were allocated to administrative structure, planning and control as well as resources. The main issue about the *administrative structure* lies in the degree to which the firm implemented a centralized or decentralized structure, which was queried in many different ways. Furthermore, the standardization of products, services and processes, the specialization of people working for the firm and the use of formal communication procedures were of great interest in this domain. In addition, the way the hierarchy was set up and the degree to which work roles were defined were probed in some of the studies. The term *administrative planning* refers to all variables that are related to strategic, business and product planning, which appeared occasionally. In most cases, articles that examined the firm's planning propensity analyzed *administrative controls* (cost control, quality control etc.) at the same time. Most variables, which aimed at discovering the firm's *resources*, enquired into its financial circumstances as for example sources of capital, involvement of venture capital, total amount of money needed to set up the company, debt ratio or ratio of R&D expenditures to cost of goods sold. However, several studies also focused on non-financial resources such as manpower and the skills they possess, technology or patents. Moreover, certain variables were only found in specific studies like the importance of computing in a firm (e.g. business-, point-of-sale- or telecomputing) or the nature of the startup being an academic or corporate spin-off.

While some papers solely presented the variables applied in their study, others also discussed the reasoning underlying their choice. Although most articles created their own sets, they often referred to previous papers concerning specific variables. Examples therefore are Frank et al. (2006) as well as Wiklund and Shepherd (2005), who both measured the access to financial capital of small businesses as suggested by Robinson et al. (1991) or Merz et al. (1994) who adapted Miller and Droge's (1986) scale of measuring decentralization, specialization and formality. The great variety of the measures applied in the articles might be partly explained by the different industry foci. Researchers who for instance aimed at analyzing research-intensive startups (e.g. Beneito, 2002) of course integrated other variables than those who defined retail or service-orientated firms as their topic of research (e.g. Woo et al, 1991).

➤ *Strategy*

32 of the 34 articles analyzed in this paper examined the strategies chosen by the companies in their sample. Although the number of variables was substantial, it was possible to allocate them to three categories: the companies' entry/growth strategy, market positioning and the importance of research and development for them. In order to identify the *entry strategy*, researchers for example asked their sample if they perceive themselves as pioneers in their field or rather as followers, who strive to differentiate themselves in other ways. One article (Covin et al., 1999) explicitly focused on examining the tactical differences between pioneers and followers in two distinctive environmental settings as well as the differences in their relationship to performance. In addition to that, some articles researched the companies' definition of their target market (e.g. niche, high-end). Studies, which did not focus on startups but on existing firms, often integrated measures of the growth strategy in their questionnaires (e.g. organic vs. fast growth). Since the *competitive positioning* is one of the

most crucial factors for a successful strategy, it was analyzed by the majority of the studies. The four elements of the competitive positioning that were applied most frequently are: the company's pricing strategy, the quality of the product or service relative to competition, the marketing strategy as well as the product or service portfolio breadth. Moreover, a number of papers wanted to discover how many firms try to differentiate themselves by offering a distinctively new product, i.e. outperforming competition through innovativeness. This directly leads to the third main group that summarizes all measures related to *R&D and technology*. The focus that companies put on R&D turned out to be one of the most important issues with several articles applying different variables. For researchers it was of interest not only how innovative and/or sophisticated the companies' products are, but also what kinds of new technologies are utilized in current processes and how the process of developing new business ideas is organized. Furthermore, other opportunities to differentiate were discussed such as brand image, design, after-sales-services etc.

As with the domains discussed before, some papers partly based their variable selection on existing theories and some partly designed it on their own. Again others did not discuss the origins of the respective variables at all. However, compared to the other three dimensions, strategic variables were most often adopted from existing research papers. Miller (e.g. 1983, 1987b) was the most frequently quoted author, who published several articles in this field of research and developed a scale to measure the characteristics of strategic decision making. Several articles were also influenced by Porter's (1980, 1985) generic strategies. While on the one hand some papers directly referred to Porter in their selection, on the other hand many articles indirectly referred to him as his work served as the basis for other studies that were quoted in the articles analyzed. Another interesting observation is that only a small number of papers completely relied on one single theory.

➤ *Environment*

91% of the papers analyzed included environmental factors in their studies. Beside a broad variety of variables to probe the *basic characteristics* of the market, measures were adopted to understand the competitive situation the companies have to face, the importance of networks as well as the dynamism, hostility, munificence and heterogeneity of the environment. The industry affiliation of the companies was by far the most frequently examined factor within all studies. In this context, several articles also researched the stage of development and growth potential of the respective industry. Variables that aimed at measuring the geographic scope the companies are operating in were also commonly applied. In addition to that, a few articles included the companies' location in their questionnaires (e.g. Birley & Westhead, 1990). The competitive structure and intensity were also investigated in a multitude of papers. While some researchers focused on the number and size of the regular competitors as well as the dynamism of the situation, others examined the market share of the four biggest companies in the industry or the growth rates of the market leader.

Although in some cases (existing network, networking propensity) the *network aspect* could as well have been discussed in the domain exploring the characteristics of the founder, it was decided to place it in this domain since these variables do not necessarily relate to the founder but may also connect to the employees of the company. In addition, the overall importance of networking within the respective industry and the network structure of the company were of interest for some studies (e.g. Mugler & Kessler, 2004; Ostgaard & Birley, 1994).

In order to gather more detailed information about the firms' environment, many articles adopted Miller's (1982) scale to measure *environmental dynamism, hostility and heterogeneity*. Whereas some articles completely relied on Miller's scale, which consists of 15 items, others used only a selected number of these items and added their own ones. The need to change to keep up with the market and the competitors as well as the rate at which products or services are getting obsolete were researched extensively. Moreover, it was interesting to observe that a small number of articles exclusively focused on networking-related variables. Similar to the three already presented domains, the variables derived from a broad variety of theoretical papers. Apart from Miller (1982), who was already mentioned before, Khandwalla (1977) or Aldrich et al. (1987) are important examples in this regard.

4.3 Unexplored Factors

Although the papers analyzed in this article explored an exceptionally broad range of variables, some factors that are intensively discussed in entrepreneurship literature were not included in the configuration studies. A few of them will be briefly presented in the following section of the paper.

The *social skills* of entrepreneurs can be defined as the competencies that enable them to effectively interact with others. Social skills are assumed to play a key role in the successful launch of new ventures, wherefore they are examined by a large body of research (e.g. Segrin & Kinney, 1995; Baron & Markman, 2000). While broad social skills are obviously valuable in diverse contexts, they might be especially helpful to entrepreneurs, who usually have to establish new relationships with many different people (Baron, 2004). Baron and Markman (2000) reviewed the existing literature concerning social skills and adopted two criteria: relevance to outcomes in business settings and relevance to tasks performed by entrepreneurs. On this basis four specific social skills were identified that are especially important for entrepreneurs: (1) the ability to correctly gauge current moods, intensions, motives and personal characteristics of others, (2) impression management, which refers to skills that help to induce positive reactions in others, (3) the ability to change others' desires or attitudes in one's own favor, (4) the ability to adjust to different social situations and to feel comfortable in the company of individuals from various backgrounds (Baron & Markman, 2000).

The *decision making process* of entrepreneurs is another topic of entrepreneurship research, which was not examined in any of the analyzed articles. Sarasvathy (2001) outlines the differences between a decision making process involving causation versus one involving effectuation along a number of categories. Examples therefore are that the causation process takes effects as given and focuses on the means necessary to create these effects. In contrast, the effectuation process takes means as given and focuses on the effects that can be created with them. Furthermore, the causation process is excellent at exploiting preexisting knowledge, while the effectuation process is excellent at exploiting unexpected contingencies. In addition, the causation process focuses on the predictable aspects of an uncertain future rather than on the controllable aspects of an unpredictable future as the effectuation process does. Sarasvathy (2001) argues that both types of processes can emerge together and are constitutive parts of human reasoning. However, which one of the two decision making processes suits which entrepreneur better is an issue to be addressed by future entrepreneurship research.

Another construct that was not researched by any article is the *future expectations* of the venture. When analyzing new or small businesses, in many cases objective performance

measurements are not available. Literature suggests that subjective perceptions of organizational performance are consistent with objective indicators of performance (Dess & Robinson, 1984). Hence, surveying subjective future expectations in regard to business performance has the potential of providing valuable predictions of the actual outcome (Chandler & Hanks, 1993).

5 Conclusion

In the first part of the article the configuration approach was compared to traditional approaches and its suitability for entrepreneurship research was discussed. After concluding that the configuration approach is superior to the others in many perspectives, a literature review was conducted to discover configuration articles in the field of entrepreneurship and SMEs. By applying tight selection criteria, the research resulted in a total of 34 articles, which were then analyzed in detail. Regarding the sample size, which is vital in order to ensure sufficient statistical power that is needed to discover all possible relationships between configurations and performance, it shows that almost half of the papers examined less than 200 companies, while approximately a quarter decided on a sample of 201 through 800 firms and the remaining quarter on a sample of more than 800 companies. The main focus was put on the variables, which were incorporated in the studies. The articles were analyzed in regard to the four domains person, structure and resources, strategy as well as environment. It became obvious that a considerably high percentage of the papers examined the strategy as well as the environment of the business, while the factors concerning the founder of the venture were researched in only about 50% of the articles. Within the four domains a broad variety of factors was analyzed. The respective foci of the studies differed due to the research objectives and the examined samples. Furthermore, factors that are intensively discussed in entrepreneurship literature but were not integrated in any study were presented. It is hoped that this article provides assistance in obtaining an overview of configuration studies in the field of entrepreneurship and SMEs. By presenting variables, which were applied in configuration studies over the past 20 years, hopefully an auxiliary basis for the variable selection can be provided for scholars planning to conduct research in this field.

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