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Michael Graubner

Task, Firm Size, and Organizational Structure in Management Consulting

An Empirical Analysis from a
Contingency Perspective



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Michael Graubner

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Contingency Perspective

With a foreword by Prof. Dr. Jean-Paul Thommen
and Prof. Ansgar Richter, PhD

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To my parents

Jürgen Graubner (1944 – 2003)

Barbara Graubner (1947 – 2002)

Foreword

The management consulting industry has grown into a sizeable economic sector and employment market in the outgoing 20th century. Globally operating management consulting firms, with thousands of consultants, have emerged. They coexist alongside many small consultancies and single practitioners. As a result, a remarkable diversity in the organizational structure of management consulting firms has developed. Organizational structure is of utmost importance for consultancies as it directly impacts their business and employment models. Yet, little scientific explanation has been offered so far on the factors accounting for the diversity of organizational structure in management consulting.

Michael Graubner explores this contemporary topic. His research is guided by the contingency theory of organizations, one of the classical organization theory schools of thought that has been traditionally applied to investigate organizational structure in manufacturing, banking, and the public sector. The author thoroughly reviews the different aspects of contingency theory – contingency factors, constructs of organizational structure, the concept of fit between contingencies and structure, organic vs. bureaucratic theory – and reflects on them in the light of other organization theory schools of thought. Building on Lex Donaldson's 'parsimonious model' of contingency theory, he develops seven research hypotheses on the relationships between organizational size and task uncertainty as contingency factors and structural differentiation, specialization, centralization, and formalization as constructs of organizational structure. The author tests the hypotheses empirically with qualitative and quantitative data, mostly obtained during a series of personal interviews in large and medium-sized management consulting firms with offices located in Germany, Austria, and Switzerland.

The exploratory, NVivo software-supported analysis of the data pinpoints a number of measures with considerable differences between firms regarding the task uncertainty inherent in the services they provide and the way

they are structured. In the deductive part of the research, organizational size and to a lesser degree task uncertainty are found to be closely associated with the organizational structure of management consultancies. Positive relationships are identified between size and structural differentiation, task uncertainty and specialization, and between size and formalization. A negative association is discovered between consultancies' size and their degree of centralization of decision-making. Overall, the findings uphold classical contingency theory of organizations rather than the 'parsimonious model'.

Michael Graubner's work contributes to the advancement of the contingency theory of organizations. He uses this well-established theory to study organizational structure in management consulting and thereby expands its application range beyond traditional industries. In addition, he empirically tests Donaldson's recent modification of structural contingency theory and rejects it in support of the theory's classical premises.

The author investigates a current and vital, yet under-researched phenomenon. While there has been a growing academic interest in professional service firms in recent years, comparatively little attention has been paid to the organization of these firms. Few researches, including a group of institutional theorists around Hinings, Brock, and Powell, have addressed organizational topics in the professional services. Their predominant focus, however has been on large accounting and law firms. The degree to which the findings can be transferred to other professional service industries remains unclear. Michael Graubner examines management consulting firms and therefore provides a substantial contribution to the body of knowledge on the organization of professional service firms in general and management consultancies in particular.

Prof. Dr. Jean-Paul Thommen

Prof. Ansgar Richter, PhD

Acknowledgements

This dissertation is an integral part of the management consulting research carried out at the European Business School (ebs) under the leadership of Prof. Dr. Jean-Paul Thommen and Prof. Ansgar Richter, PhD. Both have supervised my work, provided guidance, and counseled me whilst I conducted my research. They have created a highly stimulating and supportive working environment. I am deeply grateful to them.

I would like to thank all members of the Department of Management and Leadership who have in different ways contributed to my research. I owe much to Dr. Sandra Niewiem and Dr. Katrin Schröder, who have in parallel analyzed the management consulting industry, as well as to Dr. Robert Urlichs. It has been a genuine pleasure working in this team of exceptional people. I am indebted to Linda Albrecht, Dr. Markus Gmür, Dr. Daniela Peterhoff, Dr. Sascha Schmidt, and Dr. Denise Sumpf for their cooperation, support, and insightful discussions. In particular I would like to mention Prof. Dr. Ulrich Grimm who was kind enough to act as co-supervisor for this dissertation.

I am thankful to the ebs as a truly distinct academic institution and the ebs community, which I very much enjoyed belonging to. I highly appreciate the openness and time commitment of my interview partners from more than 30 consulting firms who have shared their experiences and insights. Without their contributions, this research project would not have been possible. I am indebted to Allison Burlew for her thoroughness and patience while correcting my English. Finally, I would like to thank my dear family and friends for their ongoing encouragement, personal advice, and love throughout recent years.

Michael Graubner

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Abbreviations

AG	Aktiengesellschaft (public company)
ASCO	Association of Management Consultants Switzerland
BDU	Bundesverband Deutscher Unternehmensberater (Federal Association of German Management Consultants)
CA	California
CEO	Chief Executive Officer
e.....	estimate
FEACO.....	European Federation of Management Consulting Associations
GDP.....	Gross domestic product
GmbH	Gesellschaft mit beschränkter Haftung (limited liability company)
HR	Human resources
ICMCI	International Council of Management Consulting Institutes
IL.....	Illinois
IPO.....	Initial public offering
MA.....	Massachusetts
MPB.....	Managerial professional business
NJ.....	New Jersey
NH.....	New Hampshire
PSF.....	Professional service firm
P ²	Professional partnership
QDA	Qualitative data analysis
R&D.....	Research and development
VDA	Verband der Automobilindustrie (Association of the Automotive Industry)

1 Introduction

1.1 Background

1.1.1 *The management consulting industry as an economic sector and employment market*

Management consulting is a professional service that is concerned with “the rendering of independent advice and assistance about the process of management” (ICMCI, 2002).¹ It comprises consulting in various management areas including finance, human resources, information technology, marketing, operations, organization, and strategy (e.g., Alpha Publications, 2002: 6-7; FEACO, 2004: 8; Kennedy, 2003a: 13-14; Kubr, 2002: 261-604). Like for other professional services such as auditing, commercial law, executive search, investment banking, and tax advisory, the economic good exchanged is a highly customized service – not a physical product – and is provided by trained professionals (Greiner & Metzger, 1983: 7; Haywood-Farmer & Stuart, 1990: 337; Lowendahl, 2000: 18-23; Morgan & Quack, 2004: 1). With the rise of the service economy at the outgoing industrial age, the industry that provides consulting services has developed into a sizeable economic sector and employment market (Ringlstetter et al., 2004a: 9-10; Thommen & Richter, 2004: 5).

Management consulting is a rather young industry. Its development can be traced back to the early decades of the 20th century (Kipping, 2002: 29-32;

¹ The terms ‘consulting’ and ‘consultant’ have been used with a variety of meanings (Biswas & Twitchell, 2002: 6; Day, 2004: 27; von Keller & Lorentz, 1999: 349-351; Ziegler, 1995). There are also numerous notions of ‘management consulting’ that vary, for example, with culture and language (Hofmann et al., 1991: 3; Kipping & Armbrüster, 1999: 3; Kubr, 2002: 3-10; Wohlgemuth, 1995: 17). ‘Management consulting’ and ‘consulting’ are used interchangeably in this thesis to refer to the professional service mostly provided for a fee to managers of different types of organizations as defined by the International Council of Management Consulting Institutes (ICMCI).

Wilkinson, 1994: 1.9-1.12).² Established around the same time as the automotive sector, consulting remained a relatively small and unimportant niche for most of its existence. As late as 1980, the industry was still in its infancy with only USD 3 billion global revenues (Kennedy, 2003b: 55; Payne, 1986: 44), while automotive accounted for an estimated USD 780 billion at that time (VDA, 1999: 16, 193; Womack et al., 1990: 12, 44, 204).

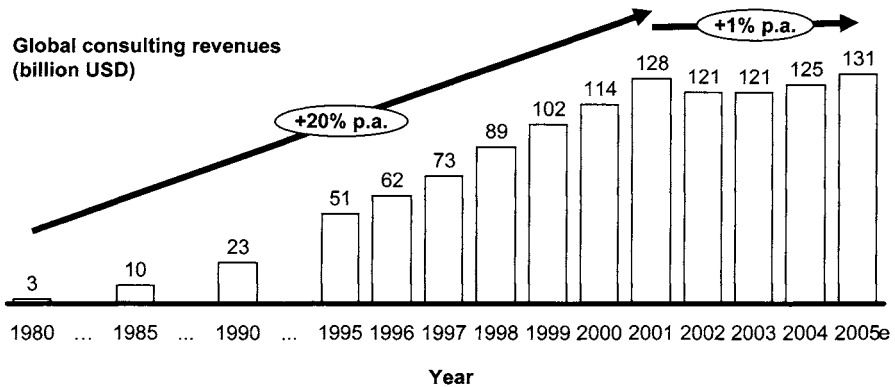


Figure 1: Global management consulting revenues 1980-2005e (based on Kennedy, 2003b: 55, 59; 2004: 23, 54; Payne, 1986: 44)

Since then, consulting has experienced an impressive expansion in both revenues and employment figures. Global consulting revenues increased at an annual average of 20 percent to USD 128 billion in 2001 (Figure 1). Between 1990 and 2000 alone, the size of the market quintupled. In parallel, consulting's share of GDP rose to a 2001 peak of 0.70 percent in the U.S. (FEACO, 2002: 9)

² The names of most of the early players in the industry who were mainly concerned with their clients' operational efficiency such as British Bedaux, Production Engineering, and Urwick Orr have disappeared (Ferguson, 2002: 259; Kipping, 2002: 31-32). Some of the firms that are well-known today entered the consulting field in the years between the World Wars including Arthur D. Little, started in Boston in 1886 as a provider of technical services (Kahn jr., 1986: 20-21; Rassam & Oates, 1991: 141), Edwin Booz & Company – today Booz Allen Hamilton – which was established as a business research firm in Chicago in 1914 (Galunic & Weeks, 1999: 1; Rassam & Oates, 1991: 86), and McKinsey, founded in Chicago in 1926 (Bhide, 1994: 3-4; Sweeney, 2003: 3).

and 0.44 percent in Europe (FEACO, 2004: 6), where together more than 90 percent of today's global consulting revenues are generated (Kennedy, 2004: 61, 73). The growth has tapered off in recent years but is currently regaining momentum with many consultancies expecting double-digit growth in 2005 (Kennedy, 2005a; 2005b).

With the growth of the consulting industry, its relevance as an employment market has increased as well. There were only 18,000 practicing consultants worldwide in 1980 (Canbäck, 1998: 4; Onsmann, 1999). As few as five consulting firms employed more than 1,000 consultants (Canbäck, 1998: 5; Ernst & Kieser, 2002: 47; Onsmann, 1999). After the turn of the century, the total number of management consultants was estimated to be in the range of 650,000 to 750,000 (Kubr, 2002: 35), while the corresponding figure for Europe was at 300,000 (FEACO, 2004: 6). The surge in employment together with the high labor turnover rate in the industry (Becker & Schade, 1995: 350; Maister, 1982: 23; Morrell & Simonetto, 1999: 55) created a permanent need for new consultants thereby contributing to the phenomenon that became known as 'war for talent' in the late 1990s (Axelrod et al., 2001; Michaels et al., 2001).

In addition to its sheer size, the consulting industry serves as an increasingly important entrance point into formal employment relationships for high-caliber university graduates (Canbäck, 1999: 11; Engwall & Kipping, 2002: 6; Rassam & Oates, 1991: 8-9; Ruef, 2002: 79; Thommen & Richter, 2004: 5). Consulting firms thus shape the perspectives, expectations, and skills of today's young consultants and tomorrow's business leaders at a critical phase in their lives. Through their alumni and their business relationships (Banze, 2004; Gladwell, 2002), but also as a major creator and disseminator of management knowledge (Becker & Schade, 1995: 330; Blunson, 2002: 2-6; Nippa & Petzold, 2002: 3; Payne, 1986: 43, 49-53; Payne & Lumsden, 1987: 53-54), consulting firms exert direct influence in many societal areas (Ernst & Kieser, 2002: 53-61; Faust, 2000: 60; Lorsch & Tierney, 2002: 16; Wohlgemuth, 2000: 7-17). Overall, the consulting industry has been a very dynamic economic sector and employment market that has grown to high importance for the Western economies.

1.1.2 *Organizational diversity of management consulting firms*

“The management consulting field today is extremely diverse” noted Payne (1986: 44) with regard to types of consulting firms in the mid-1980s. The diversity has increased further during the expansion and recent stagnation of the industry outlined in section 1.1.1. Today, large firms such as Accenture, BearingPoint, and Cap Gemini with tens of thousands of consultants and USD revenues in the billions (Kennedy, 2004: 150, 158; Ringlstetter et al., 2004a: 9) exist alongside small firms and single practitioners (BDU, 2004: 8; Becker & Schade, 1995: 327). In fact, most consultancies are rather small as indicated by the 2003 European average firm size of 5.3 consultants (FEACO, 2004: 4).

Another important difference between consulting firms is their ownership structure (Frigo & Litman, 2004; Greenwood & Empson, 2003; Schröder, 2005). Many of them have become publicly traded companies (Kubr, 2002: 766; Lorsch & Tierney, 2002: 30), Accenture with its 2001 IPO being a prime example (Lerner, 2003: 138; Rodenhauser, 2003a), while others have merely pondered this idea like The Boston Consulting Group in 2000 (Armstrong, 2000). Some consultancies such as Roland Berger in 1998 have returned to private ownership after a management buy-out (Lerner, 2003: 119). Still others including McKinsey have always been privately held with ownership distributed only among their most seasoned employees (Edersheim, 2004: 110-115), often called partners (section 3.3.2.2). A number of consultancies are business units of larger non-consulting corporations (Gushurst & Deinlein, 2004: 146-147; Lerner, 2003). Examples include Mercer Management Consulting which is part of Marsh & McLennon (Lerner, 2003: 88), A.T. Kearney being owned by EDS (Lerner, 2003: 100-104; von Keller & Lorentz, 1999: 356-357), and the former consulting arm of PricewaterhouseCoopers that was acquired by IBM in 2002 (Landriscina, 2002: 3; Lerner, 2003: 165-166). There are also a number of in-house consultancies, for example, at DaimlerChrysler and Siemens (Glückler & Armbrüster, 2003: 273; Klein, 2002: 93-112) whose services are primarily offered within their parent companies and are therefore not widely available in the marketplace (section 3.4.1).

Alongside these differences, substantial diversity has also evolved with regard to more internal aspects of organizational design, often referred to as organizational structure. Organizational structure is discussed in detail in section 2.3.3. Consulting firms vary in their average span of control, the number of levels in the hierarchy, the existence of support units, the distribution of decision-making authority, the degree to which knowledge management is formalized, the existence of distinct industry practices, and many other dimensions (sections 3.3.2 through 3.3.5). Such aspects may not be very obvious to the public but they have considerable implications on the overall functioning of a consultancy. For example, the ratio of partners to non-partners as a measure of span of control may be as low as 1 to 4 such as with PRTM (Landriscina, 2002), while it has grown to 1 to 100 in some firms during the boom years around the turn of the century (Lechner et al., 2005: 7). The ratio has fundamental consequences on firm profitability, promotion opportunities, and the extent to which young consultants learn under the tutelage of seniors in an 'apprenticeship system' (Deelmann & Petmecky, 2004: 187; Graubner & Richter, 2003: 47-49; Hocquet, 2003: 4-6; Maister, 1982: 17-22; 1997a: 6-20). In fact, learning opportunities and the prospect to attain partner status, two of the highest ranked incentives to pursue a career in professional services (Empson, 1999: 6; Greenwood & Empson, 2003: 918; Lechner et al., 2005: 8; Maister, 1997a: 6), directly hinge on the partner-to-non-partner ratio.

As indicated by these recent examples, many of the structural transformations in the management consulting industry have developed since its growth has leveled off (Figure 1). The traditional, pyramid-shaped hierarchies of consulting firms (Figure 14) have come under pressure (Hocquet, 2003: 4; Lechner et al., 2005: 7-8) as have the associated business and employment models (Graubner & Richter, 2003; 2004; Wohlgemuth, 2003). It has even been argued that the pyramid should be flipped altogether to have more senior than junior capacity available for client service (e.g., Rodenhauser, 2003b).

1.1.3 *Literature on the organizational design of management consulting firms*

The early publications on management consulting were for the most part concerned with the role of consultants and the services they provide (e.g., Ganesh, 1978; Steele, 1969; Tichy, 1974; Tilles, 1961; Wittreich, 1966a; 1966b). Starting in the early 1980s, there has been an increasing number of contributions on organizational topics.³ Most notably in recent years, the organizational effects of the stagnation in consulting revenues (Figure 1) have been reported. They include overcapacities in consulting staff (e.g., Anonymous, 2001; Wohlgemuth, 2003), large-scale layoffs (e.g., Landriscina, 2002: 8; Rodenhauer, 2003c; Warner, 2003: 117), offshoring (e.g., Armour & Kessler, 2003; Filkins, 2000), and firm bankruptcies – notably that of Arthur D. Little in 2002 (e.g., Thayer, 2002; Wimmer et al., 2003: 62). In addition, the role of consulting firms and their organizational entanglement with other businesses has been critically reviewed (e.g., Akst, 1999; Baxter, 1996; Gladwell, 2002; Höselbarth et al., 2000; O'Shea & Madigan, 1997; Pinault, 2000).

Organizational topics in the professional services in general and in management consulting in particular have not only been addressed in the popular press. In addition to the vociferousness of the public debate, there has been considerable interest in the academic community as well (e.g., Alvesson, 1995: 83-157; Brock et al., 1999b; Cooper et al., 1998; Czerniawska, 2004; Dougherty, 2004; Faust, 2000; Golden et al., 2000; Greenwood, 2000; Haas & Hansen, 2005; Levin & Tadelis, 2005; Lorsch & Mathias, 1987; Lowendahl, 2000: 95-160; Maister, 1985; 2001; Payne & Lumsden, 1987; Pinnington & Morris, 2003; Schrädler, 1996; Stutz, 1988; Wallace, 1995a; 1995b).⁴

³ Earlier publications that were concerned with the design of professional service firms typically excluded management consulting firms (e.g., Bucher & Stelling, 1969: 3-4; Hall, 1968: 96; Montagna, 1968: 139).

⁴ Many authors cited in this dissertation address not only management consulting but the professional services in general with management consulting being a prime example. Some of them predominantly use examples from other professions such as those listed section 1.1.1.

Some scholars have named factors that might influence the design of management consulting firms including their organizational structure. Hence, they have addressed the organizational diversity outlined in section 1.1.2. The collection of proposed factors – being neither mutually exclusive nor collectively exhaustive – comprises:

- client interface (e.g., Aharoni, 1999: 36; Greenwood & Empson, 2003: 919-922; Mills et al., 1983: 120; Morgan & Quack, 2004: 7; Nachum, 1999: 43)
- environmental context including the output market (e.g., Becker & Schade, 1995: 327; Gray & Clegg, 2004: 6-9; Greenwood & Lachman, 1996: 567-570; Morgan & Quack, 2004: 7; Teece, 2003: 896-897, 900)
- firm size (e.g., Aharoni, 1999: 36; Greenwood & Empson, 2003: 921-923; Lorsch & Tierney, 2002: 121-122, 136-137; Skaggs & Huffman, 2003: 779)
- knowledge base (e.g., Morris & Empson, 1998: 610-615, 621)
- nature of the services (e.g., Aharoni, 1999: 36; Becker & Schade, 1995: 327; Deelmann & Petmecky, 2004: 185; Greenwood & Empson, 2003: 923-925; Maister, 1982: 16-17, 26; 1997a: 4-5; Nachum, 1999: 43; Teece, 2003: 900-908)
- power and politics of particular firms (e.g., Morgan & Quack, 2004: 7)
- professionals as employees (e.g., Greenwood & Empson, 2003: 919; Greenwood & Hinings, 1994: 252).

The academic interest in management consulting evolved mainly during the 1990s (Armbrüster & Kieser, 2001: 689-690; Becker & Schade, 1995: 327; Glückler & Armbrüster, 2003: 269). Contributing to the long-term neglect of the industry might have been the limited availability of appropriate data (Kipping & Armbrüster, 1999: 11-15, 28, 32 ; Wohlgemuth, 2000: 6-7). Consulting firms, many of which are privately held and therefore are not required to publish results (Anonymous, 2004), have historically revealed little information about themselves (Payne, 1986: 45; Payne & Lumsden, 1987: 55). Even today, there seem to be comparatively few publications on the organizational structure of

consultancies. As late as 2003, Zaugg (2003: 11) in his review of organization research stated that “it has concentrated on industry and the financial sector. The service sector has many interesting areas to be investigated in more detail. Examples include ... consulting firms.” Likewise, Teece (2003: 899) observed that “much of the theory in this area has been done, at least in economics, with the industrial enterprise in mind. The degree to which this literature is fully applicable to professional service firms is not clear.” Lorsch & Tierney (2002: 16) concluded that “professionals and their firms ... may be the most powerful and unexplored source of value ... in modern business.”

1.2 Research question

The previous sections have argued that the dramatic expansion and recent stagnation of the management consulting industry have left their imprint on the way consulting firms are organized. In particular, consultancies' internal, firm-level⁵ organizational structures exhibit remarkable diversity. Organizational structure is of utmost importance in consulting firms as it has far reaching implications on their overall business model. Yet, professional service firms (PSFs) such as management consultancies have been outside the focus of organization theory research. Little scientific explanation has been offered to date for the phenomenon of diversity in organizational structure of management consulting firms. Mostly based on casual evidence, a number of different factors have been proposed to influence and shape their organizational design and structure. As Lowendahl (2000: 100) noted in her dissertation about PSFs “there are no general ... answers ... to organization structure and more

⁵ This thesis is primarily concerned with organizational characteristics at the level of the consulting firm, or more precisely at the level of the office being the unit of analysis (section 1.3.3). It does not address macro-level aspects such as networks of professional service firms (e.g., Richter et al., 2005b: 6-7) or their merger activities (e.g., Greenwood et al., 1993). It is also not concerned with micro-level aspects such as the design of job positions or the way in which organizational factors influence job commitment of professionals (e.g., Aranya et al., 1982; Lachman & Aranya, 1986).

research is both needed and under way, designed to understand better the underlying mechanisms driving division of labor, underdelegation, allocation of authority and responsibility, and coordination". This thesis therefore investigates:

Which factors account for the diversity in the organizational structure of management consulting firms?

By analyzing this question, this thesis strives to fill in some of the blanks in organization theory for the professional services field. It helps practitioners and scholars with an interest in management consulting to better understand an important contemporary phenomenon and to answer related questions such as: Why do fundamentally different organizational models co-exist in today's consulting landscape? How can they persist assuming that inefficiencies are punished by market forces and sub-optimal models will vanish over time? Do consultancies need to change or adapt their organizational structure in order to prevail?

1.3 Research design

1.3.1 Contingency theory of organizations as guiding theory

Organization theory, as the academic field that is concerned with the structure of organizations⁶, comprises a number of different schools of thought (section 2.2). One of the classical theories and a useful approach to analyze and explain the structure of organizations is the contingency theory of organizations (Carroll, 1993: 243; Greenwood & Empson, 2003: 909; Hickson et al., 1988: 7).

Broadly speaking, contingency theory argues that organizational structure needs to be adapted to the values of contingency factors such as environ-

⁶ The term 'organization' is used in the following to refer to a social entity (section 2.2).

mental uncertainty, business strategy, and technology (section 2.3.1). The many contingency factors can be subsumed under the organizational size and the task contingency, with the latter being composed of task uncertainty and task interdependence (section 2.3.2). Donaldson (2001a: 95-98) provided a parsimonious model of the theory that integrates the contingencies of size, task uncertainty, and task interdependence together with several constructs of organizational structure such as structural differentiation, specialization, centralization, and formalization (Figure 11).⁷

This thesis investigates the diversity in the organizational structure of management consulting firms. This research question is at the heart of the contingency theory of organizations which has been one of the most applied organization theories throughout the last decades (section 2.2). The theory is argued to be “an older approach but one that enjoys a greater degree of theoretical coherence and empirical validity than the newer theories” (Donaldson, 1995: xii). As noted for organization theory in general (section 1.1.3), contingency theory, too, has been mostly applied in research studies about manufacturing (e.g., Lee & Miller, 1996), banking (e.g., Pennings, 1987), and public institutions (e.g., Jarley et al., 1997). Little contingency theory research has been conducted in the professional services including management consulting.⁸

This thesis is concerned with a phenomenon in the highly dynamic environment of the management consulting industry (section 1.1.1). Moreover, organization theory is a field with little consensus about research paradigms, theoretical concepts, and methodological approaches (Hickson et al., 1988;

⁷ This thesis distinguishes ‘constructs’ of organizational structure (e.g., specialization, centralization, and formalization) and ‘contingency factors’ (e.g., organizational size, task uncertainty, and task interdependence). Both are theoretical ‘concepts’ that need to be operationalized by ‘measures’ (e.g., type of client contract for formalization, number of employees for size) for empirical analysis (sections 3.1 and 3.3).

⁸ Lowendahl et al. (2001) implicitly used a contingency approach with task uncertainty and task interdependence as determinants of knowledge management in professional service firms. Hitt et al. (2001) investigated the effects of human capital on strategy and firm performance. Both publications drew upon the resource-based view of strategy. Young et al. (2001) applied contingency theory to study medical care services.

Mone & McKinley, 1993; Pfeffer, 1993: 607-608, 616; Scherer, 2002: 2; Zaugg, 2003: 8, 10). Under these circumstances it appears advisable to rely on an established theoretical foundation. In summary, the contingency theory is chosen as guiding theory of this thesis as it is a well-established theory that has rarely been applied in the professional service sector and is closely related to the research question.

1.3.2 Research approach

The parsimonious model of contingency theory is used to derive hypotheses about the determinants of organizational structure. The hypotheses describe the relationships between organizational size and task uncertainty as the contingency factors on the one hand and structural differentiation, specialization, centralization, and formalization as the structural constructs on the other (section 2.7). They are generic in the sense that they do not relate to any particular type of organization. This thesis empirically tests the hypotheses in the context of management consulting.

As outlined in detail in Chapter 3, the measures of the task uncertainty contingency and the structural constructs cannot be adopted from previous research studies. They can also not be specified completely before data collection. Therefore a qualitative research methodology is chosen for the operationalization of these theoretical concepts. Primary qualitative data are collected during a series of personal interviews with representatives from a sample of consulting firms (sections 3.4.1 and 3.4.2). The interviews are tape-recorded and transcribed. The interview transcriptions are manually coded and analyzed with qualitative data analysis (QDA) software NVivo (section 3.5). Finally, the qualitative data are used together with quantitative size data to test the theory-derived hypotheses. The consulting firms' values for task uncertainty, organizational size, structural differentiation, specialization, centralization, and formalization provide the basis to plot scattergrams, to compute cor-

relation and regression coefficients, and to perform significance tests on the regressions (section 3.7).

The research approach is deductive as it statistically tests theory-based hypotheses. With the exploration of the measures of several theoretical concepts, it also has a substantial inductive part. While the former is considered to be the domain of quantitative research, the latter is often associated with qualitative research (Brüsemeister, 2000: 30-33; Gibbs, 2002: 4, 8; Mayer, 2002: 23; Mayring, 2002: 12; Neuman, 2000: 122-123; Seibold, 2002: 3-4). Therefore, the research design integrates elements rooted in both the qualitative and the quantitative research tradition. It transcends the somewhat artificial distinction between qualitative and quantitative investigations (section 3.1).

The combination of qualitative and quantitative methods has been widely advocated (e.g., Bortz & Döring, 2002: 306; Brüsemeister, 2000: 41-44; Gibbs, 2002: 9; King et al., 1994: 5; Mayer, 2002: 25; Neuman, 2000: 17). It has also been rewarded, for example, by the Academy of Management Journal (Rynes & Gephart, 2004: 454). Different forms of combining qualitative and quantitative research methods have proven beneficial in fields such as decision-making (e.g., McNamara & Bromiley, 1997; Urlichs, 2005), organizational behavior (e.g., Sutton & Rafaeli, 1988), social change (e.g., Herlyn & Bertels, 1994; Welsh, 2002), and strategic management (e.g., Markoczy, 2001; Schmidt, 2005). The approach has been used for organization theory research in the accounting industry (e.g., Greenwood et al., 1990: 737-741) and is now applied to study management consulting firms.

1.3.3 Unit of analysis

The research question states that this thesis investigates consulting firms (section 1.2). It has also been argued that there is an organizational diversity in the management consulting industry with some consultancies being independent companies whereas others are business units of larger, non-consulting cor-

porations (section 1.1.2). Therefore, what is meant by a 'consulting firm' requires clarification.

The unit of analysis⁹ of this thesis is the geographical consulting entity that is often labeled as 'office' or 'office complex'. In general, geography is the dominating dimension of structure in consultancies and other PSFs ahead of industry and functional practices (Greenwood et al., 1990: 731; Maister, 1997a: 345-346). A geographical office is a distinct administrative unit, typically under single leadership. It can have multiple locations within a particular country or region, e.g., the Italian office or the Scandinavian office. An office is often identical to a legal entity.¹⁰ Offices may be relatively independent in some consultancies and have little in common except the same brand name. The focus of consulting services and the organizational structure may vary among offices in these cases. Even in comparatively homogeneous 'one-firm firms'¹¹, an office is a distinct unit that can clearly be separated from the rest of the organization.

The definition of the unit of analysis excludes organizational units which do not provide consulting services, for example, other business units of larger, non-consulting corporations (section 1.1.2). It also excludes the units of multi-disciplinary advisory firms that offer other professional services such as

⁹ In reflection of the work of Amonn (1927: 21-24) some German authors distinguish between the 'unit of experience' (Erfahrungsobjekt) – the particular institution or organizational unit under investigation – and the 'unit of cognition' (Erkenntnisobjekt) – the aspect of the unit of experience which is the focus of the research (e.g., Sachs & Hauser, 2002: 32; Thommen, 2002: 121-123). The first can be considered to be identical to the 'unit of analysis' as defined here whereas the latter in this research encompasses the relationships between the contingency factors and the constructs of organizational design.

¹⁰ For example, the German offices of Accenture, A.T. Kearney, BearingPoint, Booz Allen Hamilton, Mercer Management Consulting, and The Boston Consulting Group are German GmbHs, whereas Bain's and McKinsey's German office are each part of a legal entity incorporated in the U.S. (Lünendonk, 2004a: 9-10; 2004b: 10-11).

¹¹ The term is used by David Maister (1985; 1997a: 303-319) to describe professional service firms that undertake great efforts to unify their strategies, structures, systems, and processes throughout their entire, often international organization. Examples of these firms include Goldman Sachs in investment banking, McKinsey in management consulting, Latham & Watkins in law, and the former Arthur Andersen in accounting.

accounting, market research, or tax advisory (Gushurst & Deinlein, 2004: 147; Rose & Hinings, 1999; Zillessen, 2004).

In the majority of consulting firms, namely those that are rather small (section 1.1.2) and operate mostly on a regional or national basis, an office and hence the unit of analysis is identical to an entire company. Therefore, the terms 'consulting firm' and 'consultancy' are used in the following to refer to the unit of analysis.

1.3.4 The research design in the context of philosophy of science

This thesis tests hypotheses about the relationships between contingency factors and constructs of organizational structure that are derived from the contingency theory of organizations. The measures of the task uncertainty contingency and the structural constructs are based on the exploration of primary qualitative data. The research design is distinctive in the sense that it is comprised of both deductive and inductive parts (section 1.3.2). In addition, the study of organizations has been a "contested terrain" (Reed, 1996: 46) with regard to research approaches since it expanded beyond the ideas of Max Weber (Burrell, 1996: 642-651; Mardsen & Townley, 1996: 663-672). The research design shall therefore be discussed in the light of the meta-theoretical paradigms of philosophy of science.

The fundamental differences in the beliefs on how science creates knowledge are reflected in a number of research paradigms. A paradigm may be defined as an interpretative framework of thinking or a "net that contains the researcher's epistemological, ontological, and methodological premises" (Denzin & Lincoln, 2000b: 19). Broadly speaking, epistemology is concerned with the nature, sources, and processes of knowledge such as the relationship between the inquirer and the known (Baptiste, 2001: 6; Denzin & Lincoln, 2000a: 157). For example, does the inquirer influence what becomes known? Can the inquirer attain the status of a pure observer – neither affecting nor being

affected by what he or she observes? In contrast, ontology deals with the question of what is real (Baptiste, 2001: 5; Denzin & Lincoln, 2000a: 157; Gibbs, 2002: 4-6). It is characterized by the dualism of realism and nominalism. Realist ontology holds that the world has an existence independent of humans. While this statement might seem not contentious – perhaps only at first sight – for items one can touch or feel, it is less so for things like moral, law, communication, and social institutions. A nominalist ontology, on the other hand, claims that the world consists merely of representations created through human cognition.

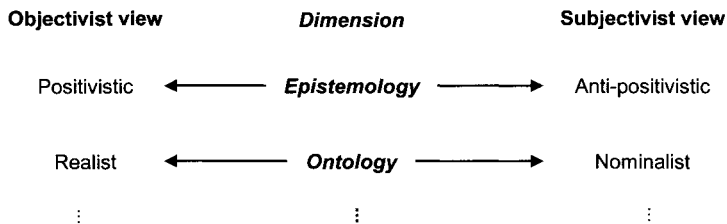


Figure 2: Objectivist and subjectivist view of social science (based on Burrell, 1996: 650; Lincoln & Guba, 2000: 168)

Figure 2 displays the positions of the objectivist and the subjectivist view of social science with regard to epistemology and ontology. Based on these two and several other dimensions, a number of paradigms, also termed “research traditions” (Rynes & Gephart, 2004: 456) or “approaches to science” (Neuman, 2000: 63) have evolved. Major social science paradigms include positivism/postpositivism, interpretivism/constructivism, critical theory, feminism, poststructuralism, and postmodernism (Denzin & Lincoln, 2000b: 19-21; Gephart, 1999; Lincoln & Guba, 2000: 164-167; Neuman, 2000: 63-88; Schülein & Reitze, 2002: 97-187; Weik & Lang, 2001: 1-152; 2003: 1-151).

From these paradigms, this research design is most closely related to *postpositivism*. Postpositivism is a revised form of positivism, on which most of the research in the natural sciences is based (Neuman, 2000: 64; Novy & Jäger,

2003). It adopts an objectivist view of science being “blind to epistemological differences” (Ryan & Bernard, 2000: 769). It also relies on a realist ontology. Postpositivism holds that reality can be known, however, only probabilistically but not deterministically as argued by positivism. The testing of hypotheses for falsification – not verification – is the task of research according to the postpositivist paradigm. This statement is at the core of the deductive part of the research design being concerned with the testing of theory-based hypotheses. As a result, this thesis is predominantly guided by the realist ontology of the postpositivist paradigm.¹² In addition, a postpositivist perspective is inherent in the situational determinism proposed by the contingency theory of organizations (section 2.6.1).

The research design, having a major inductive part, is also related to the subjectivist view of *interpretivism*. The interpretivist paradigm is concerned with the understanding of social members’ definition of a situation. The research design follows an interpretivist epistemology in the sense that the inquirer, the interviewees, and the knowledge derived from interviews interact and shape one another.

Traditionally, quantitative, deductive research has been associated with (post)positivism, whereas qualitative, inductive research has been related to interpretivism (Baptiste, 2001: 10; Cupchik, 2001: 1-2; Heinze, 2001: 16-20; Mayer, 2002: 21-25; Neuman, 2000: 122; Novy & Jäger, 2003; Seibold, 2002: 4). The relationships are not exclusive, as a number of scholars have pointed out. For example, qualitative, inductive research can very well be realist (Novy & Jäger, 2003; Rynes & Gephart, 2004: 456; Van Maanen, 1988: 45). Moreover, Cupchik (2001) argued in favor of a perspective that he termed “constructivist realism”. The philosophers of science Lincoln & Guba (2000: 164) observed that “the various paradigms are beginning to ‘interbreed’ such that two theorists

¹² The research tests theory and is therefore deductive in the sense of ‘deductive-theory critical research’ but not ‘deductive-dogmatic research’ which assumes theoretical propositions as to be correct and seeks to explicate rather than to falsify them (Eberhard, 1999: 29-32, 36-46).

previously thought to be in irreconcilable conflict may now appear ... to be informing one another's arguments." Similarly, Neuman (2000: 84) reflected that "most researchers operate primarily within one approach, but many also combine elements from the others." These arguments hold true for this research study as well.

1.4 Objectives and results

The objective of this thesis is twofold. As stated by the research question, the factors that shape the organizational structure of management consulting firms are analyzed (section 1.2). This research study thereby strives to shed light on the important, yet relatively under-researched field of organizational structure in professional services (Lorsch & Tierney, 2002: 16; Lowendahl, 2000: 100; Teece, 2003: 899; Zaugg, 2003: 11). It also aims to help practitioners and scholars alike to better understand the phenomenon of high diversity in the organizational structure of management consulting firms. The phenomenon is important in the sense that consultancies' organizational structure has far reaching implications on their overall business model (section 1.1.2).

Second, the parsimonious model of contingency theory of organizations has been introduced recently (section 1.3.1). The model represents an expansion of the classical theory as it integrates the contingency factors size, task uncertainty, and task interdependence with constructs of organizational structure such as structural differentiation, specialization, centralization, and formalization. This thesis tests the new model empirically in the context of management consulting. It therefore provides a contribution to the development of organization theory in general and contingency theory of organizations in particular.

Research results can be classified as descriptive, explicative, prescriptive, and normative statements (Bronner et al., 1999: 6-7; Sachs & Hauser, 2002: 49-53; Thommen, 2002: 130-133). The results of this thesis include descriptive state-

ments that portray the concepts of task uncertainty, structural differentiation, specialization, centralization, and formalization in a management consulting context. These statements are derived in the inductive phase of the research. In addition, explicative 'if – then' statements are provided in form of those hypotheses that are supported by empirical findings. They help to explain the relationships between the contingency factors and the constructs of organizational structure. The explicative statements are the outcome of the deductive phase of the research.

1.5 Outlook

This thesis is comprised of six chapters. Following the introduction, Chapter 2 introduces the contingency theory of organizations as one of the organization theory schools. It portrays the contingency factors, constructs of organizational structure, and the concept of fit. Organic theory and bureaucratic theory as the two sub-theories are reviewed and integrated with the recent parsimonious model of contingency theory. Following a critical discussion of the theory, seven research hypotheses are developed on the relationships between contingencies and organizational structure.

Chapter 3 outlines the methodology used for the empirical part of the research study. It describes the operationalization of the contingency factors and the constructs of organizational structure. The data generation and data analysis processes are defined including sampling, interviewing, and data analysis with QDA software. The chapter also provides summary statistics on the group of consultancies and the group of interviewees. It concludes with a description of the tools and figures employed to test the research hypotheses.

Chapter 4 is concerned the results of this research study. It presents the identified measures for task uncertainty, structural differentiation, specialization, centralization, and formalization. The consulting firms' values for these measures as well as for the organizational size contingency are provided. A

side note describes the reflection of the task uncertainty concept in the language used by the interviewees. The chapter outlines the findings about the relationships as proposed by the seven research hypotheses. It concludes with a summary of the results and relates them back to the parsimonious model of contingency theory.

Chapter 5 discusses the findings. It reviews the results regarding the research hypotheses in order to then discuss the identified measures and firm values of the contingency factors and the constructs of organizational structure. Following a discussion of the research methodology, the implications of the results on the contingency theory of organizations are addressed. In addition, the results are evaluated in the light of institutional theory, another organization theory school of thought. The chapter concludes with a brief revisit of the objectives and the research question as well as some practical implications of the findings.

Chapter 6 summarizes the study and its results and presents starting points for future research.

2 Theory

The following chapter provides the theoretical background of this thesis. It addresses the contingency theory of organizations. Sections 2.1 and 2.2 review the contingency approach in science in general and in organization theory in particular. An introduction to the contingency theory of organizations is presented in section 2.3, which outlines contingency factors, constructs of organizational design, and the concept of fit as the central elements of the theory. Section 2.4 summarizes the major findings of research studies from organic and bureaucratic theory. The two sub-theories are the basis for the overarching contingency theory of organizations. They are integrated in Donaldson's (2001a: 95-98) new model of structural contingency theory as shown in section 2.5. Following a critical review of the contingency theory of organizations in section 2.6, the model is used to derive the research hypotheses of this thesis in section 2.7.

2.1 The contingency approach in science

The contingency theory of organizations is a subset of the contingency approach in social and natural sciences. At an abstract level, the contingency approach describes a relationship between two phenomena. As its name indicates, the contingency approach holds that the effect of one phenomenon A on another phenomenon B depends on some third aspect C. Typically A represents an input that can be influenced while B is an outcome. C moderates the relationship between A and B, without necessarily being correlated with either of them (Howell et al., 1986: 89). When the value of C is low, the value of B in response to a certain value of A differs from B's value when C is high for the same value of A. The relationship between A and B might even reverse with a change in the value of C. As shown in Figure 3, an increase in the value of A might have a positive effect on the value of B with a high C. When C is low, an increase in A might have a negative effect on B.

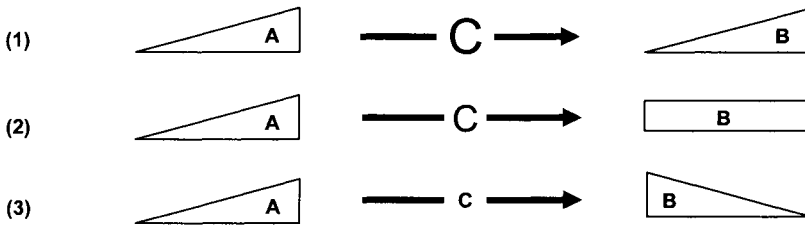


Figure 3: Examples of contingency relationships

For example, as firm management increases the share of variable pay (A) employee satisfaction (B) might increase too if trust in management (C) is high. Employees welcome the chance of a higher overall income (case 1). If, however, the relationship between management and employees is poisoned by mistrust, employees may feel threatened by the possibility of a lower income and employee satisfaction declines in response to a rise in the share of variable pay (case 3). There might also be an intermediate value for C at which an increase in the share of variable pay does not effect employee satisfaction (case 2).

Any bivariate relationship would be too simple to describe the connection between A and B. A more advanced model is required which hinges on a third aspect C. C is called a moderator or intervening variable of the relationship between A and B (Galtung, 1967: 82; Howell et al., 1986: 89; James & Brett, 1984: 310; Venkatraman, 1989: 424). The moderator becomes a contingency factor if it is more specific in the sense that it determines in a consistent fashion which values of A result in a high or low B. As a result, not every moderator is a contingency factor but every contingency factor is a moderator (Donaldson, 2001a: 6).¹³ Only contingency factors are of interest for researchers seeking to

¹³ The distinction between 'moderators' and 'contingencies' is not applied consistently in the literature. For example, the term 'contingency' is used to describe various phenomena in early strategic management publications (e.g., Ansoff, 1957: 115). Some authors distinguish a 'moderating variable' and an 'intervening variable' depending on their relationship with the independent variable (e.g., Bronner et al., 1999: 124-125). This thesis focuses solely on contingencies as depicted above.

investigate predictable, replicable relationships. The number of contingencies is not limited to one as in the examples in Figure 3. The relationship between A and B might simultaneously hinge on a number of different contingency factors $C_1 \dots C_n$.

This general framework represents the core of all contingency applications. A classical example from the *natural sciences* is the relationship between the input of fertilizer and the outcome of crop yields under the influence of contingency factors sunshine and rain (Van de Ven, 1979: 323). Additional fertilization if accompanied by sufficient sunshine and rain increases crop yields while it might be detrimental if sunshine and rain are low.

Similarly, in the *social sciences* the contingency approach has been extensively applied across a number of research domains, some of which are inter-linked with the contingency theory of organizations. The list includes:

- accounting (e.g., Hayes, 1977; Otley, 1980; Schweikart, 1985)
- business strategy (e.g., Fredrickson, 1984a; Ginsberg & Venkatraman, 1985; Hofer, 1974; Lee & Miller, 1996; Miller, 1975)
- entrepreneurship (e.g., DeCarlo & Lyons, 1980; Dess et al., 1997)
- health care management (e.g., Young et al., 2001)
- human resource management (e.g., Balkin & Gomez-Mejia, 1987; Delery & Doty, 1996; Jablin, 1975)
- leadership (e.g., Fiedler, 1967: 154-180; Kerr et al., 1974; Saha, 1979)
- management information systems (e.g., Weill & Olson, 1989)
- marketing (e.g., Lucas jr. & Gresham, 1985; Ruckert et al., 1985; Zeithaml et al., 1988)
- organizational behavior (e.g., Goodman & Sandberg, 1981; Van de Ven & Drazin, 1985)
- psychology (e.g., Burlew, 1972; James & Brett, 1984; Tversky & Kahneman, 2002).

As this thesis is concerned with organizational structure, the term 'contingency theory' always refers to contingency theory of organizations.

2.2 The contingency theory of organizations as one of the organization theory schools

Organization theory, as any scientific theory, can be compared to a spotlight that helps to illuminate, analyze, and explain observed phenomena of the 'real' world (section 1.3.4). It is concerned with organizations as social systems of interrelated behavior of people, who perform tasks in the pursuit of joint objectives.¹⁴ The phenomena to be explained by the theory include the creation, design, performance, and survival of organizations, typically in a work context (Hickson et al., 1988: 5; Pugh, 1971: 9). Rooted in the sociology of organizations, organization theory has developed as a discipline in its own right (Hickson et al., 1988: 2).

There is not one organization theory but a variety of organization theory schools (Cyert & March, 1963: 16-18; Donaldson, 1995: 5; Hickson et al., 1988: 19-20; Mone & McKinley, 1993; Pfeffer, 1993: 607-608; Scherer, 2002: 2; Zaugg, 2003: 8, 10). One of these schools of thought is the contingency theory of organizations, which applies the contingency approach to organizational questions. As it is concerned with the structure of organizations, it is also referred to as 'structural contingency theory' (e.g., Hollenbeck et al., 2002: 599; Pennings, 1987: 223; 1992: 267; Pfeffer, 1982: 6).

Contingency theory has been among the dominating schools of thought in organizational research since the 1960s, particularly in the U.S. and the U.K.

¹⁴ This definition of an organization reflects a classical view, which, for example, was advised by Chandler (1990: 14), Blau (1965: 324), Lawrence & Lorsch (1967: 3; 1969a: 3; 1969b: 6), and Kieser & Kubicek (1992: 1-2). Several similar definitions exist to enclose, among others, holdings, network organizations, alliances, and franchises (Canbäck, 2002: 21-23). A discussion of what constitutes an organization is provided by Clegg & Hardy (1996: 3-4) and Pfeffer (1997: 7-9).

(Donaldson, 1997: 58; Drazin & Van de Ven, 1985: 514; Scherer, 2002: 12; Schoonhoven, 1981: 349-350; Schreyögg, 1980: 305). It has been widely accepted and employed by a large research community to investigate organizations in Algeria (e.g., Zeffane & Mansfield, 1983), Finland (e.g., Routamaa, 1985), Germany (e.g., Child & Kieser, 1979; Kieser, 1973), New Zealand (e.g., Hamilton & Shergill, 1992), and a number of other countries including Canada, France, Hong Kong, India, Iran, Japan, Jordan, Poland, Singapore, and Sweden (Donaldson, 1986: 75-77; 1996a: 138-139; Miller, 1987: 316). Pennings (1987: 223) noted that "most textbooks have espoused the theory as valid and employ it to develop descriptive statements for organization design." In German-speaking areas, the work of Staehle (1973: 63-113) has triggered the use of the terms 'situativer Ansatz' and 'situationaler Ansatz' (situational approach) to refer to the contingency theory of organizations (e.g., Frese, 2000: 455-457; Hill et al., 1992b: 369-404; Kieser, 2002a; Schreyögg, 2003: 331-369).

Other schools of thought that have contributed to our understanding of organizations are listed in Table 1. This table provides an overview not an exhaustive accounting of theories. Organization theory, as Pfeffer (1997: v) summarized, "had continued along a path of increasing growth, differentiation, and paradigmatic proliferation that made undertaking any sort of overview or review of the field an 'almost impossible' effort".

Organization theory school	Representatives and selected publications	Examples of key arguments and propositions
Classical management/ Scientific management/ Taylorism/ Fordism	Brech (1957) Fayol (1929) Gulick & Urwick (1937) Koontz & O'Donnell (1972) Taylor (1922)	<ul style="list-style-type: none"> • Separation of white collar and blue collar work • High job specialization • Detailed, narrow job descriptions • Planning and control by management • Performance based compensation
Weberian bureaucracy	Weber (1972; 1973)	<ul style="list-style-type: none"> • Rationalization at the three levels of philosophy, institutions, and practical life • Bureaucracy of organizations with full-time, hierarchically arranged administrative staff • Efficiency and division of work
Human relations school/ Organizational development	Argyris (1964) Lang & Hellpach (1922) Lewin (1946a; 1946b; 1947) Likert (1961) Schein (1970; 1987; 1988; 1999)	<ul style="list-style-type: none"> • Motivation and work satisfaction • Independent work groups • Job enrichment/job enlargement • Participation of workers in decision-making • Organizational psychology
Behavioral decision-making school	Barnard (1938) March & Simon (1993) Simon (1957; 1997)	<ul style="list-style-type: none"> • Bounded rationality of individuals • Complexity reduction in decision-making • Organizational learning
Contingency theory	Blau & Schoenherr (1971) Burns & Stalker (1996) Lawrence & Lorsch (1967; 1969b) Donaldson (1996b; 2001a) Pugh et al. (1963; 1968; 1969b) Thompson (1967) Woodward (1965; 1971)	<ul style="list-style-type: none"> • Size, technology, environment, and other contingency factors • Structural differentiation, specialization, centralization, formalization, and divisionalization as elements of organizational structure • Concept of fit
New institutional economics	Alchian (1965) Coase (1937; 1960) Demsetz (1967) Grossmann & Hart (1983; 1986) Jensen & Meckling (1976) Picot (1982) Ross (1973) Williamson (1975; 1985)	<ul style="list-style-type: none"> • Transaction cost minimization • Property rights • Principal-agent relationship • Asymmetric information distribution • Opportunistic behavior

Organization theory school	Representatives and selected publications	Examples of key arguments and propositions
Population ecology/ Resource dependency	Aldrich (1979) Carroll (1984; 1985; 1993) Carroll & Barnett (2004) Hannan & Freeman (1977; 1984; 1989) McKelvey & Aldrich (1983) Pfeffer & Salancik (1978)	<ul style="list-style-type: none"> • Organizational diversity and reproduction • Inertia to structural change • Natural selection by environmental conditions in the Darwinian sense • Death and birth of organizations
Constructivist approaches/ Systems theory	Benson (1977) Berger & Luckmann (1967) Czarniawska & Gagliardi (2003) Luhmann (1984) Silverman (1968; 1970) Weick (1995) Willke (2000)	<ul style="list-style-type: none"> • Subjectively constructed reality, no objective reality • Knowledge affected by individual perspectives and culture • Organizational sense-making • Cognitive, social, and radical constructivism
Institutional theory/ Configurationalism	DiMaggio (1988) DiMaggio & Powell (1983) Greenwood & Hinings (1993; 1996) Kondra & Hinings (1998) Meyer & Rowan (1977) Meyer et al. (1993) Mintzberg (1979; 1983) Powell & DiMaggio (1991) Scott (1995) Scott & Meyer (1994)	<ul style="list-style-type: none"> • Institutional isomorphism and conformity • Change to gain organizational legitimacy, not effectiveness • 'Archetypes' as institutionally approved organizational forms

Table 1: Organizational theory schools (based on Hill et al., 1992b; Kieser, 2002c; Pfeffer, 1997; Sauer mann & Thommen, 2002; Schreyögg, 2003; Staehle, 1994; Weik & Lang, 2001; 2003)

Some of the schools of thought build on earlier research streams such as contingency theory and configurationalism on the Weberian bureaucracy (Brown, 1978: 367; Greenwood & Lawrence, 2005: 494). Many of them represent a subsumption of a number of different, mostly complementing but sometimes partly competing sub-theories. For example, new institutional economics comprises transaction cost economics, property rights theory, and agency theory (Ebers & Gotsch, 2002: 199). Population ecology on the other hand unites a quite consistent set of sub-theories (Kieser & Woywode, 2002: 255). Most of the schools including contingency theory operate mostly with an objectivist view of social science (section 1.3.4) with the obvious exception of constructivist approaches. The Weberian bureaucracy contains elements of both objectivism and subjectivism (Kieser, 2002b: 288).

2.3 Introduction to the contingency theory of organizations

2.3.1 Overview

Contingency theory of organizations is concerned with organizational structure (phenomenon A in Figure 3) and organizational performance (B) in response to the values of different contingency factors (C). It is not a universalistic theory. Contingency theory does not suggest one 'best way' to organize (Staeble, 1994: 47), nor does it claim that high performance stems from a 'maximum' of a certain aspect which, at times, has been proposed for specialization (Taylor, 1922: 41, 139), youthful management (Child, 1974: 181-183), participation in decision-making (Likert, 1961: 20), and bureaucratization (Weber, 1972: 124-130, 551-59). Contingency theory rather asserts that the performance of a specific organizational structure depends on the values of a number of contingency factors. In other words, the 'best' organizational structure depends on the actual situation at hand.

Contingency theory has been extensively applied to study organizations for more than four decades. Among the early works on the subject were Burns and Stalker's "The Management of Innovation" (1996, originally published 1961), Chandler's "Strategy and Structure" (1990, originally published 1962), Woodward's "Industrial Organization" (1965) and Lawrence & Lorsch's "Organization and Environment" (1969b, originally published 1967). The last also appears to be the first to actually use the term 'contingency theory' (Lawrence & Lorsch, 1969b: 156). Until today, contingency theory of organizations has enjoyed considerable attention within the academic community as recent publications by Birkinshaw et al. (2002), Child et al. (2003), Hollenbeck et al. (2002), and Wagner (2001) indicate.

Contingency theory has over time yielded many insights into the design and functioning of organizations as researchers have pursued various paths to enlarge the body of knowledge. Some of them primarily analyzed different elements of organizational structure (e.g., Greenwood et al., 1990; Grinyer & Yasai-Ardekani, 1980; Khandwalla, 1973). Others were concerned with the con-

tingency factors and which aspects of the organization they influence (e.g., Barley, 1990; Birkinshaw & Nobel, 1998; Jarley et al., 1997). Some studied the effects of fit on performance (e.g., Ezzamel & Hilton, 1980; Gresov, 1990; Hamilton & Shergill, 1992; Keller, 1994). Still others emphasized organizational change during the contingency adaptation process (e.g., Hill & Pickering, 1986; Priem, 1992; Wall et al., 1990).

As a result of the various approaches, organic theory and bureaucratic theory, two partially contrasting sub-theories have evolved. The sub-theories are discussed in section 2.4. The following sections 2.3.3 through 2.3.4 introduce contingency factors, constructs of organizational structure, and the concept of fit.

2.3.2 *Contingency factors*

The contingency theory of organizations argues that success or failure of different organizational structures depends on contingency factors. Researchers have identified a number of different contingencies. Some of them describe the external environment of the organization such as environmental uncertainty (e.g., Downey et al., 1975: 613-616; Keats & Hitt, 1988: 578-579; Lawrence & Lorsch, 1969a: 23-40; Tushman & Nadler, 1978: 615-616), dependence on external resources and other organizations (e.g., Inkson et al., 1970: 321; Pugh et al., 1969b: 104-108; Thompson, 1967: 30-32), and political factors (Hinings et al., 1975: 175-176). Most contingency variables, however, relate to the inside of the organization. Among the variables studied are:

- business strategy¹⁵ (e.g., Amburgey & Dacin, 1994: 1428-1432; Chandler, 1990: 13; Ginsberg & Venkatraman, 1985: 422-425; Grinyer et al., 1980:

¹⁵ Business strategy is mostly treated as one of the contingencies. Some authors distinguish between 'man-made' strategy and contingencies as given, situational aspects (e.g., Frese, 2000: 454-462).

193; Miles & Snow, 1978: 7) including diversification and vertical integration¹⁶ (e.g., Grinyer & Yasai-Ardekani, 1981: 472-474; Hitt et al., 2001: 16-17; Keats & Hitt, 1988: 574-575; Rumelt, 1974: 50-63)

- innovation activity (e.g., Cohen & Levin, 1989: 1067-1078; Damanpour, 1992: 376-379; Hage & Aiken, 1967a: 507; 1971: 63-64)
- knowledge (e.g., Birkinshaw & Nobel, 1998; Birkinshaw et al., 2002)
- mental predispositions of organizational members (e.g., Lorsch & Morse, 1974: 37-60; Wainer & Rubin, 1969: 178-179) including the CEO's personality (e.g., Miller & Dröge, 1986: 545-546; Miller et al., 1988: 546-547; Miller & Toulouse, 1986: 1389-1390)
- organizational size (e.g., Blau, 1970: 204-212; Child, 1973b: 169-176; 1975: 19-24)
- task (e.g., Gresov, 1990: 504-505; Tushman & Nadler, 1978: 615; Van de Ven et al., 1976: 324-325)
- technology (e.g., Child, 1973a: 334-335; Hickson et al., 1969: 378-384; Inkson et al., 1970: 321; Wall et al., 1990: 692; Woodward, 1965: 50-80).

Many of the research studies listed above found these contingencies to be related to organizational structure and performance. Some of the results were limited to particular circumstances, such as the influence of the CEO's personality to small firms (Miller & Dröge, 1986: 553; Miller et al., 1988: 564).

The contingency factors are, however, not separate, independent concepts. For example, business strategy may be driven by environmental uncertainty. It may also reflect the technology of existing operations and the CEO's personality. Therefore, the effects of business strategy, environmental uncer-

¹⁶ Diversification and vertical differentiation describe the degree to which an organization's activities span and are closely connected, or not, in the horizontal and the vertical dimension (Rumelt, 1974: 9-11, 19-23; 1982: 359-360). A discussion of related versus unrelated diversification and their implications on organizational structure was provided by Hill et al. (1992a).

tainty, technology, and CEO personality on organizational structure and performance should be intertwined and partly overlapping. Lawrence & Dyer (1983) and factor analyses performed by Dess & Beard (1984) have demonstrated that the variety of contingencies can be subsumed under a few integrating concepts. As a result, the major contingency effects can be captured by size and task (Donaldson, 2001a: 17-21; Van de Ven et al., 1976: 324-325) with the latter being composed of task uncertainty and task interdependence (Donaldson, 2001a: 21; Tushman & Nadler, 1978: 615-616; Wagner III & Gooding, 1987: 527). The modern contingency theory of organizations revolves therefore around three intraorganizational contingency factors:

- *Size* describes the magnitude of an organization. It is related to two aspects, the scale of an organization's operations and the amount of resources available to run these operations. While the first describes inputs and outputs, the latter is concerned with capacity. Blau (1972: 3) defined size as both "the scope of an organization and its responsibilities". Aldrich (1972: 33) referred to the first aspect namely the "magnitude of an organization's output", whereas Hage & Aiken (1971: 78) were concerned with the second aspect as "size implied the availability of more resources". The distinction between the two aspects is mirrored in various measures of firm size. Annual revenues, amount of assets, and number of employees are common to gauge size in a business context (Kieser & Kubicek, 1992: 292; Kimberly, 1976; Newbould & Wilson, 1977; Smyth et al., 1975). Among these measures, annual revenues is tied to the scale of operations, while assets and number of employees reflect capacity.
- *Task uncertainty* refers to the uncertainty associated with the operations of an organization. It can be described as the difference between the information available and the information required to perform a task successfully (Downey & Slocum jr., 1975: 571; Tushman & Nadler, 1978: 615). Outside factors such as environmental instability, dependence on external resources, and technical progress can be captured by task

uncertainty. The construct also incorporates the internal contingencies of technology and business strategy, the latter, for example, in terms of Miles & Snow's 'prospector-defender' typology (Miles & Snow, 1978: 31-67; Miles et al., 1978: 550-558). The task uncertainty in an organization striving for innovation tends to be higher than in one with predictable, highly automated processes that might reflect a cost leadership strategy. As a result, the concept of task uncertainty recognizes what Krickx (2000: 310) called "(external) and ... (internal) dimensions of uncertainty". It excludes, however, behavioral uncertainty that is dependent on aspects such as human's self-interest, goal conflict, and bounded rationality (Eisenhardt, 1989a: 58-64).¹⁷

- *Task interdependence* relates to how activities in different parts of an organization are connected with another. Thompson (1967: 54-65) distinguished connections in the flow of work, material, and objects as pooled dependence with indirect connections only, sequential dependence with direct, one-way connections, and reciprocal dependence with direct, two-way connections (section 2.4.2). The task interdependence concept captures the effects of the technology contingency, for example, in terms of Woodward's (1965: 38) unit, mass, and process production. It also incorporates the business strategy contingency with regard to diversification and vertical integration. For example, a diversified company with a portfolio of largely unrelated products mostly exhibits pooled connections (Thompson, 1967: 46-47, 54). In contrast, a firm offering a single product that requires high involvement of numerous functions such as research and development, planning, production, and sales is characterized by reciprocal dependence, whereas sequential dependence prevails

¹⁷ Eisenhardt (1989a: 61) distinguished 'behavioral uncertainty' and 'outcome uncertainty' the latter of which is caused by government policies, economic climate, competitor action, technological change, and similar factors.

between the stages of the value chain of a vertically integrated company (Donaldson, 2001a: 19).

2.3.3 *Organizational structure*

Organizational structure refers to an organization's enduring, internal pattern of relationships that provides regularity (Child, 1984: 4-5; Fredrickson, 1984b: 12; Kieser & Kubicek, 1992: 23-24; Pugh, 1971: 13; Ranson et al., 1980: 1; Roberts & Grabowski, 1996: 414).¹⁸ It embraces both formal and informal structure which "are intertwined and often indistinguishable" (Mintzberg, 1979: 11; 1983: 9). As a rather broadly defined phenomenon, organizational structure has been specified by a number of theoretical concepts for scientific analysis. Organizational structure research therefore encloses a non-exhaustive collection of various constructs (Donaldson, 1996b: 57). Among the structural constructs used are:

- administrative intensity (e.g., Child, 1973a: 330; Van de Ven & Ferry, 1980: 115)
- complexity (e.g., Child, 1973a: 332-333; Fredrickson, 1984b: 12; 1986: 283-284; Grinyer & Yasai-Ardekani, 1981: 473, 475)
- configuration (e.g., Holdaway et al., 1975: 42; Pugh et al., 1963: 305-306; Pugh et al., 1968: 78-79)
- concentration of authority (e.g., Inkson et al., 1970: 321; Pugh et al., 1968: 86-87)
- divisionalization (e.g., Grinyer & Yasai-Ardekani, 1980: 194-195; Kieser & Kubicek, 1992: 236-238)

¹⁸ Focusing on a work environment Mintzberg (1979: 2; 1983: 2) provided a somewhat more narrow definition as he described the structure of an organization "as the sum total of the ways in which it divides its labor into distinct tasks and then achieves coordination among them."

- documentation (e.g., Child, 1973b: 170; Kieser & Kubicek, 1992: 187-189)
- flexibility (e.g., Pugh et al., 1963: 306-307)
- horizontal differentiation (e.g., Child, 1973a: 332; Fredrickson, 1986: 284)
- organizational status (e.g., Donaldson et al., 1975: 20)
- span of control (e.g., Abdel-khalik, 1988: 245-247; Kieser & Kubicek, 1992: 182-185)
- spatial dispersion (e.g., Child, 1973a: 333; Fredrickson, 1986: 284)
- standardization (e.g., Pugh et al., 1963: 302-303; Pugh et al., 1968: 74-75)
- stratification (e.g., Hage, 1965: 293, 295-296)
- structuring of activities (e.g., Inkson et al., 1970: 321; Pugh et al., 1968: 85)
- traditionalism (e.g., Pugh et al., 1968: 79-81)
- vertical differentiation (e.g., Child, 1973a: 332; Fredrickson, 1986: 284).¹⁹

Some of these constructs are not independent, others overlap in their definitions, again others can be summarized by more encompassing concepts. Therefore, the following mutually exclusive constructs are used in this thesis to parsimoniously depict the structure of organizations:

- *Structural differentiation* describes the extent to which an organization is split into separate parts such as positions, ranks, subunits, or sections (Blau, 1970: 203-204; 1972: 3-4). It characterizes the structure of an organization in both ways, horizontally and vertically. Structural differentiation accommodates a number of other constructs such as configuration, divisionalization, horizontal differentiation, span of control, spatial

¹⁹ The list exclusively contains structural 'constructs' which are assessed by 'measures' that adopt certain 'values' (section 1.3.1). For example, the construct of horizontal differentiation can be measured by the CEO span of control, the average subordinate ratio, and the number of subsidiary firms, business units, departments, or job positions at the same hierarchical level. In the literature, 'constructs' such as standardization and 'measures' such as percentage of non-workflow personnel are often not distinguished but listed together as 'structural variables' (e.g., Child, 1972a: 169; Pugh et al., 1969b: 92)

dispersion, and vertical differentiation. A concept that is closely related to structural differentiation is complexity, which subsumes spatial dispersion as well as horizontal and vertical differentiation (Child, 1973a: 332-333; Fredrickson, 1984b: 12; 1986: 282). However, complexity refers more to the relationships between the parts of an organization than to the segments itself (Child, 1973a: 332-333) and is also used with a number of other meanings in organization theory research.²⁰ Structural differentiation needs to be distinguished from Lawrence & Lorsch's (1967: 3-4) concept of differentiation (section 2.4.2).

- *Specialization* describes the degree to which labor is divided and tasks are assigned to specific departments and positions (Pugh et al., 1963: 301-302; Pugh et al., 1968: 72-74). Again, the construct has a horizontal and a vertical component. Horizontal specialization describes how broad or narrow in scope roles and tasks are defined (1979: 69-71; Mintzberg, 1983: 26-28). Vertical specialization is the degree to which the administration and the actual performance of work are separated, i.e., how much an individual controls the work or just conducts it without much thought (Mintzberg, 1979: 69, 71-72; 1983: 26, 28). The construct of administrative intensity, measured, for example, by the ratio of managers and administrative staff to direct employees (Child, 1973a: 330), is related to vertical specialization. Specialization needs to be distinguished from 'focusing' of management consultants and consulting firms, which sometimes is referred to as specialization in the consulting literature (section 3.3.3).
- *Centralization* is the degree to which the authority to make decisions is concentrated at the top or distributed across an organization (Ezzamel &

²⁰ For example, complexity was used interchangeably with specialization in the meaning of the latter (e.g., Dewar & Hage, 1978: 135; Hage, 1965: 293-294; Hage & Aiken, 1967a: 507). Child (1973a: 332-333) referred to both specialization and the relationships within an organization as complexity. The expression was also used to describe the environment of an organization (e.g., Mintzberg, 1979: 268; Tung, 1979: 680).

Hilton, 1980: 198; Greenwood & Hinings, 1976: 151; Pugh et al., 1963: 304-305; Pugh et al., 1968: 76-78). The construct refers to which types of decisions are confined to the top of an organization, which are delegated, and how far down the hierarchy. The expressions centralization and decentralization have been applied in many different ways in organization theory that they have “almost ceased to have a useful meaning” (Mintzberg, 1979: 181). For example, the geographical distribution of an organization has been called decentralization in the non-English literature, whereas the concept of centralization as defined here is referred to as delegation (e.g., Hill et al., 1992b: 174; Kieser & Kubicek, 1992: 153-159, 185-187; Ulrich & Fluri, 1995: 177, 190).

- *Formalization* refers to how much work is governed by rules, procedures, and methods, and to what extent an organization relies on paperwork to communicate these rules (Hage & Aiken, 1967b: 79-80; 1969: 372; Mintzberg, 1979: 81-83; Oldham & Hackman, 1981: 71). This definition of formalization subsumes both standardization and documentation. Standardization refers to the extent to which work is guided by rules and procedures (Child & Mansfield, 1972: 377; Pugh et al., 1963: 302-303; Pugh et al., 1968: 74-75). Documentation describes the use of written documents to enforce these rules and procedures (Child, 1973b: 170). Initially, the term ‘formalization’ was also used to refer to either documentation (e.g., Holdaway et al., 1975: 57; Pugh et al., 1963: 303-304; Pugh et al., 1968: 75-76) or standardization (e.g., Hage, 1965: 295).

2.3.4 *The concept of fit*

The previous sections argue that organizational structure in terms of structural differentiation, specialization, centralization, and formalization needs to be adapted to the situation of the organization with regard to size, task uncertainty, and task interdependence. In other words, high organizational performance results from appropriate fit between organizational structure and

the values of different contingencies. This statement represents the core belief of the contingency theory of organizations. It has received empirical support as firms in fit were found to have higher performance than firms in misfit (e.g., Donaldson, 1987; Ezzamel & Hilton, 1980; Hill et al., 1992a; Hill & Pickering, 1986; Pennings, 1987). Fit between organizational structure and 'context variables' has been proposed by a large number of academics from organization theory, strategic management and other disciplines (e.g., Burns & Stalker, 1996: 119; Donaldson, 1987: 4-7; Lawrence & Lorsch, 1969b: 209; Pennings, 1987: 223; Powell, 1992: 120; Roberts, 2004: 10; Van de Ven & Drazin, 1985: 357-361; Woodward, 1965: 68-72).

Fit between organizational structure and the value of the contingencies is not a static concept but rather a continuous adaptation process as indicated by Child (1972b: 13-16) in the description of the 'strategic choice' model and Donaldson (1987: 2-5) in his 'SARFIT'²¹ model. The latter has outlined the process. Fit, once achieved, may erode for a number of reasons. First, the level of external contingencies such environmental instability may change, for example, in reflection of an altered competitive situation, general economic conditions, consumer behavior, or the development of substitute products. Second, intraorganizational contingencies may change gradually over time. For example, as an organization grows in size its established organizational structure moves out of fit with the size contingency. Third, fit may decline in response to decisions consciously taken in the organization. Management might pursue a new business strategy and hence, quite rapidly, create misfit between the strategy contingency and organizational structure. Once the degree of misfit becomes substantial enough so that performance drops below a particular level, organizational structure is adapted to regain fit with the new contingency values (Donaldson, 2000: 386).

²¹ Structural adjustment to regain fit (Donaldson, 1987: 2).

The adaptation process is typically neither simple nor smooth (Miles et al., 1978: 547; Zeffane, 1989: 332). It may also be a lengthy process as firms can remain in misfit for several years (Dyas & Tanheiser, 1976: 73-74) and only take corrective action if low performance coincides with “environmental illiberality” (Child, 1972b: 4) that prevents organizations from having slack resources. This situation arises, for example, when the influence of misfit is amplified by other events such as economic recession or deregulation (Donaldson, 1996b: 67; 2000: 389-391). Donaldson (1987: 14-15) found that many firms kept an increasingly unfitting functional structure for more than 10 years after their business strategy had been shifted towards diversification (section 2.3.2). The lowest performing firms eventually adopted a divisional structure resulting in performance improvements.

The optimization of performance²² is considered paramount in structural contingency theory, which typically investigates work organizations. Being ‘taken-for-granted’ and “a difficult concept, both in terms of definition and measurement” (Keats & Hitt, 1988: 576), organizational performance is often not an explicit element of research studies. An exception are investigations of the effects of fit on performance. Performance is typically assessed in terms of profitability (e.g., Chenhall, 1979: 36; Hill & Pickering, 1986: 29; Hitt et al., 2001: 19; Khandwalla, 1973: 484; 1974: 87) or a combination of profitability and growth (e.g., Child, 1974: 177-181; Dess & Robinson, 1984: 268; Donaldson, 1987: 12-13; Lawrence & Lorsch, 1967: 25). Both approaches reflect a focus on business organizations and the shareholders’ financial interests that often dominate in this context. Alternative dimensions of performance mirror the claims of other stakeholders such as employees and customers that often compete with shareholders’ demands (Pfeffer & Salancik, 1978: 29). Some studies therefore

²² Performance is sometimes interchangeably referred to as ‘organizational effectiveness’ (e.g., Donaldson, 2001a: 6; Lorsch & Morse, 1974: 4; Pennings, 1987: 223, 228). A more precise term would be ‘organizational efficiency’ as performance measures such as profitability assess *how well* an organization transforms inputs into outputs. In contrast, ‘organizational effectiveness’ relates to *whether or not* what is being done should be done at all (Pfeffer & Salancik, 1978: 11). This thesis uses the term ‘performance’.

supplement (e.g., Pickle & Friedlander, 1967: 165-167) or substitute (e.g., Alexander & Randolph, 1985: 853; Dewar & Werbel, 1979: 427; Pennings, 1987: 238-239) financial performance data with the assessment of customer satisfaction, employee satisfaction, and similar aspects. Even if performance is not directly dealt with empirically, it is a basic component of most models (Hickson et al., 1988: 6).

The concept of fit is not confined to contingency theory of organizations. It is equally rooted in the organization theory schools of population ecology and configurationalism (Mintzberg, 1979: 300; Van de Ven, 1979: 322). Population ecologists propose that the organizational forms with the 'best fit' to environmental characteristics proliferate through duplication and reproduction (e.g., Carroll, 1984: 73-77; Hannan & Freeman, 1984: 150-151). Other organizational forms fade away as a result of a natural selection process. Configurational theory argues that few configurations prevail with superior fit between their coordinating mechanisms, design parameters, and contingency factors (Doty et al., 1993: 1201-1202; Meyer et al., 1993: 1175; Mintzberg, 1979: 299-304).

Similarly, strategic management researchers propose that strategy aims to achieve fit between organizational resources and capabilities with environmental opportunities and threats (Venkatraman, 1990: 19; Venkatraman & Camillus, 1984: 513). This belief is deeply embedded in the resource-based view of strategic management as stated by Powell (1992: 119), who claimed that "it is reasonable to regard alignment skill as a strategic resource capable of generating economic rents." Another topic in strategic management is the distinction between external and internal fit. Venkatraman (1990: 19) and Morris & Pinnington (1998: 77) argued that an organization strives for alignment of strategic choices with the environment and consistency among its strategic decisions. Likewise, organizational theorists propose that fit with environmental conditions as well as intraorganizational fit are relevant for organizational performance. For example, Miller (1992: 159) stated that "organizations must achieve fit both with their external environments and among their elements of structure and process."

Different terms are used across research domains, often interchangeably (e.g., Donaldson, 1987: 8), to refer to the concept of fit. Among the more frequently applied denominations are:

- adaptation (e.g., Hannan & Freeman, 1977: 937; Miller, 1992: 160; Venkatraman & Camillus, 1984: 520)
- (re)adjustment (e.g., Grinyer & Spender, 1979: 115; Johnson, 1988: 88)
- (co)alignment (e.g., Burgelman & Grove, 1996: 8; Venkatraman, 1989: 423; Venkatraman & Prescott, 1988: 47; 1990: 1)
- compatability (e.g., Miller, 1992: 160)
- consistency (e.g., Mintzberg, 1979: 220; Morris & Pinnington, 1998: 77; Venkatraman, 1990: 19; Zeffane, 1989: 327)
- congruency (e.g., Venkatraman, 1989: 423; Zeffane, 1989: 327-328)
- fit (e.g., Morris & Pinnington, 1998: 77; Roberts, 2004: 10; Spencer, 1986: 50; Van de Ven & Drazin, 1985: 333; Yin & Zajac, 2004: 365)
- matching (e.g., Jemison, 1981: 87; Miller, 1986: 244; Yin & Zajac, 2004: 365).

Some researchers assign slightly different meanings to these expressions. For example, Venkatraman & Camillus (1984: 514) distinguished between 'fit' within the content of business strategy and 'alignment' as a strategy process.

This thesis focuses on the intraorganizational contingencies of size, task uncertainty, and task interdependence. It is therefore primarily concerned with internal aspects of fit. However, external fit is accounted for as the three contingencies capture and integrate environmental aspects (section 2.3.2). Regarding terminology, this thesis follows the structural contingency theory tradition as established by Lawrence & Lorsch (1969b: 209) by using the term 'fit' to describe the association between organizational structure and the contingencies size, task uncertainty, and task interdependence.

2.4 Organic theory and bureaucratic theory

2.4.1 *Two sub-forms of structural contingency theory*

Contingency theory of organizations integrates the results of a number of research streams and topics. As outlined in section 2.3, it incorporates a number of structural constructs, contingency factors, and views on how fit results in performance. Many of these aspects are part of either organic theory or bureaucratic theory, the two major sub-forms of classical structural contingency theory. Each of the two sub-forms represents in itself a conclusive, self-standing theory (Donaldson, 2001a: 35, 61; Schreyögg, 2003: 332). Both theories have their own model of organizational structure, rely on different contingency variables, and are supported by extensive theoretical and empirical research. The sub-theories and in particular the pioneering research they are based on are discussed in detail in the next two sections. Subsequently in section 2.5, they are integrated into the overarching framework of structural contingency theory expanding on the introduction provided in section 2.3.

2.4.2 *Organic theory research*

The organic theory of organizations was predated by contingency research on organizational behavior of individuals and small organizational units in particular group situations. For example, Leavitt (1951) investigated groups with hierarchical and participatory structures in decision-making. He found that hierarchical structures produced better results when the tasks were routine, but participatory structures were superior when the tasks involved innovative problem solving (Leavitt, 1951: 42-44). Research on contingency theory of macro-organizations was the logical step following the contributions in the field of micro-organizational behavior of individuals and groups.

One of the first fundamental contributions to organic theory was provided by *Burns & Stalker* (1996, originally published 1961). Based on extensive, qualitative field studies, the authors introduced an organizational model that

contrasted the mechanistic and the organic structure (Burns & Stalker, 1996: 119-122). The mechanistic and the organic structure symbolized extreme values of a single-dimensional continuum, with organizations at any point along the continuum. A mechanistic structure was high in centralization, specialization, and formalization. Decision-making was centralized in the hands of top management and the highly divided work of subordinates was guided by detailed job descriptions, assignments, roles, and procedures. The mechanistic structure was argued to be effective with low rates of technological and market change, i.e., under low task uncertainty conditions (Burns & Stalker, 1996: 119). Under these conditions, management possessed the knowledge and capabilities to specifically guide and supervise the tasks performed by the organization. In contrast, the organic structure was low in centralization, specialization, and formalization. Decision-making power was widely delegated to lower-level employees, who enjoyed great autonomy in their work and were much less controlled by the organization than in a mechanistic system. The organic structure was proposed for high change conditions such as industries with research-intensive products or a high rate of innovation (Burns & Stalker, 1996: 121).

The model of mechanistic and organic structure has subsequently become the standard model of organizational structure in organic theory and has been used in much contingency research (e.g., Hage, 1965: 304-307; Hage & Dewar, 1973: 280; Hull, 1988: 404-405; Perrow, 1967: 199; Woodward, 1965: 23-25). Its mechanistic structure corresponds with the classical management school as it emphasizes control, job specialization, and clear job descriptions (Table 1). In contrast, the organic structure draws upon the human relations school that supports employee empowerment, self-directed work teams, and participation in decision-making. Burns & Stalker (1996: 119) did not favor one over the other but found them both valid and effective depending on the current situation regarding technological and market change.

Shortly after Burns & Stalker (1996), Hage (1965) and his colleagues provided a similar albeit more advanced model of organic theory. Two major

aspects distinguished their work. First, Hage (1965: 294-295) together with Aiken (Hage & Aiken, 1967a: 507-512; 1967b: 77-80; 1969: 371) used measures of centralization and formalization and thus helped to expand empirical research into quantitative methods, extending the qualitative field studies used by Burns & Stalker (1996). The continuum of organizational structure in organic theory became more palpable as it no longer had to rely exclusively on the dichotomy of the extremes – mechanistic and organic structure. Several studies of Hage and his colleagues that utilized a quantitative approach confirmed the arguments of Burns & Stalker (1996). A centralized and formalized structure worked effectively with routine tasks (Hage & Aiken, 1969: 370-372), while an organic structure being low in centralization and formalization was positively associated with high innovation rates (Hage & Aiken, 1967a: 507-508; 1971: 76; Hage & Dewar, 1973: 285). Second, Hage (1965: 294-296) introduced complexity and stratification as two additional constructs to describe organizational structure. The term 'complexity' was used to describe specialization (section 2.3.3) measured by the level of training required and the share of highly educated employees. Stratification referred to differences in rewards between jobs.

Hage (1965) only implicitly included contingencies in his theoretical framework. However, he adopted a view similar to that of Burns & Stalker (1996: 119) as he associated a centralized, formalized structure with low complexity and high stratification with efficiency and, in opposite, a decentralized structure with low formalization and stratification but high complexity with innovation²³ (Hage, 1965: 300). Implying that efficiency was related to low task uncertainty conditions and innovation to high task uncertainty, Hage's view became consistent with the conditions for mechanistic and organic structure described by Burns & Stalker (1996: 119, 121).

²³ Hage (1965: 293) used typical measures of innovation such as the number of new programs in a year and the number of new techniques in a year to assess what he termed 'adaptiveness'.

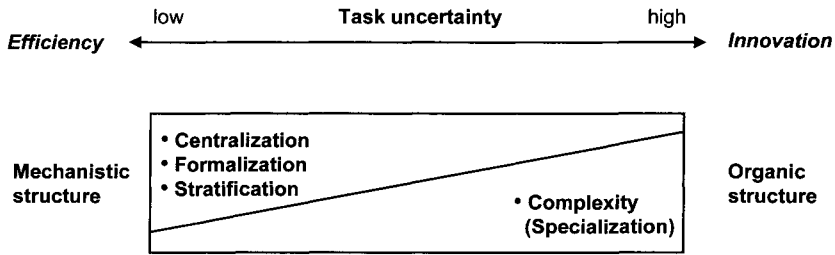


Figure 4: Contingency relationships according to Burns & Stalker (1996: 119-121) and Hage (1965)

A different and in comparison with the preceding studies by Burns & Stalker (1996) and Hage (1965) more complicated model was developed by the Harvard Business School researchers *Lawrence & Lorsch* (1967; 1969b, originally published 1967). These authors, too, described organizational structure by using the constructs of centralization and formalization. In addition, they conceptualized organizational structure in terms of differentiation²⁴ and integration. Differentiation described differences among organizational units regarding goal orientations, time orientations, formality of structures, and interpersonal orientations (Lawrence & Lorsch, 1967: 5-9; 1969b: 30-38). It had to be counterbalanced by integration. The greater the differentiation, the more integration of the departments was needed for the effective functioning of the overall organization. Integration was achieved by simple means such as hierarchy and rules as well as through sophisticated and more powerful devices of liaison positions, standing committees, integrating managers and integrating departments (Lawrence & Lorsch, 1967: 30-44; 1969b: 137-151).²⁵

Lawrence & Lorsch explicitly distinguished between departments of an organization. The degree of differentiation between departments is dependent on the rate of new product innovation and, as in the study by Burns & Stalker

²⁴ The term 'differentiation' needs to be distinguished from 'structural differentiation' as introduced by Blau (section 2.4.3).

²⁵ Mintzberg (1979: 162-180) discussed integrating devices in detail.

(1996: 119), the rate of technological and market change (Lawrence & Lorsch, 1969b: 90-96). Firms in low change industries with little new product innovation, technological and market change should exhibit mechanistic characteristics with little differentiation between departments. Accordingly, these firms could rely on simple integration means. Greater product innovation, technological and market change, on the other hand, influenced some departments such as research and planning more than others such as production and finance creating stronger differentiation between departments. The more effected departments should, similar to the organic structure developed by Burns & Stalker (1996: 121-122), exhibit low centralization and formalization, and high participation in organizational decision-making. With greater differentiation between departments, more sophisticated integrating devices needed to be employed for an effective functioning of the overall organization, particularly if intense interaction between the highly differentiated departments was required (Lawrence & Lorsch, 1969b: 96-99; Lorsch & Lawrence, 1972: 42-47). High differentiation between relatively independent units of a divisional organization needed little integration to make the overall organization effective. As a result, the degree of differentiation between departments should match task uncertainty caused by a high rate of product innovation, technological and market change, whereas the degree of integration needs to reflect both differentiation and interaction intensity (Lawrence & Lorsch, 1969b: 90-107; Lorsch & Lawrence, 1972: 42-47). For the latter Lorsch & Lawrence (1972: 38) explicitly referred to Thompson's (1967) task interdependence concept.

Thompson (1967) argued that task interdependence determined by technology is a major contingency variable of organizational structure. He distinguished three different types of technology that corresponded with three forms of task interdependence and should, in turn, be mirrored by three different organizational structures. Mediating technology, such the linking of lenders and borrowers through a bank, was characterized by pooled interdependence. Organizational units such as the branches of a bank had only indirect connections between each other in a pooled interdependence relationship. This low degree of interdependence was claimed to be effectively structured by rules and

procedures. Using Burns & Stalker's (1996) terminology, this organizational form resembled a mechanistic structure. Long-linked technology, the output of one unit being the input for the next such as in an assembly line, was associated with sequential interdependence. Sequential interdependence has direct, one-way connections between organizational units. This medium form of interdependence can be structured by planning. Finally, intensive technology that relates to reciprocal interdependence is characterized by multiple, nearly unpredictable back and forth connections between organizational units. A large construction project or the joint development of a new product by the marketing, production, and R&D department are examples of reciprocal interdependence. This last form was effectively structured by mutual adjustment which was closely related to the organic structure by Burns & Stalker (1996: 121-122). In summary, Thompson (1967: 51-65) proposed that different values of the task interdependence contingency fitted different organizational structures – pooled interdependence fitted a mechanistic structure, reciprocal interdependence fitted an organic structure, and sequential interdependence fitted a mixture of both.

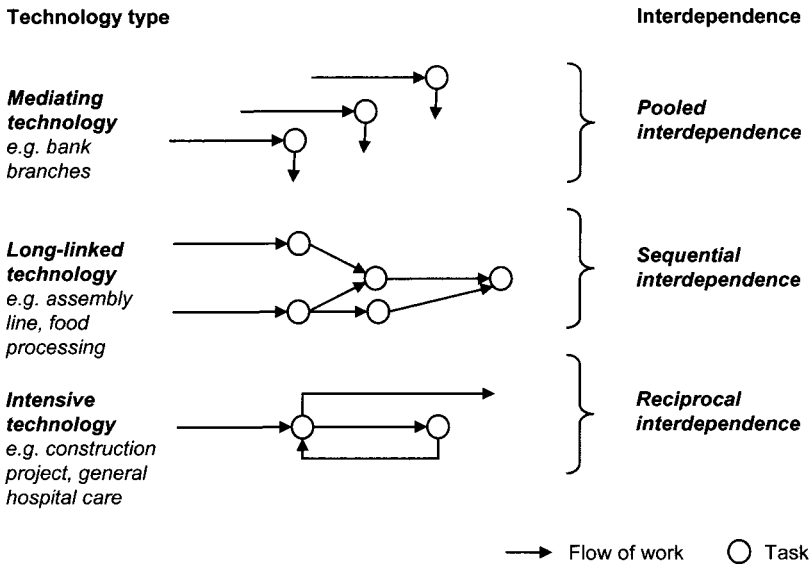


Figure 5: Types of technology and related forms of task interdependence according to Thompson (1967: 51-65), (graphic based on Jemison, 1981: 80; Mintzberg, 1979: 23)

Likewise, Perrow (1967) argued that technology is a major determinant of organizational structure. He distinguished four types of technology based on a matrix of task analyzability and the number of exceptions. These two dimensions, in contrast to Thompson's task interdependence, described task in terms of task uncertainty. For Perrow, technology did not refer to hardware or layout but to the cognitive processes involved. Routine technology being analyzable with few exceptions required centralized, formal structures. In contrast, non-routine technology with low analyzability and many exceptions should be flexibly organized and decentralized. Mass steel production and aerospace were examples for the two opposite types of technology (Perrow, 1967: 196). Perrow (1967: 199) explicitly referred to the mechanistic and organic structure identified by Burns & Stalker (1996) for the two purest forms of technology. The mixed forms were engineering technology that was analyzable but has many exceptions and craft technology being hardly analyzable with few exceptions. Engineering technology such as heavy machinery fitted a centralized

structure in which technical experts handled the many exceptions and direct operational supervisors help to run operations to plan. Craft technology such as specialty glass production required all levels of the organization to exercise discretion and to have decision-making power, i.e., a decentralized structure (Perrow, 1967: 199-200).

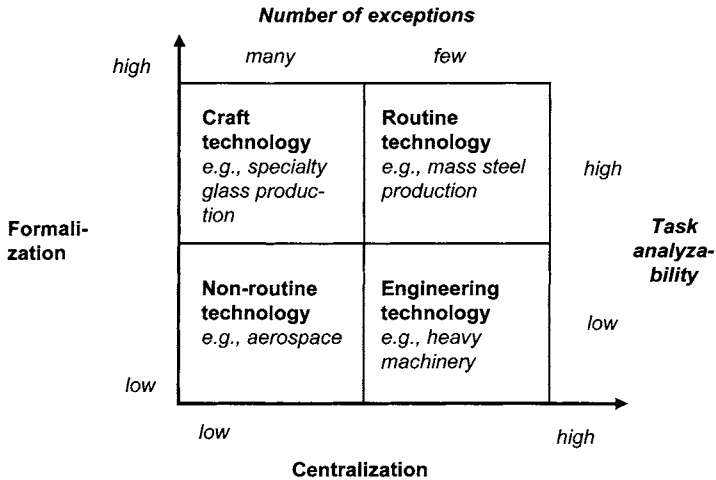


Figure 6: Types of technology and fitting organizational design according to Perrow (1967)

Another pioneering study was conducted by Woodward (1965; 1971). She argued that technology, in the sense of what is produced and how many units, was a determinant of organizational structure. Technology influenced the management decision of how to organize production, i.e., what later was termed “continuity ... in the production workflow” (Hickson et al., 1969: 389). Woodward distinguished unit and small batch production, large batch and mass production, and process production, for example for locomotive manufacturing, automobile production, and oil refinery, respectively. She argued that large batch and mass production is effectively structured by a mechanistic structure in the tradition of classical management (Table 1). In contrast, both small batch production as well as process production should be organized

according to the human-relations school with an emphasis on flexibility and participation in decision-making.

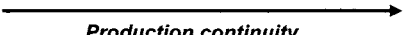
Mechanistic structure		✓	
Organic structure	✓		✓
	Unit and small batch production <i>e.g., locomotive</i>	Large batch and mass production <i>e.g., automotive</i>	Process production <i>e.g., oil refinery</i>
	 Production continuity		

Figure 7: Fit between production set-up and organizational structure according to Woodward (1965; 1971)

Referring to Burns & Stalker (1996), Woodward concluded that with increasing production continuity first the organic structure, then the mechanistic structure and then again the organic structure were appropriate. The association is shown in Figure 7. She also found fit between technology and structure to be associated with high performance (Woodward, 1965: 68-72; 1971: 21). As for Burns & Stalker (1996) and Perrow (1967), task uncertainty driven by technology was the major contingency for Woodward. However, technology was no direct determinant of organizational structure for her but impacted managerial decisions about production set-up and, in turn, organizational structure. So Woodward's technology thesis was also about how production set-up as one aspect of organizational design influenced another structural aspect (Burrell & Gareth, 2001: 223).

Research studies	Contingency factors	Underlying contingency concepts	Organizational structure concepts	Findings
Burns & Stalker (1996)	Technological and market change	Task uncertainty	Mechanistic vs. organic structure	Mechanistic structure fitted stable environment, organic structure fitted high change conditions
Hage (1965) Hage & Aiken (1967a; 1967b; 1969; 1971)	Business strategy seeking efficiency or innovation	Task uncertainty	Mechanistic structure with low complexity and high stratification vs. organic structure with high complexity and low stratification	Mechanistic structure fitted efficiency strategy, organic structure fitted innovation strategy
Lawrence & Lorsch (1967; 1969b)	Product innovation, technological, and market change	Task uncertainty; task interdependence	Mechanistic vs. organic structure; differentiation and integration between departments	Mechanistic department structure fitted low change conditions, organic department structure fitted high change conditions; differentiation between departments to be counteracted by integration means but only if task interdependence was high
Thompson (1967)	Technology as driver of intraorganizational interdependence	Task interdependence	Mechanistic vs. organic structure	Mechanistic structure fitted pooled interdependence, organic structure fitted reciprocal interdependence, mixture of both types fitted sequential interdependence
Perrow (1967)	Technology in terms of analyzability and number of exceptions	Task uncertainty	Mechanistic vs. organic structure	Mechanistic structure fitted routine technology and with adaptations engineering technology, organic structure fitted non-routine technology and with adaptations craft technology

Research studies	Contingency factors	Underlying contingency concepts	Organizational structure concepts	Findings
Woodward (1965; 1971)	Technology in terms of production continuity	Task uncertainty	Mechanistic vs. organic structure	Organic structure fitted unit and small batch production as well as continuous process production, mechanistic structure fitted large batch and mass production

Table 2: Examples of pioneering organic theory research

A large number of research studies have build upon the pioneering research summarized in Table 2. For example, the technology imperative on organizational structure as proposed by Woodward (1965; 1971) and Perrow (1967) and, in turn, the ideal-types of mechanistic and organic structure by Burns & Stalker (1996), have been extensively investigated (e.g., Aldrich, 1972; Alexander & Randolph, 1985; Barley, 1990; Child & Mansfield, 1972; Collins & Hull, 1986; Fry, 1982; Gerwin & Christophel, 1974; Hickson et al., 1969; Hull & Collins, 1987; Keller, 1994; Khandwalla, 1974; Miller & Dröge, 1986; Reeves & Turner, 1972; Reimann, 1977; 1980). Most researchers were able to confirm that technology was related to organizational structure. However, weaker, more specific, and more indirect relationships were found (e.g., Barley, 1990; Child & Mansfield, 1972; Hickson et al., 1969; Hull & Collins, 1987; Reeves & Turner, 1972; Reimann, 1977; 1980). For example, Reeves & Turner (1972) discovered technology to have a weaker impact on structure in situations where managerial ideology plays a role in the organizational design process.

Similarly, Thompson's (1967) task interdependence concept was confirmed to be a structural contingency by subsequent research studies (e.g., Gerwin & Christophel, 1974; Gresov, 1990; Van de Ven et al., 1976). For example, Gerwin & Christoffel (1974) replicated relationships between task interdependence and organizational structure in a manufacturing context. It was also argued that a change in the task interdependence contingency lead to change in

coordination modes, i.e., that task determined structure (e.g., Van de Ven et al., 1976: 332).

The differentiation-integration model of Lawrence & Lorsch (1967; 1969b) received empirical support from a study by Tung (1979) on a cross-industry sample of 21 companies located in Vancouver, Canada, Greenwood et al. (1975) who studied local authorities in England and Wales, and also by Faas (1985), who investigated 123 private firms throughout Netherlands. The concept has also been the basis for the work of Lorsch & Morse (1974), who added predispositions of organizational members as another contingency. A mechanistic structure fitted employees who were comfortable being controlled and with low tolerance for ambiguity, whereas an organic structure fitted employees with high tolerance for ambiguity and a desire for autonomy (Lorsch & Morse, 1974: 112). Fit between the member predisposition contingency and structure was found to lead to higher unit performance and to better satisfaction of human needs and aspirations of organizational members (Lorsch & Morse, 1974: 114-115). Ghoshal & Nitin (1993) developed a sophisticated contingency theory for multinational corporations. They demonstrated that the overall design of the firm needed to fit its global strategy, whereas the organizational structure of the subsidiary needed to fit its local environment for high performance. This framework, too, built upon the dialectics of differentiation and integration introduced by Lawrence & Lorsch (1967; 1969b).

2.4.3 Bureaucratic theory research

As organic theory builds upon research on micro-organizational behavior of individuals and groups, bureaucratic theory has its roots in the Weberian model of bureaucracy (Table 1). Max Weber used 'bureaucracy' as a technical term, later the word has been associated with a decidedly pejorative meaning (Mintzberg, 1979: 84). Weber praised a bureaucratic structure directed by rigid rules and with dedicated, hierarchically arranged administrators for its efficiency in terms of "precision, speed, unambiguousness, ..., continuity, discre-

tion, consistency, direct subordination, little waste" (Weber, 1972: 561-562). He claimed a general tendency for administration to become more bureaucratic through increasing size of organizations, advancements in communications technology and a number of other factors. Weber (1972: 124) developed three ideal-types of organizational control and called them charisma, traditionalism, and legal with bureaucracy being a form of legal. Empirically, organizations could lay somewhere between these ideal-types.

As Weber argued qualitatively, the positions of actual organizations in a multidimensional continuum between three ideal-types cannot be measured and analysis becomes vague. Researchers therefore strove for a better assessment of organizational structure. Among them the *Aston group*²⁶ around Pugh developed a standard-setting and much replicated research approach (Pugh et al., 1969a; Pugh et al., 1963; Pugh et al., 1968; 1969b).²⁷ The group defined a number of constructs to describe organizations including standardization – the extent to which work is subject to standard rules and procedures, documentation²⁸ – the use of paperwork to describe these rules and procedures and for communication, specialization – the degree to which work is divided within the organization, and centralization – the extent to which the authority to make decisions is confined to higher levels of the hierarchy (Pugh et al., 1963: 301-307; Pugh et al., 1968: 72-78). The Aston group collected interval-scaled data along these dimensions for 52 private and public work organizations from various industries in the English Midlands. Based on factor analysis, they found a high, positive correlation between the constructs of standardization, documentation, and specialization. Accordingly, they subsumed them under one cluster that

²⁶ Named after the University of Aston in Birmingham (U.K.).

²⁷ The complete research program that was conducted by three "generations of Aston scholars" (Greenwood & Devine, 1997: 201) was some years later summarized by Pugh and his colleagues (Hickson & McMillan, 1979b; Pugh & Hickson, 1976; Pugh & Hinings, 1976; Pugh & Payne, 1977).

²⁸ The Aston group (Pugh et al., 1963: 303; Pugh et al., 1968: 75) used the term 'formalization' in its initial meaning which is equivalent to today's 'documentation' (section 2.3.3). The modern definition of formalization subsumes both standardization and documentation.

they termed 'structuring of activities'. Another cluster independent of 'structuring of activities' was 'concentration of authority' which contained the centralization construct among others (Pugh et al., 1968: 85-89; 1969b: 92). The Aston group specified two other clusters 'line control of work flow' and 'relative size of supportive component' that later turned out to be less central to contingency theory research. In addition to structural aspects, the researchers studied a number of external and internal contingencies. They found that 'structuring of activities' was positively related to organizational size (Inkson et al., 1970: 324; Pugh et al., 1969b: 109-111). Larger organizations tended to be more bureaucratic in the sense that they exhibit greater standardization, documentation, and specialization. The Aston group solely described a positive association between size and 'structuring of activities'. However, it did not claim that fit in this relationship yielded higher performance.

Child (1972a; 1973a; 1973b) replicated the Aston study based on a nationally representative sample with 82 firms from six industries located across England and Scotland. His study was referred to as the 'National study' (e.g., Child, 1973b: 169; Child & Mansfield, 1972: 373; Donaldson et al., 1975: 453). He found that the Aston Group's 'structuring of activities' cluster and the centralization construct are not independent but negatively correlated. Child (1972a: 174) called them "related elements ... of administrative control" as control is either directly exercised through centralization or indirectly through high levels of standardization, documentation, and specialization. His research confirmed that organizational structure was related to size. Standardization, documentation, and specialization increased whereas centralization decreased with size but at a decelerating rate with respect to size (Child, 1973b: 171-183). Large organizations were more bureaucratic than smaller ones but much less than they would be with a linear relationship between size and the structural constructs. Child (1973a: 331-332; 1974: 186-188; 1975: 19-24) also interpreted size as a contingency factor. He showed empirically that large organizations with more bureaucratic structures – i.e., higher standardization, documentation, specialization, and lower centralization – tended to have higher performance than

less bureaucratic structures in organizations of comparable size (Child, 1975: 20-22).

The researchers *Blau & Schoenherr* from the University at Chicago significantly contributed to the development of bureaucratic theory of organizations. Their empirical investigations, too, build upon Weber's propositions (Blau, 1965: 333-337; 1970: 203; Blau & Schoenherr, 1971: 4-7). Blau & Schoenherr (1971: 12-20) analyzed a large number of public sector employment security agencies in the U.S. Their results confirmed the findings of the Aston Group and Child in the sense that size enhances bureaucracy (Blau & Schoenherr, 1971: 56-81, 90-97, 113-122). Large organizations were found to score higher in specialization, standardization, formalization²⁹, and lower in centralization than smaller firms with a simple structure. With increasing size there was a shift from a simple structure with direct control via centralized decision-making authority to indirect control through a bureaucratic structure. The researchers developed a more encompassing concept of structure that they called structural differentiation (Blau, 1970: 201).³⁰ Structural differentiation referred to the extent to which an organization is divided into separate parts. It subsumed concepts such as the number and size of organizational units, span of control, the number of job titles, and vertical span – defined as the number of hierarchical levels. Blau & Schoenherr (Blau, 1970: 204; 1972: 5; Blau & Schoenherr, 1971: 62-81) found size to be a cause of structural differentiation but at decelerating rates. For example, the number of managers and administrative staff grows with the size of the organization but proportionally less quickly. The resulting increase in average span of control was interpreted as economies of scale in administration (Blau, 1970: 210; 1972: 17-18). The feasibility of a higher span of control was explained with more rules and increased specialization between departments. As jobs were more homogenous within departments, they were

²⁹ Blau & Schoenherr (1971) used the term 'formalization' in its initial meaning which is equivalent to today's 'documentation' (section 2.3.3).

³⁰ 'Structural differentiation' needs to be distinguished from 'differentiation' as used by Lawrence & Lorsch (section 2.4.2).

easier to administer. Other aspects of structural differentiation such as the number and size of organizational units, the number of occupational positions, and vertical span were also empirically found to increase with size but at decreasing rates.

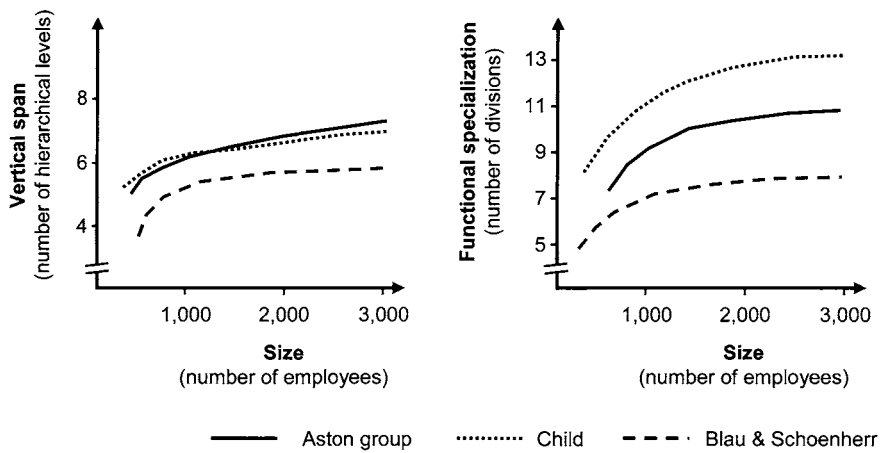


Figure 8: Relationships between size and the organizational constructs of vertical span and functional specialization³¹ according to the Aston group (Pugh et al., 1969b), Child (1973b), and Blau & Schoenherr (1971), (graphics based on Astley, 1985: 209; Child, 1973b: 172-173)

Figure 8 visualizes some of the relationships identified by the Aston group (Pugh et al., 1969b), Child (1973b), and Blau & Schoenherr (1971). The researchers findings are summarized in Table 3.

³¹ Functional specialization is an aspect of overall specialization and describes the degree to which work is divided between specific functions or divisions of an organization (Child, 1972a: 164; Pugh et al., 1968: 73).

Research studies	Contingency factor	Organizational structure concepts	Findings
<p>The Aston group (Inkson et al., 1970; Pugh & Hickson, 1976; Pugh et al., 1969a; Pugh et al., 1963; Pugh et al., 1968; 1969b; Pugh & Hinings, 1976; Pugh & Payne, 1977)</p>	Size	Four clusters of organizational structure: 'structuring of activities' including standardization, documentation, and specialization, 'concentration of authority' including centralization, 'line control of work flow', and 'relative size of supportive component'	Size was positively associated with bureaucratic structure being high in 'structuring of activities', i.e., high in standardization, documentation, and specialization
<p>Child (1972a; 1973a; 1973b; 1974; 1975) Child & Mansfield (1972) Child & Kieser (1979)</p>	Size	Bureaucratic structure with high standardization, documentation, specialization, and low in centralization vs. simple structure being high in centralization but low in the other constructs	Size was a contingency of organizational structure at decreasing rates; 'structuring of activities' was negatively associated with centralization as control could be exercised through a bureaucratic structure or centralization; more bureaucratic structures associated with higher performance in large organizations
<p>Blau (1965; 1970; 1972) Blau & Schoenherr (1971)</p>	Size	Structural differentiation (vertical span, number and size of organizational units, span of control, number of job titles, etc.); bureaucratic vs. simple structure	Size was a determinant of organizational structure; large organizations were more bureaucratic, i.e., had higher specialization, formalization, and structural differentiation but lower centralization; relationships between size and organizational constructs had declining rates with respect to size

Table 3: Examples of pioneering bureaucratic theory research

Following the pioneering contributions by the Aston group, Child, and Blau & Schoenherr, a number of researchers contributed to sharpen and underpin bureaucratic theory. The positive correlations among the structural constructs of specialization, standardization, and documentation and positive rela-

tions between the size contingency and these constructs were empirically replicated across different types of work organizations such as banks, churches, colleges, governmental, hospitals, labor unions, and manufacturing firms (Donaldson, 1986: 75-77; 1996a: 138-139; Miller, 1987: 317).

Meta-reviews revealed considerable correlations between size and these structural constructs. Miller (1987: 317) found size to be positively correlated with specialization by +0.53 based on 27 studies of 1,066 organizations from 11 different countries. All of the studies identified positive relationships between size and specialization, more than half of them found correlation coefficients in excess of +0.5 (Miller, 1987: 316). The correlation between size and formalization, i.e., standardization and documentation (section 2.3.3), was similarly high at +0.42.³² The results were virtually identical across sub-samples of different industries and countries (Miller, 1987: 318).

Similarly, Donaldson (1986: 74-82) in his meta-review of 35 studies investigating a total of 1,241 organizations computed the correlations between size and specialization to be +0.61, between size and standardization +0.55, and +0.51 for the size-documentation relationship.³³ All of the surveyed research studies found positive relationships between size and specialization as well as between size and documentation. After correction for reliability, the correlation coefficients were even higher at +0.82 for the size-specialization relationship, +0.69 for size and standardization, and +0.59 for size and documentation (Donaldson, 1986: 90).

The results on centralization yielded a somewhat different picture. Many researchers identified negative relationships between centralization and

³² The size-formalization correlation coefficient was computed with a sub-sample of 834 organizations from 24 studies (Miller, 1987: 317).

³³ The size-standardization correlation was based on a sub-sample of 9 studies with 309 organizations (Donaldson, 1986: 80) and the coefficient for size and documentation on a sub-sample of 20 studies with 595 organizations (Donaldson, 1986: 82). Donaldson (1986: 69, 80-82) distinguished between standardization and formalization and used the latter in its initial meaning to refer to documentation (section 2.3.3).

the structural constructs of specialization, standardization, and documentation (e.g., Donaldson & Warner, 1974: 730; Grinyer & Yasai-Ardekani, 1981: 480; Hinings & Lee, 1971: 88; Mardsen et al., 1994: 917; Routamaa, 1985: 506; Wagner III et al., 1988). However, other researchers obtained partly differing results that question to some degree a general negative relationship between centralization and the other structural constructs (e.g., Holdaway et al., 1975: 45; Mansfield, 1973: 485-487; McMillan et al., 1973: 154; Reimann, 1977: 559). For example, Mansfield (1973: 487), in his analysis of the National study data, found the relationships between centralization and both specialization and standardization to be very different across six classes of organizational size. He also identified a negative association between centralization and documentation³⁴ thereby confirming the studies mentioned above (Mansfield, 1973: 487).

Meta-reviews also found mixed results on the relationship between size and the centralization construct (e.g., Donaldson, 1986: 82-85; Miller, 1987: 318-319; Pugh & Hickson, 1976: 164). While in general there was a negative relationship between size and centralization (Grinyer & Yasai-Ardekani, 1980: 416; Inkson et al., 1970: 321; Mansfield, 1973: 486; Marsh, 1992: 268; Miller, 1987: 317-318), the findings varied across different areas of decision-making such as budgetary expenditure, production, personnel, marketing, or buying (Grinyer & Yasai-Ardekani, 1980: 418) and also across different cultural settings (Child, 1981: 319; Donaldson, 1986: 82-85; Hickson & McMillan, 1979a: 191-196; Lincoln & Hananda, 1986: 348-360).

A number of empirical studies confirmed the relationship between size and structural differentiation. Blau & Schoenherr's (1971) findings were replicated in private and public work organizations in the U.S. (e.g., Goldman, 1973; Jarley et al., 1997; Mardsen et al., 1994), Canada (e.g., Daft & Bradshaw, 1980), the U.K. (e.g., Child, 1973b; Grinyer & Yasai-Ardekani, 1981), Germany (e.g., Child & Kieser, 1979) and other countries. However, some researchers identi-

³⁴ Referring to the Aston group, Mansfield (1973: 480) used the term 'formalization' in its initial meaning to refer to 'documentation' (section 2.3.3).

fied other causes of structural differentiation in addition to size, for example, student and community needs for the establishment of new academic departments in universities (e.g., Daft & Bradshaw, 1980: 441) or a broader organizational task scope for vertical differentiation (e.g., Dewar & Hage, 1978: 124).

Another dimension that was studied in bureaucratic theory is divisionalization. An increase in divisionalization transformed a simple structure into a bureaucratic one. Divisionalization was also found to be positively associated with organizational size (Blau & Schoenherr, 1971: 69-72; Grinyer & Yasai-Ardekani, 1981: 473; Grinyer et al., 1980: 201). The construct was therefore considered to be part of bureaucratic theory.³⁵

Divisionalization was used to describe the degree to which work in an organization was divided among relatively independent "quasi-firms" (Mahoney, 1992: 51-52) such as geographic or product divisions, whose heads typically reported directly to the CEO or the board (Child, 1984: 93-97; Mintzberg, 1979: 381-382). In contrast, work in a functional organization was jointly or subsequently performed by interacting departments such as R&D, planning, production, and marketing & sales.

In line with the classical arguments of Chandler (1990: 13-15), divisionalization was found to be induced by a strategy of diversification into distinct areas such as different products or geographic markets.³⁶ A large number of research studies of corporations throughout the world supported this idea (e.g., Capon et al., 1987; Chenhall, 1979; Dyas & Tanheiser, 1976; Fligstein, 1985; Hamilton & Shergill, 1992; Hill & Pickering, 1986; Palmer et al., 1993; Pavan,

³⁵ The values of specialization, formalization, and centralization are determined by size according to bureaucratic theory, whereas divisionalization is driven by the task interdependence contingency. Therefore, divisionalization, albeit being positively associated with size, is somewhat separate from the other constructs of organizational structure.

³⁶ Chandler (1990: 13-17) argued that structure follows strategy. In fact, this rather broad claim was based on the relationship between diversification and divisionalization. It was therefore criticized for neglecting the many more aspects of strategy and structure (e.g., Miller, 1986: 233). A discussion of strategy leading to structure versus structure leading to strategy is provided in section 2.6.2.

1976; Rumelt, 1974; Suzuki, 1980). Diversification strategy was reflected in the task interdependence contingency (section 2.3.2). Therefore, task interdependence was also a contingency of bureaucratic theory. A divisionalized structure was argued to fit low task interdependence, i.e., high diversification, whereas high task interdependence was associated with a more functional structure (e.g., Chandler, 1990: 14-17; Donaldson, 2001a: 28, 77; Hamilton & Shergill, 1992: 98-99; Rumelt, 1974: 69-70).

2.5 Synthesis of organic and bureaucratic theory with Donaldson's parsimonious model of contingency theory of organizations

Organic theory and bureaucratic theory differ along several dimensions. They portray different organizational models, rely on different contingencies, and find different values of structural constructs to fit specific conditions. The following section pinpoints and explains some of the differences between organic and bureaucratic theory. It shows how organic and bureaucratic theory relate to and complement one another as elements of an overarching theory that is summarized in the parsimonious model of structural contingency theory recently developed by Donaldson (2001a: 95-98).

The organic theory research builds upon the *mechanistic-organic model* of organizational structure. While the mechanistic ideal-type structure is high in centralization, specialization, and formalization, the organic structure is low in these dimensions. As the model spans a single-dimensional scale between the two ideal-type structures, there are no mixed forms regarding the three constructs. In other words, an organization is simultaneously either high (mechanistic) or a low (organic) or somewhere in between on all three dimensions of centralization, specialization, and formalization. In contrast, bureaucratic theory distinguishes the *simple* and the *bureaucratic structure*. The former is low in specialization and formalization as means of indirect control but high in centralization. The bureaucratic structure is dominated by indirect control and therefore high in specialization and formalization but low in centralization. It is

also high in structural differentiation. The organizational models and ideatypes of organic and bureaucratic theory are presented in Figure 9.

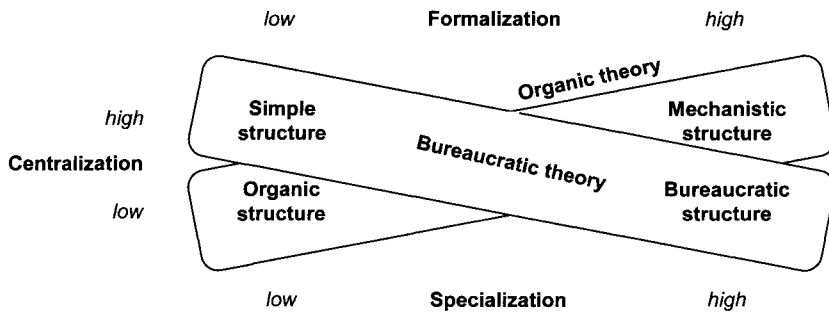


Figure 9: Organizational models of organic and bureaucratic theory (based on Astley, 1985: 223-224; Donaldson, 2001a: 25; Zeffane, 1989: 345)

In addition to different organizational models, organic and bureaucratic theory also focus on different contingencies and propose different structure-contingency constellations to be in fit. The main contingency of organic theory is task with *task uncertainty* being the major and *task interdependence* being the minor contingency. The two contingency factors integrate a number of other external and internal contingencies (section 2.3.2). According to organic theory, the mechanistic structure fits low task uncertainty whereas the organic structure yields superior performance under high task uncertainty conditions. This proposition forms the core of organic theory. In addition, some research studies recommend fit of the mechanistic-organic model to the value of the task interdependence contingency (Table 2).

Bureaucratic theory uses *organizational size* as its major contingency. It argues for more simple structures to fit small organizations and proposes more bureaucratic structures for large organizations. In addition to size being the major contingency regarding structural differentiation, centralization, specialization, and formalization, *task interdependence* is the minor contingency in bureaucratic theory as it reflects diversification strategy. Low task interde-

pendence, i.e., high diversification, fits divisionalization whereas high task interdependence fits a more functional structure. Figure 10 depicts how the contingencies of organic and bureaucratic theory complement each other and overlap in the task interdependence contingency.

		Contingency value	
		<i>low / small</i>	<i>high / large</i>
Organic theory	Task uncertainty	Mechanistic structure (CE-SP-FO)	Organic structure (ce-sp-fo)
	Task interdependence	Mechanistic structure Divisional structure	Organic structure Functional structure
Bureaucratic theory	Size	Simple structure (CE-sp-fo)	Bureaucratic structure (ce-SP-FO)

(HIGH/low values in centralization (CE/ce) - specialization (SP/sp) - formalization (FO/fo))

Figure 10: Contingency-structure relationships in fit according to organic and bureaucratic theory

As shown in Figure 10, organic and bureaucratic theory find different values of the organizational constructs to be in fit with specific conditions. For example, organic theory argues that centralization, specialization, and formalization all need to be reduced with increasing with task uncertainty (topmost box in Figure 10). Bureaucratic theory proposes that centralization should decrease whereas specialization and formalization increase with size (bottommost box in Figure 10). Accordingly, organizations cannot follow the pattern of both sub-theories. There seems to be a contradiction in the arguments.

Much of the contradiction stems from the locus of interest of organic and bureaucratic theory (Donaldson, 2001a: 92). While the latter concentrates on administrative functions of the organization such as accounting and personnel (section 2.4.3), organic theory investigates the work-flow in the organization that transforms inputs into outputs (section 2.4.2). In addition, bureaucratic

theory focuses more on the overall organization, whereas organic theory is primarily concerned with local variations (Donaldson, 2001a: 92). Accordingly, size is of greater relevance in bureaucratic theory, and the task contingency prevails in organic theory due to its focus on work-flow and micro-organizational structure.

These differences create some contradiction in the arguments of the two sub-theories at first sight. The contradictions can be resolved as shown below. The differences also demonstrate that organic theory and bureaucratic theory are each valid in their own domain and research tradition being micro- and macro-organizations, respectively (sections 2.4.2 and 2.4.3). They complement one another in a comprehensive explanation of the many facets of organizational structure (Donaldson, 2001a: 94).

After pointing to the differences between organic and bureaucratic theory, the following paragraphs highlight the common aspects. A closer examination of the many research studies from organic and bureaucratic theory reveals that there are three core elements on which they are based (Donaldson, 2001a: 7):

- There are *associations* between the contingencies and the constructs of organizational structure. The bivariate relationships typically are linear or curvilinear. If high values of a contingency factor are associated with high (low) values of structural constructs, then low contingency values are associated with low (high) structural values. There is no change in the direction of the relationship, i.e., the sign. An exception is Woodward's (1965; 1971) proposition that with increasing production continuity first the organic structure, then the mechanistic structure, and then again the organic structure are appropriate (Figure 7). In more recent contingency theory research, the associations between contingen-

cies and structural constructs are often presented as correlations³⁷ (e.g., Mahoney, 1992: 58; Palmer et al., 1993: 114-115), statistical independence tests³⁸ (e.g., Krickx, 2000: 322-323), or regressions³⁹ (e.g., Hitt et al., 2001: 21; Keller, 1994: 174).

- The contingencies are the *determinants* of organizational structure. Numerous researchers from both organic and bureaucratic theory argue that organizational structure needs to be designed in accordance with the values of the contingencies. Changes in the contingency values lead to value changes of the structural constructs as shown for task uncertainty (e.g., Burns & Stalker, 1996: 119-121), task interdependence (e.g., Van de Ven et al., 1976: 328-332), and size (e.g., Blau & Schoenherr, 1971: 56-81). For example, the implementation of a diversification strategy lowers an organization's task interdependence and, in turn, causes the adoption of a divisional structure. The second proposition adds a dynamic perspective to the above mentioned associations.
- There is a level of the structural constructs that *fits* the contingency values at hand and therefore yields high performance. In contrast, misfit with too high or too low levels of the structural constructs lowers performance. Eventually, organizational structure needs to be redesigned in reflection of the contingency values. This third argument provides the rationale behind the first two points as it explains why the contingencies determine structure. The "trivariate relationship" (Donaldson, 2001a: 10)

³⁷ The correlation coefficients used include the Pearson product-moment correlation coefficient for metric-scaled variables and the Spearman rank-order correlation coefficient for ordinal-scaled variables (e.g., Mahoney, 1992: 58). The former is employed in this thesis as outlined in section 3.7.

³⁸ Among these tests the Chi-square test is probably the most widely used test of statistical independence as it can be applied for all levels of measurement starting with nominal-scaled data (e.g., Krickx, 2000: 322).

³⁹ The regressions are typically linear least square regressions with logarithmic transformation of organizational size, when size is the independent variable (section 3.7). The quality of the regressions is assessed with the coefficient of determination R^2 and the F-test of significance (e.g., Hitt et al., 2001: 21; Keller, 1994: 174). Both quality measures are used in this thesis as described in section 3.7.

between contingencies, organizational structure, and performance is at the heart of all structural contingency theory (section 2.3.4).

Based on these three commonalities across the various strands of structural contingency research, scholars have sought to clarify the relationship of organic and bureaucratic theory. Some argued the two theories are essentially separate but equal (e.g., Dewar & Hage, 1978: 132; Hull, 1988: 394-395). Others attributed all effects to one particular contingency factor such as Astley (1985: 208) to size, Collins & Hull (1986: 158) to task uncertainty, or Gerwin (1979a: 48; 1979b: 79) to task interdependence. Similarly, Mintzberg (1979: 234) referring to Blau & Schoenherr (1971) linked the size contingency with the values of a number of structural constructs.⁴⁰ Khandwalla (1974), Randolph & Dess (1984), Miller, Dröge & Toulouse (1988) and others developed multivariate models in which a number of contingency factors and the structural constructs for which they are contingencies are considered simultaneously.

Building on their work, Donaldson (2001a: 95-98) has developed an advanced model that represents an integration of organic and bureaucratic theory. He argues that the level of the size contingency and the level of the task contingency, i.e., task uncertainty and task interdependence, are not independent but causally linked.

Size causes specialization and structural differentiation but decreases centralization. With greater specialization, labor is divided more and jobs become narrower in scope. Hence, task uncertainty is reduced. Lower task uncertainty allows to codify jobs into rules and standard procedures which increases formalization. As a result, size is the ultimate cause of formalization while task uncertainty is the intervening factor that determines its absolute level. Size also causes diversification. Greater diversification, in turn, lowers task interdependence and leads to divisionalization. Again, size affects organ-

⁴⁰ Mintzberg (1979: 234) mentioned in a footnote that the conditions of technology and environment are assumed to be held constant.

izational structure via the task contingency. In addition, size is positively related to innovation activity.⁴¹ As innovation reflects higher task uncertainty, the “organicness” (Donaldson, 2001a: 97) of organizational structure is increased through lower specialization and formalization, however, only locally in certain parts of the overall organization. Figure 11 summarizes the causal relationships described by Donaldson (2001a: 95-98).

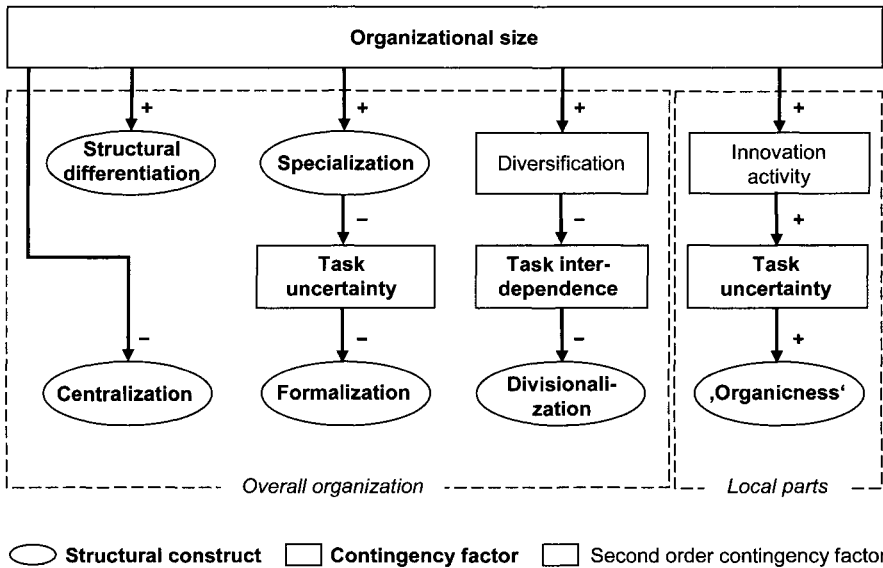


Figure 11: Parsimonious model of structural contingency theory according to Donaldson (2001a: 95-98)

The model integrates the three contingencies organizational size, task uncertainty, and task interdependence. With size being the most influential contingency, bureaucratic theory is at the core of the overall model of contin-

⁴¹ The relationship between organizational size and innovation has not been introduced in the previous sections as the other associations included in Donaldson's (2001a: 95-98) model. It is of little importance for this thesis (section 2.7). The proposed relationship was confirmed by most of the 36 research studies included in Damanpour's (1992) meta review. Overall, there was a positive, statistically significant mean correlation of $\rho = +0.32$ between organizational size and innovation (Damanpour, 1992: 381, 389).

gency theory while organic theory supplements it through localized effects. As the level of the size contingency and the task contingency are linked to each other, organic theory and bureaucratic theory merge into an overarching contingency theory of organizations.

2.6 Critical review of contingency theory of organizations

2.6.1 *Criticism of contingency theory of organizations*

Structural contingency theory has attracted considerable criticism within the organization theory community. The critics' arguments can be grouped into four distinct categories for the purpose of this thesis.

- The contingency theory of organizations has been criticized for being merely a loose grouping of rather disparate concepts without a uniting theoretical background (e.g., Bourgeois, 1984: 584; Frese, 1992: 194; Kieser, 2002a: 183; Schoonhoven, 1981: 350-351; Türk, 1989: 10). Its research studies investigate the relationships between a variety of structural constructs (section 2.3.3) and a similarly large number of contingency factors (section 2.3.2). In addition, different values of structural constructs are recommended to be in fit with specific conditions according to the organic and the bureaucratic sub-forms of the theory (sections 2.4 and 2.5). Contingency theory was therefore criticized as expanding in multiple dimensions without sharpening underlying concepts (e.g., Kieser, 2002a: 183), i.e., as not having a well-developed set of propositions (Schoonhoven, 1981: 350).
- The theory has been said to be not comprehensive as it neglects important determinants of organizational structure (e.g., Frese, 1992: 194-195; Kieser, 2002a: 183, 189, 191; Schreyögg, 2003: 355-370; Türk, 1989: 3, 10). It holds that organizational structure needs to fit the values of different contingency factors for high performance. Firstly, there is little evidence that contingencies such as size and task are the most important ones.

Secondly, as sub-optimally performing structures are not immediately eliminated by market forces (section 2.3.4), there is room for other aims to be pursued in the organizational design process. For both reasons organizational structure might be influenced by factors that the theory does not capture. For example, there seem to be differences in how exactly specialization, formalization, and centralization are implemented in different cultural settings (Kieser, 2002a: 191; Kieser & Kubicek, 1992: 253-266).

- Contingency theory claims quasi automatic relationships between the contingency factors, organizational structure, and performance with the contingencies being the ultimate cause of structure. This perspective is questioned by a number of scholars (e.g., Barley, 1990: 61-62; Bourgeois, 1984: 586-590; Child, 1972b: 13-16; Frese, 1992: 115, 193; Heise, 1972: 59-60; Hickson et al., 1988: 13; Kieser, 2002a: 185; Miller, 1981: 4-7; Miller & Mintzberg, 1983: 60; Pennings, 1987: 223-225; Schreyögg, 1980: 308-311; 1982: 75; 2003: 355-370; Staehle, 1994: 53; Türk, 1989: 2). Contingency theory's situational determinism considers management to merely implement an organizational structure in fit with the contingency values. Management has not much power to either actively design the structure or to change the contingency situation. This view rejects arguments about choice and free will in organizational design as proposed by Child (1972b: 13-16), Bourgeois (1984: 591-593), and others. It also disputes the idea of 'functional equifinality' in the sense that multiple structural designs perform equally well under specific contingency situations (Doty et al., 1993: 1201-1202; Miller, 1981: 6; Pennings, 1987: 225; Van de Ven & Drazin, 1985: 335).

In particular the causal direction of the relationships has triggered a debate. While contingency theory argues for unidirectional influence of the contingencies on structure, critics of the theory postulate reverse causality or reciprocal causality in the sense that contingencies influence structure and vice versa (e.g., Miller, 1981: 7-8; Schreyögg, 1980: 310-311; 1982: 75). For example, it has been challenged that contingencies such as

size and strategy really cause structure or if alternatively structure is a cause of size and strategy (e.g., Heise, 1972: 59-60; Hilton & Aldrich, 1972: 47; Miller, 1981: 7-8).

- Finally, contingency theory takes a conservative stance and provides little help for innovations in the design of organizational structures (Barley, 1990: 61-62; Kieser, 2002a: 184, 189; Türk, 1989: 7). It legitimizes existing practices and thus hampers the discovery of better alternatives. It also provides little guidance on how exactly organizations should be designed as the informational value of its findings is relatively low. For example with regard to centralization of decision-making, contingency theory states that centralization needs to decrease with organizational size to achieve fit. It does not, however, hint which decisions should be made centrally at the top of the organization, which decisions should be delegated, and to which hierarchical level.

This section has summarized the main points of criticism about the contingency theory of organizations. In the following, the arguments are discussed in light of Donaldson's (2001a: 95-98) new model of structural contingency theory and with regard to their implications on this research.

2.6.2 Discussion of criticism and research implications

The supporters of structural contingency theory, above all Donaldson (1982; 1985; 1986; 1987; 1995; 1996a; 1996b; 1997; 2001a; Hickson et al., 1988: 28-32), have defended the theory in response to the criticism it has attracted. Many of their arguments are based on the findings of a vast number of empirical studies in support of the contingency theory of organizations. For example, the meta-reviews by Miller (1987) and Donaldson (1986) found correlation coefficients between size and constructs of organizational structure that are remarkably high by the standards of social science (section 2.4.3). With the exception of the size-centralization relationship, the results were nearly identical across sub-

samples from different industries and across different countries thereby confirming the findings of cross-societal studies (e.g., McMillan et al., 1973). Some of the correlation coefficients – for example, between size and functional specialization at +0.82 (Donaldson, 1986: 90) – were so high that there remained little scope for other factors to intervene. The influence of factors such as CEO personality or CEO functional background on organizational structure were secondary to and weaker than the effects of the major contingency factors, at least for large and medium-sized firms (Donaldson, 1996b: 68; 1997: 84).

The strength of the relationships between contingency factors and organizational structure not only refutes significant influence of other factors, it also lends support to quasi automatic relationships. For example, Donaldson (1996a: 14-44; 1997: 80-81) questioned that there really exists much choice in organizational structure under the given contingency conditions thus rebuffing the criticism about situational determinism. His view was supported by Pugh (Greenwood & Devine, 1997: 207) who had conducted organization theory research for more than four decades since the 1950s. Human action is an intervening step in the process of organizational design, however, the action is not a free choice of structure but largely determined by the situational imperative (Donaldson, 1997: 80; Greenwood & Devine, 1997: 207). The findings counteract the argument of Child (1972b: 13-16) who had offered an alternative to the adaptation of structure to contingencies by manipulating contingency factors to fit structure. Empirical results, however, demonstrated that the manipulation of contingencies is a feasible option only for an “elite” (Donaldson, 1987: 3) group of firms and a preferable option only for an infinitesimal minority. The ratio between structure adjusting firms and contingency adjusting firms was found to be in excess of 15 to 1 (Donaldson, 1987: 15).

The situational determinism of structural contingency theory argues less stringently than other organization theories such as population ecology approaches (Table 1). While the latter claims an inexorably relentless selection and retention of organizational forms by certain environments, the former acknowledges that organizations can purposefully adapt to environmental con-

ditions. This notion of determinism has been supported by many empirical studies regarding the concept of fit and the proposed relationships between contingency factors, organizational structure, and performance (e.g., Child, 1975; Donaldson, 1987; Ezzamel & Hilton, 1980; Hamilton & Shergill, 1992; Hill et al., 1992a; Hill & Pickering, 1986; Pennings, 1987). For example, Donaldson (1987: 14) discovered that firms, whose performance had suffered as a result of misfit such as between a diversification strategy and a functional structure, were more than four times more likely to change their structure than firms in fit. More than 70 percent of the firms that made structural changes moved from misfit to fit while only 5 percent moved from fit to misfit (Donaldson, 1987: 14).

A large number of research studies showed that contingencies such as a diversification strategy lead to organizational structure such as divisionalization (e.g., Amburgey & Dacin, 1994; Burgelman, 1983; Dyas & Tanheiser, 1976; Fligstein, 1985; Grinyer & Yasai-Ardekani, 1981; Rumelt, 1974; Suzuki, 1980). Changes in strategy were followed by structure changes in 28 large German companies between 1950 and 1970, while only two firms adapted their strategy after a change in structure (Dyas & Tanheiser, 1976: 70). Pfeffer (1997: 161) concluded that "the evidence is that firms diversified first and then changed their structure, not the other way around, as would be expected if structure caused strategy". The research studies did not find reverse causality. Some of them lent support to reciprocal causality (e.g., Amburgey & Dacin, 1994; Burgelman, 1983). For example through the set-up of the decision-making process (Fredrickson, 1984b; 1986), structure influenced strategy in parallel to strategy influencing structure. However, as Amburgey & Dacin (1994: 1446) summarized, "strategy is a much more important determinant of structure than structure is of strategy".

Donaldson's new model of structural contingency theory (Figure 11) combines many of the elements of organic and bureaucratic theory. It integrates the contingencies of size and task, and, in turn, the influences of many other factors considered to be determinants of organizational structure in contingency theory (section 2.3.2). Likewise, the model assimilates many of the

organizational constructs (section 2.3.3) by using structural differentiation, specialization, centralization, formalization, and divisionalization to succinctly depict organizational structure. It also offers an explanation of *how* the contingency factors and structural constructs are related to each other and – together with the SARFIT model – *why* these relationships exist. As a result, the model addresses the criticism about contingency theory to be a loose grouping of disparate concepts without a uniting theoretical background.

The previous paragraphs present counterarguments to three categories of criticism listed in section 2.6.1. First, the contingencies of size and task can be considered to be the most important determinants of organizational structure. Second, there appear to be strong relationships between the contingency factors and the constructs of organizational structure with the contingencies being the cause of structure. Third, there are models of contingency theory that provide a uniting theoretical framework for the many concepts considered in structural contingency theory research. Whether or not one accepts these counterarguments, they seem to be as defensible as the critical propositions provided in section 2.6.1. As a result, the first three categories of criticism do not ban contingency theory of organizations from being selected as the guiding theory of this thesis. In addition, the fourth and last category of criticism appears to have little relevance for the pursuit of the aims of this research (section 1.4). This thesis is concerned with the variety of existing organizational structures in the management consulting industry. As it investigates the status quo, the conservative stance inherent in structural contingency theory seems to be no disadvantage.

2.7 Research hypotheses

The research hypotheses are developed from the parsimonious model of structural contingency theory by Donaldson (Figure 11) as outlined in the following. Organizational size is the dominant contingency factor in bureaucratic theory (section 2.4.3). It is considered to have numerous effects on the

structure of organizations. First, an increase in size leads to the disaggregation of organizations. Horizontally, organizations are divided into departments and positions, whereas vertically the number of hierarchical levels increases. The extent to which an organization is organized as separate parts is referred to as structural differentiation. Accordingly, the first research hypothesis is:

H1: An increase in size leads to an increase in structural differentiation.

Second, as organizations grow in size and are disaggregated, the tasks of the organization are divided as well. There is little value in the structuring of an organization if each unit continues to carry out the entire spectrum of activities. Therefore, tasks with similarities are grouped together and assigned to particular units. The grouping of tasks may, for instance, be done by function, by product, or by geographical region. In larger organizations that tend to be more split into parts than their smaller peers, the overall task of the organization tends to be more divided as well. Specific tasks are assigned to units that specialize in them. This argument leads to the second hypothesis:

H2: An increase in size leads to an increase in specialization.

Third, size growth reduces management's ability to personally guide and supervise the tasks performed within the organization. While in small organizations decision-making authority may be concentrated with few individuals, it needs to be more distributed in larger organizations. The third hypothesis therefore argues:

H3: An increase in size leads to a decrease in centralization.

Task uncertainty is a major contingency of organic theory (section 2.4.2). Organic theory maintains that an organic structure being low in specialization, centralization, and formalization is effective under high task uncertainty conditions while a mechanistic structure fits low task uncertainty. Donaldson (2001a: 96) described the relationship between specialization and task uncertainty more specifically. He argues that as specialization increases, labor is divided to a greater extent so that the tasks of each unit become narrower in scope and are

repeated more frequently. As a result, task uncertainty is reduced due to higher specialization, as expressed in the fourth hypothesis:

H4: An increase in specialization leads to a decrease in task uncertainty.

Another hypothesis can be derived as a syllogism from hypotheses H2 and H3. As size growth is expected to increase specialization, and increasing specialization is expected to reduce task uncertainty, size growth is also expected to decrease task uncertainty. The explanation of this relationship is as follows. Organizations aim to reduce task uncertainty associated with their operations. Task uncertainty results from technology and innovation, among other factors. With increasing size organizations acquire the opportunity to structure themselves in such a way that the influence of these factors is concentrated in specific parts of the organization. Overall task uncertainty is thereby reduced in two ways. First, some units such as accounting, personnel, and other overhead functions are less influenced by task uncertainty than others. Second, the units which are strongly affected gain experience in dealing with task uncertainty as they face challenges more frequently. The resulting hypothesis is at the heart of Donaldson's arguments in the sense that size and the task contingency are not independent but causally linked (Donaldson, 2001a: 96):

H5: An increase in size leads to a decrease in task uncertainty.

As task uncertainty is reduced, work becomes better predictable and can be more easily guided by rules and procedures which are often written down in manuals. Consequently, formalization increases. This argument is consistent with organic theory which claims that low task uncertainty requires a mechanistic structure with high levels of formalization, specialization, and centralization. High task uncertainty, in turn, requires low formalization, which leads to the next hypothesis:

H6: An increase in task uncertainty leads to a decrease in formalization.

Formalization can also be linked to the size contingency. Larger organizations are divided into organizational units and have taller hierarchies down to which decision-making authority is delegated. Size growth weakens the ability of top management to control lower levels of the hierarchy. Management therefore relies to a greater extent on means of indirect control such as rules and procedures to guide the organization. The connection between size and formalization follows as well from the combination of hypotheses H5 and H6. As task uncertainty is expected to reduce formalization, and size is expected to reduce task uncertainty, size is also expected to increase formalization. This relationship is another aspect of bureaucratic theory similar to hypotheses H1 through H3:

H7: An increase in size leads to an increase in formalization.

All hypotheses are generic in the sense that they do not pertain to any particular type of organization. Six hypotheses are concerned with relationships between contingency factors and constructs of organizational structure while hypothesis H5 links the two contingencies of size and task uncertainty. The hypotheses not only state that there are relationships between these concepts, they also characterize the concepts as being positively or negatively associated with each other. In addition, the hypotheses claim one factor to be the driving force behind the other, i.e., they describe cause-and-effect relationships.

All hypotheses are concerned with either organizational size or task uncertainty, or both contingencies. They also refer exclusively to the section of Donaldson's model (Figure 11) that describes the overall organization. The relevant part of the model including the hypotheses H1 through H7 is presented in Figure 12.

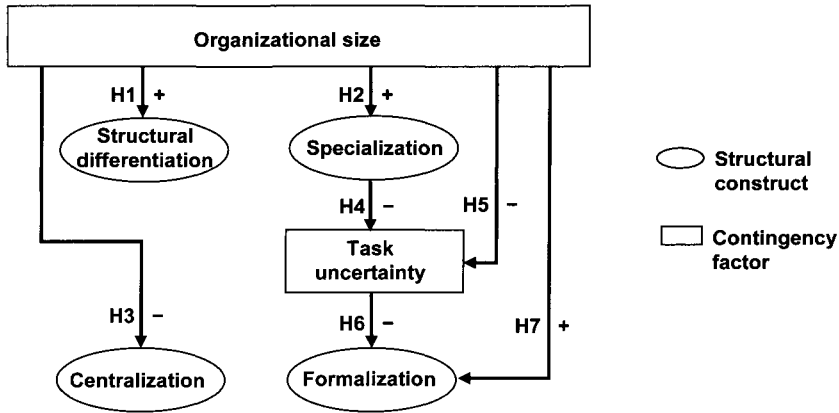


Figure 12: Research hypotheses based on Donaldson's model of structural contingency theory (Figure 11)

In addition to these hypotheses, Donaldson's model also contains relationships in local parts of the organization and relationships around the task interdependence contingency (Figure 11). These aspects are not considered further in this thesis for the following reasons.

This research assesses whether organizational diversity of management consultancies can be explained by structural contingency theory. Accordingly, it is primarily concerned with effects on the level of the unit of analysis which often equals an overall firm (section 1.3.3). Partial aspects of organizational structure that influence only small fractions of an organization such as local 'organicness' are therefore outside of the focus of this thesis.

The task of management consulting is typically performed by a team of consultants (section 3.2.1.1). The team works separately and for the most part independent from other consulting teams. It often performs all steps necessary for the delivery of the consulting service by itself (Kaiser & Bürger, 2004: 401-402). Support units such as information research or graphic design – if such units exist at all – help to enhance efficiency (section 3.3.2.4). They may or may not be utilized by the consulting team and are anything but indispensable for the provision of consulting services. Therefore, the work-flow of 'production'

does not involve different organizational units of the consultancy. Because work is so concentrated within the team of consultants, the concept of task interdependence between different organizational units is hard to justify in the case of consulting firms.

Moreover, the consulting team is put together temporarily for the duration of a particular consulting project. It is not a permanent organizational unit, further questioning the applicability of the task interdependence concept.

3 Methodology

The seven hypotheses developed from structural contingency theory in Chapter 2 are to be tested empirically. The following chapter turns the attention from the theoretical background to the methodology of the empirical analysis in a management consulting context. The research design as outlined in section 1.3.2 comprises both qualitative and quantitative elements. It uses primary and secondary cross-sectional data, the first of which is collected during a series of personal interviews in a sample of consultancies.

The first section of this chapter provides an overview of the methodology. Section 3.2 describes the operationalization of the contingency factors whereas section 3.3 is concerned with the operationalization of the constructs of organizational structure. Thereafter, section 3.4 depicts the data generation process including the composition of the research sample. The analysis of the qualitative data is outlined in section 3.5. It aims to identify appropriate measures for each of the qualitative concepts of task uncertainty, structural differentiation, specialization, centralization, and formalization. It also ascertains the consultancies' values for those measures. Section 3.6 is concerned with the aggregation of the measure values at the level of the theoretical concepts. Finally, the firms' values for the theoretical concepts are used to test the research hypotheses as described in section 3.7.

3.1 Overview

The management consulting industry exhibits characteristics that make it distinct from many other industries. Such peculiarities need to be considered when choosing a research methodology. For example, consulting is a project-based activity (section 3.2.1.1). As projects are by definition unique and different from each other, the applicability of standard rules and procedures for 'production' as included in the concept of formalization is at least challenged. Formalization is a theoretical concept that needs to be operationalized for

empirical research by proxy measures that can adopt different values (Bortz, 1999: 10; Bronner et al., 1999: 39; Heinze, 2001: 47; Neuman, 2000: 160). The measures of formalization need to be defined differently than in research on industries such as manufacturing or governmental. Similar arguments can be found for structural differentiation, specialization, and centralization (section 3.3.1) as well as for the task uncertainty contingency⁴² (section 3.2.1.1). The measures of these theoretical concepts cannot be completely specified in advance but need to be explored from the data in order to then test hypotheses. Explorative research with measures that are not specified before data collection provides a strong argument for choosing a qualitative research methodology (Miles & Huberman, 1994: 11-12; Neuman, 2000: 123, 163, 420; Rynes & Gephart, 2004: 455). As qualitative research is little standardized and “there are no algorithms for producing it” (Rynes & Gephart, 2004: 461), the research methodology is outlined in the following. It is also shown how qualitative elements are combined with quantitative ones.

Qualitative research revolves around the description and interpretation of relationships, the generation of classifications or typologies, and the generation of hypotheses (Brüsemeister, 2000: 21-38; Denzin & Lincoln, 2000b: 3; Miles & Huberman, 1994: 2). “After-the-fact description” as opposed to “before-the-fact planning” is typical for qualitative research (Neuman, 2000: 163). It studies “things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them” (Denzin & Lincoln, 2000b: 3). Qualitative research extends beyond the mere use of qualitative type data. It requires extensive fieldwork and is often designed at the same time it is conducted (Bortz & Döring, 2002: 295-301; Mayring, 2002: 19; Miles & Huberman, 1994: 11-12; Neuman, 2000: 122-123; Rynes & Gephart, 2004: 455, 461). Some scholars consider the mere use of qualitative data for quantitative analysis to be qualitative research, whereas others dispute this stance (Rynes & Gephart, 2004: 455).

⁴² The size contingency is discussed later in this section.

There has been an ongoing debate between qualitative and more established quantitative research approaches (Denzin & Lincoln, 2000b: 8; Heinze, 2001: 16-17; Mayring, 2002: 7, 9-11; Neuman, 2000: 16; Schnell et al., 1999: 201; Yin, 2003: xiii). One of the strengths of qualitative research is the data's "richness and holism, with strong potential for revealing complexity; such data provide 'thick descriptions' that are vivid and nested in a real context" (Miles & Huberman, 1994: 10). They are less abstract than quantitative data (Heinze, 2001: 13, 25-26; Neuman, 2000: 16). In addition, qualitative methods leave more room for the research to develop as new aspects surface that could not be anticipated in advance (Heinze, 2001: 27; Miles & Huberman, 1994: 10; Rynes & Gephart, 2004: 455).

The analysis and interpretation of written texts, audio and video tapes, photographs, and paintings has a long history in anthropology, criminology, education, political science, psychology, and sociology research (Jemmott, 2002: 7; Mayring, 2002: 15-18; Neuman, 2000: 346-349). It has been gradually adopted for a business and management context in recent decades including research about organizational change (e.g., Kabanoff et al., 1995), leadership (e.g., Bligh et al., 2004), and strategic adaptation (e.g., Dutton & Duckerich, 1991). The fact that a submission (Bligh et al., 2003) that heavily draws qualitative data obtained from public speeches has been awarded as most outstanding research methods paper at the Academy of Management Annual Conference 2003 may exemplify that QDA has been fully accepted in the management research community and its power and potential for the discipline have been recognized.

The quality and results of QDA are highly dependent on excellent data. Therefore *primary qualitative data* are collected in the field. Primary data are more current, better targeted to the aims of a research study, and more reliable in terms of correctness and comparability than secondary data (Bronner et al., 1999: 141; Neuman, 2000: 305-311; Schnell et al., 1999: 240). Most likely, useful secondary data in form of 'thick descriptions' about the tasks and organiza-

tional structures of a number of different consultancies do not exist or are proprietary (Maister, 2004, p. 8).⁴³

The techniques to obtain primary qualitative data include interviews, case studies, observations, and experiments, (Bouchard, 1976: 368-402; Bronner et al., 1999: 118-139, 143-177; Brüsemeister, 2000: 14-17; Friedrichs, 1990: 189-375; Mayring, 2002: 65-84; Rynes & Gephart, 2004: 458-459; Sachs & Hauser, 2002: 47; Schnell et al., 1999: 214-235, 297-373). *Interviews* being the most commonly used source of data in empirical social research (Bouchard, 1976: 368; Bronner et al., 1999: 143; Schnell et al., 1999: 299) are selected to collect primary qualitative data for this research. They promise to be the best choice to obtain the information desired. One or few in-depth case studies that examine a phenomenon "in its real-life context" (Yin, 1981: 59; 2003: 13), would not provide generalizable information (Eisenhardt, 1989b: 547), which is desirable for hypotheses testing research. Observations appear little effective to assess organizational structure. The same holds true for experiments. In addition, consulting firms for confidentiality reasons can hardly accept researchers observing their daily work at the client site.

Interview techniques can be segmented into personal interviews, written interviews with mail surveys being the most popular form, and telephone interviews, all of which have their pros and cons (Bronner et al., 1999: 143-163; Schnell et al., 1999: 299-357). *Personal interviews* are selected as the technique of choice for this research study for three reasons. First and foremost, personal interviews allow to discover and explore new interesting aspects as they surface. They enable the researcher to cover a breadth of topics while 'drilling' deep selectively when appropriate. In contrast, mail surveys require up-front specification of questions and thus do not allow to discover new aspects. Surveys are also more problematic in terms of meaning and language interpreta-

⁴³ General descriptions of consulting tasks (e.g., Kubr, 2002: 153-257; Lowendahl et al., 2001: 922-924; Niedereichholz, 2000b; 2001) or typical organizational designs (e.g., Becker & Schade, 1995: 338-351; Maister, 1982: 17; 1997a: 6-8; Ringlstetter et al., 2004b: 18-20) that relate to the consulting industry as a whole are not helpful to differentiate between consultancies.

tion, a topic that has been extensively discussed since Muscio's (1916) classical paper (Heller, 1969: 108). Second, personal interviews provide the researcher rich information about the actual respondent and give him or her good control over the interviewing process in terms of who provides information, when, where, and under what circumstances. Last but not least, personal interviews are the best way to get direct access to experienced consultants, the most knowledgeable people about the kind of information desired for this research. This is an important reason (Mayer, 2002: 45) that has prompted other researchers to choose personal interviews for their studies in management consulting (e.g., Payne, 1986, p. 45)

The previous paragraphs were concerned with the task uncertainty contingency and the constructs of organizational structure. The research hypotheses also include the organizational size concept. As size is an established quantitative concept, its measures can be specified before data collection (section 3.2.2), and data can be obtained from secondary sources such as industry reports and annual reports (section 3.4.3). If appropriate information is not available upfront, it is collected during interviews as well (section 3.4.2). As a result, the primary qualitative data on task uncertainty and organizational structure are complemented with *primary and secondary quantitative data* on organizational size. All of the qualitative and quantitative data represent a one-time assessment of the situation of different consulting firms as of 2003. Accordingly, they represent *cross-sectional data* (Bronner et al., 1999: 142-143; Neuman, 2000: 30).

Empirical research collects data on the total population or a sub-sample with the sampling being either random or non-random (Bronner et al., 1999: 199-205; Neuman, 2000: 195-200; Schnell et al., 1999: 247-284). An investigation of the total population is often too expensive and time-consuming, in particular when interviews are used as data collection method (Bortz & Döring, 2002: 398-399; Bronner et al., 1999: 199; Neuman, 2000: 195; Sachs & Hauser, 2002: 108). In addition, non-random samples are typically more useful than random samples in qualitative research (Mayer, 2002: 37-41; Miles & Huberman, 1994: 27;

Neuman, 2000: 196). As outlined in detail in section 3.4.1, a *non-random sample* of consulting firms is created in a process that can be characterized as conscious sampling with a defined set of criteria (Bronner et al., 1999: 199-203; Neuman, 2000: 198-199; Schnell et al., 1999: 252).

Following their generation, the data are analyzed in two steps, the first of which is supported by *QDA software* program NVivo. The use of a software tool greatly facilitates the process of analyzing qualitative data and has become standard in QDA (section 3.5.1).

First, appropriate measures for the operationalization of structural differentiation, specialization, centralization, formalization and the task uncertainty contingency need to be identified. A number of topics related to these qualitative theoretical concepts are specified before data gathering (section 3.2.1 and 3.3). For example, the type of client contract used by the consultancy is a topic related to formalization (section 3.3.5.2). The topics are then specifically addressed during interviews. While in quantitative research measures are mostly specified before data are gathered, operationalization typically starts before data collection in qualitative research and continues throughout data analysis (Miles & Huberman, 1994: 11-12; Neuman, 2000: 123, 163; Rynes & Gephart, 2004: 455). The aim of *exploratory data analysis* (section 3.5.3) is therefore to identify those topics that are not only meaningfully related to the theoretical concepts but also find variations across the research sample. For example, do consultancies use client contracts with different degrees of formalization such as oral agreements or lengthy standardized contracts? Only topics that fulfill both requirements are of interest for this research and can be used as measures. In addition, new topics are discovered that were not specified before the interviews. These topics and their according measures emerge during data collection and analysis.

Second, the measures and consultancies' values for these measures are employed to statistically *test the hypotheses*. The values for the measures are aggregated at the next higher level to obtain a value for the theoretical concepts for each consultancy (section 3.6). For example, a firm's value for type of client

contract is combined with its values for other measures of formalization resulting in one formalization value. The consulting firms' values for structural differentiation, specialization, centralization, formalization and task uncertainty are used together with their size values to plot scattergrams, to compute correlation and regression coefficients, and to perform significance tests on the regressions (section 3.7). Table 4 displays the selections that together form the research methodology of this thesis.

Empirical		Theoretical	
Qualitative primary data	Qualitative secondary data	Quantitative primary data	Quantitative secondary data
Case study	Interview	Experiment	Observation
Personal interview	Telephone interview	Written interview	
Cross-sectional		Longitudinal	
Population	Random sample	Non-random sample	
Manual QDA		Software-supported QDA	
Exploratory	Theory-testing	Theory-applying	

Table 4: Options of research methodology and selections (bold) for this thesis (based on Bronner et al., 1999; Heinze, 2001; Miles & Huberman, 1994; Neuman, 2000; Sachs & Hauser, 2002; Schnell et al., 1999)⁴⁴

⁴⁴ As there appears to be little consistency in the terminology of both the dimensions of research methodology, i.e., the rows of the table, and the alternatives within each dimension, they are collectively labeled as 'options'. For example, the term 'case study' has been employed with a variety of meanings (dos Santos et al., 2003: 2-4). It was used to refer to a "research strategy" (Yin, 1981: 58-59; 2003: 1) such as experiments, surveys, and histories, a "time in study" (Neuman, 2000: 37) as an alternative to cross-sectional and longitudinal, a "form of investigation" (Schnell et al., 1999: 235) such as an analysis of secondary data, and a "form of primary data collection" (Sachs & Hauser, 2002: 47) like interviews, observations, and experiments. It was also listed under "forms of research" together with longitudinal and cross-sectional research, and the analysis of secondary data (Bronner et al., 1999: 118-142).

3.2 Operationalization of the contingency factors

3.2.1 *Task uncertainty*

3.2.1.1 *Measurement of the task uncertainty concept*

Task uncertainty is a theoretical concept that refers to the uncertainty associated with the operations of an organization (section 2.3.2). Although it relates to a phenomenon from within an organization, task uncertainty also captures the influence of external factors such as environmental instability. Internal drivers of task uncertainty are, for example, technology and innovation (section 2.4.2). As a theoretical concept task uncertainty for empirical research needs to be operationalized by measures (Backhaus et al., 2003: 336; Bortz, 1999: 10; Neuman, 2000: 163). The following paragraphs investigate the applicability of task uncertainty measures used in previous research studies.

Most empirical investigations involving task uncertainty have focused on manufacturing firms in which production and consumption occur sequentially and customers are separated from operations. This is not the case in service industries, where customers act as co-producers (Clark, 1995: 42-57; Fosstenlokken et al., 2003: 862-863; Greenwood & Lachman, 1996: 565-566; Levitt, 1981: 98; Mills et al., 1983: 118-119; Tilles, 1961: 91). Through this interaction, the customers add uncertainty to the service providers' operations (Bateson, 2002: 112; Deelmann & Petmecky, 2004: 186; Mills et al., 1983: 123; Skaggs & Huffman, 2003: 775). Therefore, the measures of task uncertainty in management consulting cannot be adopted from research in fields outside the service sector such as manufacturing.

Studies in service industries provide examples for the measurement of task uncertainty related to environment, technology and innovation. Pennings (1987) assesses environmentally caused task uncertainty of a commercial bank by five indicators including the bank's market share, the number of competitors in the territory, and three indicators of customer heterogeneity. Alexander & Randolph (1985) measure technology-driven uncertainty in nursing subunits of

three hospitals with a 10-item instrument developed by Leatt & Schneck (1981). Task uncertainty is assessed by the share of patients with more than one diagnosis and the extent to which advanced nursing techniques rely upon both intuition of nurses and feedback from patients. In their investigations of health and welfare organizations providing rehabilitation services Hage and his colleagues (Hage & Aiken, 1971; Hage & Dewar, 1973) measure innovation-driven task uncertainty by the number of new programs introduced per year.

The three examples show that the measures of task uncertainty in service industries are specifically tailored to the research design including the unit of analysis. As a result, the measures of task uncertainty in management consulting can also not be drawn from previous studies in other service industries. They need to be developed in accordance with the research design at hand.

This thesis uses a qualitative research approach. In qualitative research, the operationalization of theoretical concepts typically starts during data collection and continues throughout data analysis (Miles & Huberman, 1994: 12; Neuman, 2000: 163). However, data collection needs to be prepared and topics narrowed down so that the relevant aspects are considered when the data are obtained (Mayer, 2002: 27).

The measures of task uncertainty are derived from qualitative data that are collected in personal interviews. To yield relevant and promising qualitative data, topics related to task uncertainty in management consulting are specifically addressed in interviews. If subsequent data analysis supports their relevance and finds variations across the sample, the topics then serve as measures of task uncertainty in management consulting. The topics are starting points for data generation, however, additional aspects are explored as they surface during interviews and data analysis. As a result, some measures emerge from the data, whereas others are based on the topics outlined below.

The task of management consulting is typically conducted by a team of consultants during a project consisting of distinct phases (Biswas & Twitchell, 2002: 36-39; Graubner & Richter, 2007; Mulligan & Barber, 2001: 88-94;

Niedereichholz, 2001: 9-11). The phases of the consulting project life cycle have been extensively described, for example, by Hussey (2001a), Kubr (2002: 153-257), Niedereichholz (2000b; 2001), Obolensky (2001a), and Rassam (2001a; 2001b). Many of the phases include topics that can be linked to the task uncertainty concept. These topics are listed along the consulting project life cycle in Figure 13. They are discussed in detail in the sections below. A summary of the arguments is provided in Table 5.

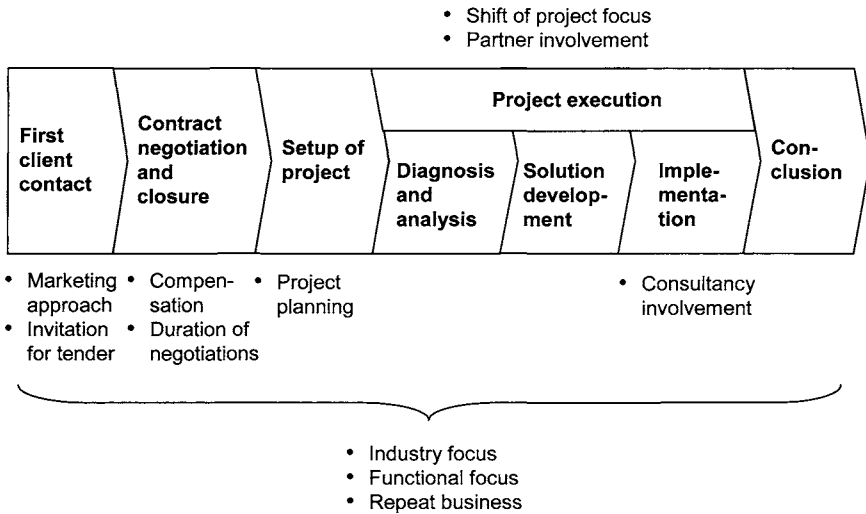


Figure 13: Topics related to the task uncertainty contingency by phase of the consulting project life cycle (based on Biswas & Twitchell, 2002: 37; Graubner & Richter, 2007; Müller-Stevens & Kriegmeier, 2001: 135-140; Niedereichholz, 2001: 9-11)

3.2.1.2 Marketing approach

The first contact between a consulting firm and a potential customer can be initiated by the consultancy, by the customer, or through a referral from a third party (Kubr, 2002: 154, 668; Mulligan & Barber, 2001: 88-89; Niedereichholz, 2001: 40). The first alternative is estimated to account for over 95 percent of all initiatives (Niedereichholz, 2001: 9). It is therefore referred to in the following whereas the other cases are not considered further.

Consulting firms can use different ways to market their services to potential customers (Hussey, 2001a: 103-104; Kubr, 2002: 154-155, 652-670; Niedereichholz, 2001: 84-131; Pollecoff, 2001: 187-214). The contact methods vary, among others, in the degree of customization and the target of the initiative. One approach is to contact several firms or an industry branch simultaneously, for example through advertisements or mailings. It typically promotes a narrowly specified consulting service with little customization such as project management trainings or outsourcing support. This marketing approach is associated with low task uncertainty as the consulting service 'fits' many customers and can be repeatedly performed with little variation among consulting projects. The consultancy has experience with this type of service and can predict the consulting process and outcomes fairly well.

In contrast, a consultancy may contact an executive of a single company to discuss the specific challenges of his or her organization and to jointly develop a custom-tailored consulting service (Müller-Stewens et al., 1999: 88-89). The resulting project specifications may vary considerably so that the consultancy's experience level with a particular project type tends to be low. This highly customized marketing approach is therefore associated with high task uncertainty.

The above argument is consistent with Skaggs's & Huffman's (2003: 777, 780) finding that the degree to which services are adapted to customers' desires is a driver of task uncertainty in service firms.

3.2.1.3 *Invitation for tender*

With respect to some projects, consulting firms are also invited to submit tenders for consulting projects (Curnow, 2001: 157-161; Kraus, 2005: 71; Kubr, 2002: 594-596; Niedereichholz, 2001: 132-136). The invitations, also called 'terms of reference', typically outline the consulting project in terms of scope, content, and aims (Kubr, 2002: 166-167). The consultancies' submissions address these

aspects and describe the consulting project at a meaningful level of detail. This procedure requires that the services to be performed in the consulting project can be defined in advance. Invitations for tender are therefore also considered indicative of low task uncertainty.

3.2.1.4 Compensation

A central element of consulting arrangements is the form by which consultants are compensated. Time-and-material⁴⁵, fixed price, and success-based are the three major types of compensation (Biech, 1999: 44-47; Dawson, 2000: 190-196; Deelmann & Petmecky, 2004: 197; Hussey, 2001a: 116; Kubr, 2002: 687-692; Lorsch & Tierney, 2002: 40; Maister, 1997a: 26; Niedereichholz, 2001: 302-304; Ringlstetter et al., 2004c: 41).⁴⁶ The types can be combined in multiple ways. The form of compensation is related the distribution of the risks associated with the consulting project (Graubner & Richter, 2007) as well as to the predictability of consulting services (Maula & Poulfelt, 2000: 10).

Fixed price agreements between consultants and their customers as well as success-based compensation require both parties to have a good understanding of the work to be performed during the consulting project (Eschenbach & Nagy, 2001: 227; Kubr, 2002: 688). For success-based compensation, appropriate measures and principles must be defined a priori on which the fees are contingent (Dawson, 2000: 196; Deelmann & Petmecky, 2004: 198; Graubner & Richter, 2007; Haywood-Farmer & Nollet, 1994: 11; Lechner et al., 2005: 7; Maula & Poulfelt, 2000: 10). Fixed price and contingency fees are therefore associated with low task uncertainty. In contrast, time-and-material com-

⁴⁵ Time-and-material contracts compensate consultants for the time and expenses invested in the project. They are based on fees per unit of time such as hourly or daily rates (Bordelon, 1994: 15.24-15.25; Kubr, 2002, p. 684).

⁴⁶ According to the BDU (2004: 9), time-and-material compensation accounted for 53 percent, fixed price for 40 percent, and success-based for 7 percent of German consulting revenues in 2003.

pensation can be used if tasks and necessary efforts are not sufficiently predictable or even “unknown at project startup” (Lowendahl et al., 2001: 923). It is considered an indicator of high task uncertainty.

3.2.1.5 *Duration of negotiations*

The duration of contract negotiations is another indicator of task uncertainty in management consulting. Negotiations can be relatively short or involve several rounds of discussions (Hussey, 2001a: 108-111; Kubr, 2002: 173). For a consultancy’s contract negotiations to be swift and straight-forward, the type of consulting service negotiated needs to be palpable and relatively easy to grasp for both parties (Hussey, 2001a: 109-110). Swift contract negotiations are therefore considered to be a sign of low task uncertainty. Time-consuming negotiations, on the other hand, may occur for various reasons including difficult-to-specify consulting services. Other possible causes of lengthy negotiations are low mutual trust or little experience with consulting arrangements on the part of the customer. Over a large number of contract negotiations such aspects should level out. Therefore, drawn out contract negotiations are interpreted as a sign of high task uncertainty due to difficult-to-specify consulting services.

3.2.1.6 *Project planning*

Another indicator of task uncertainty in management consulting is the level of detail with which the majority of projects are planned before they start. The planning can include the creation of detailed Gantt charts, network plans, and risk analyses (Hussey, 2001a: 15.32; Kubr, 2002: 170; Niedereichholz, 2001: 240-330). It can, however, stop with the definition of an end date, major milestones, and rough end products (Rasiel, 1999: 53-55).

Detailed project planning requires the project to be predictable. It is not feasible without a good understanding of the tasks to be performed during the consulting project and the time and resources necessary for their completion. Both the consultancy as well as the customer in general try to avoid risks, misunderstandings, and capacity shortages by planning the project at a reasonably detailed level (Hussey, 2001a: 110-111). Difficult to determine tasks and resources can prevent them from doing so (Lowendahl et al., 2001: 923; Niewiem, 2005: 86). To start a project with a rather sketchy, high-level project plan is therefore considered a sign of high task uncertainty, whereas detailed project planning is associated with low task uncertainty.

3.2.1.7 Shift of project focus

During the course of a project, its focus can shift (Turner, 1982: 122-123). Major shifts typically result from findings discovered during the diagnosis phase of a project (Rassam, 2001a: 127; Tilles, 1961: 98). They necessitate a realignment of mutual understanding about project goals and scope between the consultancy and the customer (Hussey, 2001a: 112; Niewiem, 2005: 86). Shifts in focus are associated with high task uncertainty as the consulting work could not be correctly defined before the project started (Niewiem, 2005: 86). In contrast, consultancies that do hardly experience major shifts in their projects, tend to be those who provide consulting services with low task uncertainty. Shift of project focus is related to previously used measures of task uncertainty such as "the extent to which task processes and interventions have knowable outcomes" (Van de Ven et al., 1976: 324).

3.2.1.8 Partner involvement in project execution

The degree to which partners being the most experienced consultants (section 3.3.2.2) are commonly involved in the execution of consulting projects can be linked to the task uncertainty. These consultants should be involved in

project execution only as much as their expertise and knowledge are truly required by the work performed (Maister, 1997a: 6, 41-42). Whenever tasks are well-understood and “programmable” (Cooper et al., 1997: 30), they need to be delegated to more junior consultants to avoid lessened morale, compromised skill building, and, above all, loss of profitability. Therefore, partner involvement in project execution that is not justified, cannot be sustained (Maister, 1997a: 42).

As a result, heavy partner involvement in project execution is considered an indication of high task uncertainty. In contrast, partners can – and need to – refrain from project execution if tasks are well-structured, concerned with familiar problems, and accordingly have low task uncertainty. The topic of partner involvement is compatible with the use of “the amount of thinking time to solve problems” (Van de Ven et al., 1976: 324) as a measure of task uncertainty.

3.2.1.9 *Consultancy involvement in implementation*

The execution of consulting projects starts with a diagnosis and analysis phase followed by the development of recommendations (section 3.2.1.1). While some consulting firms focus their services on these two phases, others are involved in various ways during the implementation phase as well (Kubr, 2002: 229-231; Niedereichholz, 2000b: 330-331; Obolensky, 2001a: 155; Payne, 1986: 48).

During diagnosis and solution development the steps to be taken in the following implementation phase are determined. As its tasks are well-specified in advance, the implementation phase is lower in task uncertainty than the previous two phases. The task uncertainty for a consulting firm that supports its clients in all three execution phases is therefore lower compared to the task uncertainty for a consultancy which is predominantly concerned with diagnosis and solution development and leaves implementation mostly to the client.

3.2.1.10 *Industry focus*

There are consulting firms which have preferences regarding the industries they serve (Niedereichholz, 2001: 65-67; Ringlstetter & Bürger, 2004: 288-289; Scott, 1998: 42-43, 90-92). The extent to which consultancies focus on particular industries influences their task uncertainty. The narrower the scope, the lower task uncertainty tends to be as work is more repetitive and firms have experience with the typical problems of certain industries. Consultancies can also transfer proven solutions more easily from one customer to another if both operate in the same industry. In an extreme case, a consulting firm that serves only a single industry is likely to have a number of very similar projects. It is also very familiar with its industry's peculiarities and has therefore a low task uncertainty. The argument is consistent with Skaggs's & Huffman's (2003: 777, 780) finding that breadth of service offering increases task uncertainty in service firms.

One related aspect that bears particular challenges for consulting firms is their engagement in the public sector (Kubr, 2002: 587-604; Niedereichholz, 2001: 134-136). The public sector can be considered an industry with unique economic, political, administrative, and social characteristics. Activities in the public sector hence broaden a consulting firms' industry focus. In addition, the public sector differs from the private sector, which can be considered consultancies' home turf, in many respects (Kubr, 2002: 589). For both reasons, activities in the public sector are considered an indicator of high task uncertainty.

3.2.1.11 *Functional focus*

A similar phenomenon is the concentration of consultancies on particular functional topics (Kubr, 2002: 261-586; Niedereichholz, 2001: 67-68; Payne, 1986: 46-49; Ringlstetter & Bürger, 2004: 288-289; Scott, 1998: 42-43, 90). The argument for functional focus is similar to the one for industrial focus provided

above. The narrower the scope of a firm's operations, the lower the task uncertainty it has to cope with (Skaggs & Huffman, 2003: 777, 780).

As consulting firms concentrate on certain functional areas, the scope of their operations is reduced. Repetition rate increases so that consultancies gain more experience in these areas. They can also more easily transfer proven solutions. Both aspects are linked to low task uncertainty.

3.2.1.12 Repeat business

Repeat business includes consulting for existing and former customers (Kubr, 2002: 670; Pollecoff, 2001: 196). It plays an important role in management consulting as it attains more than 75 percent of all work in some firms (Kubr, 2002: 670).

The degree to which consultancies serve existing and former customers influences their task uncertainty. If a consulting firm works repeatedly with a particular client on several projects, it becomes familiar with the local environment including client culture, power distribution, organizational structure, individual interests, and competitive situation. The familiarity can be an advantage for both parties. It reduces 'ramp-up' time and costs for new projects on the side of the client (Kraus, 2005: 70), whereas the consultancy saves acquisition costs that can be by multiples higher for new customers (Pollecoff, 2001: 196). The uncertainty associated with working for a client decreases through repeat business over time. Accordingly, a high share of repeat business is an indication of low task uncertainty.

Table 5 lists the 11 topics discussed in the previous sections and their associations with the task uncertainty concept. The topics are addressed during interviews to find measures of task uncertainty in management consulting. The two categories of high and low task uncertainty mark extreme values of a spectrum. They do not represent a binary concept.

Section	Topic	High task uncertainty	Low task uncertainty
3.2.1.2	Marketing approach	Broadly defined topic, specific client targeted	Narrowly defined topic, large target group
3.2.1.3	Invitation for tender	Not used	Frequently used
3.2.1.4	Compensation	Time-and-material	Fixed price, success-based compensation
3.2.1.5	Duration of negotiations	Long	Short
3.2.1.6	Project planning	Sketchy	Detailed
3.2.1.7	Shift of project focus	Common	Rare
3.2.1.8	Partner involvement in project execution	Extensive	Little
3.2.1.9	Consultancy involvement in implementation	Little	Extensive
3.2.1.10	Industry focus	Broad	Narrow
3.2.1.11	Functional focus	Broad	Narrow
3.2.1.12	Repeat business	Low share	High share

Table 5: Topics related to task uncertainty and their associations with the theoretical concept

3.2.2 Organizational size

Organizational size is an established quantitative concept and one of the contingencies in structural contingency theory. In contrast to the qualitative task uncertainty contingency, its measures can be defined before data collection. A priori operationalization of theoretical concepts is typical for quantitative research (section 3.1).

Annual revenues, net assets, and number of employees are commonly used to gauge size in a business context (section 2.3.2). The following paragraphs discuss these three measures to distill the most appropriate one for this research, i.e., for the assessment of the size of the unit of analysis as defined in section 1.3.3.

-
- *Annual revenues* can be used as a measure of firm size in empirical research (e.g., Khandwalla, 1974: 87). It is a simple measure and the data often widely available. However, the figures can be misleading particularly in studies across different industries. Annual revenues in banking, manufacturing, or retail have fundamentally different meanings. For example, measured by annual revenues four Japanese trading houses were the world's largest companies in the mid-1990s (Jacob, 1995: 42). They were small by other measures as they had as little as 7,400 employees, while Toyota, a Japanese automobile and engineering company, employed 111,000 (Toyota, 1996), and General Electric, the fifth largest firm in terms of revenues, had 693,000 employees at that time (Jacob, 1995: F1).
 - *Net assets* is popular to define organizational size (Grossmann & Hart, 1986: 693) particularly in research studies about industries having considerable production equipment such as manufacturing and automotive (Gooding & Wagner III, 1985: 469). It is computed by correcting total assets for depreciation and depletion. Similarly to annual revenues, net assets may not reflect the underlying activity properly. It does, for example, not reflect whether or not and how the assets are actually put to work and how they are used.
 - *Number of employees* is the most relevant measure of size from an organization theory perspective and the most common operationalization of the concept in this context (Canbäck, 2002: 24; Child, 1973b: 170; Donaldson, 2001a: 21; Kimberly, 1976: 582). It is sometimes used in conjunction with other dimensions (Pugh et al., 1963: 309; Pugh et al., 1969b: 97-98). A meta-review by Kimberley (1976: 582) revealed that more than 80 percent of empirical studies on organizational structure use number of employees to gauge organizational size. Few of the authors explicitly justify their choice (Kimberly, 1976: 582; Shalit & Sankar, 1977: 290). One reason might be that number of employees seems an obvious choice in for organization theorists "since it is people who are organized, that their

numbers have a closer relationship to structure than will other aspects of size" (Child, 1973b: 170).

While these arguments hold for many industries, one additional aspect is of importance in management consulting. The number of employees as a measure of organizational size can be specified further in this industry as firms employ two distinct groups of people, consultants and support staff (section 3.3.2.4). Although the number of consultants and the number of employees are positively associated with each other, the ratio of consultants to total employees varies considerably. In large German consultancies, the highest ratios are in excess of 90 percent while in some firms consultants account for only about 60 percent of total employee base (Lünendonk, 2004a: 43-46; 2004b: 43-44).

Management consulting is a people-driven, little capital-intensive industry with few physical assets involved (Greenwood & Empson, 2003: 924). The net assets measure therefore provides little information of value for this research. Number of consultants, number of employees, and annual consulting revenues are useful measures of organizational size in consulting. All three have been utilized in recent empirical research about this industry (e.g., Armbrüster & Barchewitz, 2004: 14-16; Skaggs & Snow, 2004: 278). The number of consultants is more closely linked to organizational structure than annual consulting revenues. It also describes firm size in terms of production capacity more accurately than total employees. Therefore, the *number of consultants* is the preferable measure of organizational size for this thesis.

While it has been claimed that different measures of organizational size are "basically interchangeable" (Oldham & Hackman, 1981: 71), several scholars have argued that different measures of organizational size, depending on the circumstances, may not be highly correlated and hence can generally not be used interchangeably without precaution (e.g., Hopkins, 1988; Jackson & Dunlevy, 1982; Lioukas & Xerokostas, 1982; Newbould & Wilson, 1977; Shalit & Sankar, 1977; Smyth et al., 1975). Accordingly, data are not only collected for number of consultants but also for number of employees and annual consulting

revenues. The comparison of the results for the three different measures will show whether the selection of number of consultants as primary measure of this thesis is sustainable (section 4.1.4).

To maintain appropriate confidentiality is the paramount ethical responsibility of any researcher (Bouchard, 1976: 370; Christians, 2000: 139-140; Neuman, 2000: 99-100, 376, 486-487). Therefore, all interviewees are ensured that only disguised information will be published (section 3.4.2). In order to protect participating consultancies from identification, the actual figures for number of consultants, number of employees, and annual consulting revenues are normalized and provided as disguised 'size values'. The size values for each measure are computed by dividing all figures by the size of the smallest firm. The resulting size values for the smallest consultancy equal 1.0 for each measure, whereas the other firms' size values represent multiples of the smallest firm's size. The relative distances in size between different consultancies and thus the results of this research remain unaffected.

3.3 Operationalization of the constructs of organizational structure

3.3.1 Measurement of the structural constructs

The following sections are concerned with structural differentiation, specialization, centralization, and formalization. The measures of these structural constructs used in previous research studies for the most part delineate organizational structure in industries such as manufacturing, health care, or government and appear to be of little use in a management consulting context. For example, specialization has been gauged by the "number of specialisms" (Pugh et al., 1963: 301) being the number of functions performed by specialists. This measure bears little value in consulting as virtually all consulting staff and most support staff (section 3.3.2.4) are likely to be well-trained specialists. Formalization has been measured by the degree to which an organization chart is distributed (e.g., Inkson et al., 1970: 328; McMillan et al., 1973: 559). Management con-

sulting firms, in contrast, often do not even have an organization chart (Lowendahl, 2000: 98-100). Other researchers deliberately 'twisted' traditional measures to make them applicable for the professional services as well. They kept them, however, to permit direct comparison with previously published results on other industries and types of organizations (e.g., Greenwood et al., 1990: 738-741). As for task uncertainty, the appropriate measures cannot be adopted from previous empirical research studies but need to be developed in accordance with the research approach of this thesis.

The argument is in line with other researchers' observations. Teece (2003: 899) noted about organization theory research that "much of the theory in this area has been done, at least in economics, with the industrial enterprise in mind. The degree to which this literature is fully applicable to professional service firms is not clear." Similarly, Hinings & Leblebici (2003: 829) concluded that "these kinds of organizations have such particular attributes and are so different from previously studied organizations that there is not a great deal of point in taking existing theories and seeing how well they apply".

Proper measures must be meaningfully related to the four structural constructs and find different values across the sample of consultancies. The procedure is like the one followed to assess the task uncertainty contingency (section 3.2.1). The following sections outline the topics from a management consulting context to be addressed during interviews. The topics are derived from literature on the management consulting industry. As they are directly related to the organizational structure of consultancies, the topics are discussed less extensively than the topics for task uncertainty which described the task of management consulting without a direct link to the task uncertainty concept. The topics are starting points for discussion, however, further relevant topics may be discovered and explored during interviews and the exploratory analysis of data. A table at the end of each section summarizes the expected associations of all topics with their corresponding structural construct.

3.3.2 Structural differentiation

3.3.2.1 Introduction

The theoretical construct of structural differentiation describes the extent to which an organization is divided into identifiable units. The division can be both vertical and horizontal. Vertical differentiation in management consulting is primarily concerned with the levels among consultants and secondly with the distinction between consultants and support staff (Ringlstetter et al., 2004b: 18). Horizontally, the existence of practice groups and expert positions are indicators of structural differentiation in management consulting firms.

3.3.2.2 Hierarchical levels among consultants

Junior consultants, project managers, and partners are the three major levels of consultants that can be distinguished based on responsibilities and increasing seniority (Deelmann & Petmecky, 2005: 250; Haywood-Farmer & Nollet, 1994: 6; Kind, 2001: 218; Maister, 1997a: 7; Müller-Stewens et al., 1999: 40).⁴⁷ They are shown in Figure 14. The first group includes all consultants below project manager status.⁴⁸ These consultants are responsible for the completion of the technical tasks that are coordinated by the project managers. Members of the last group are seasoned consultants whose main responsibili-

⁴⁷ The term 'partner' reflects the fact that most consultancies have traditionally been organized as partnerships. The majority of leading consulting firms still operate as partnerships or private corporations (Richter, 2004: 119-120; Richter & Lingelbach, 2004: 9), both of which are often referred to as partnerships. Private corporations have a legal entity in their own right whereas partnerships don't (Greenwood & Empson, 2003: 910). In both types of governance models, the ownership rights – being the right to govern the firm and the right to appropriate its residual returns (Hansmann, 1996, p. 11) – rest with the most seasoned employees, i.e., the partners (Kubr, 2002: 764). The term 'partner' is used in a more encompassing way nowadays as it includes all consultants above manager level, whether or not their firms are privately owned (Lorsch & Tierney, 2002, p. 25). Accordingly, partners may not have the complete set of ownership rights, for example, in publicly traded consulting firms (Lorsch & Tierney, 2002, p. 148).

⁴⁸ Consultants with some years of consulting experience who are still below manager level are sometimes referred to as 'senior consultants' (e.g., Deelmann & Petmecky, 2004: 182; 2005: 250; Kraus, 2005: 73). This category is considered a sub-form of junior consultants in this thesis.

ties are client relationship management, acquisition, and project supervision. The three levels are therefore called “grinders of work”, “minders of work”, and “finders of work” (Maister, 1982: 16; 1997a: 7).

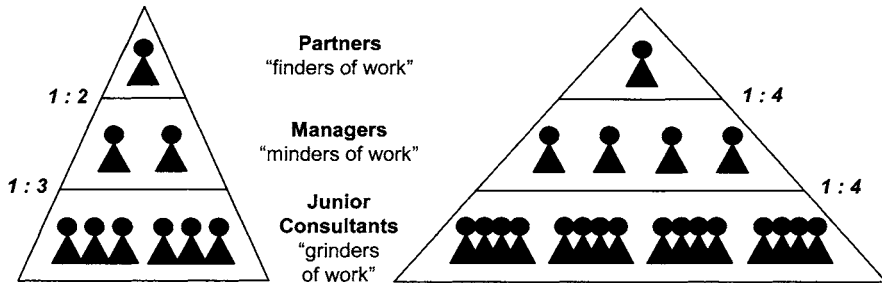


Figure 14: Hierarchical levels and leverage ratios in management consulting firms (based on Esposito & Koplos, 1994: 20.8; Kaiser & Bürger, 2004: 398-399; Maister, 1982: 17; 1997a: 6-8; Ringlstetter et al., 2004b: 18-20)

Each of these three hierarchical levels can be divided into a number of possibly overlapping sub-categories, for example the partners into junior partners, senior partners, board members, and managing partner (Berggren, 1999: 48-49; Deelmann & Petmecky, 2005: 250; Kraus, 2005: 72-73; Kubr, 2002: 768; Maister, 1997a: 293-296; Müller-Stewens et al., 1999: 83-84).⁴⁹ The total number of hierarchical levels including sub-categories is used as an indicator of structural differentiation in management consulting.

3.3.2.3 Leverage ratios

Another topic of relevance is the span of control between higher and lower levels of consultants. Span of control is called leverage ratio in PSFs as

⁴⁹ Partly in reflection of their legal form, consulting firms also use different expressions to refer to essentially identical levels of consultants, for example, a partner as defined above can be denoted as partner but also as vice president, principal, officer, or director (Kubr, 2002: 789).

the more senior professionals leverage their knowledge and client relationships through a number of juniors (Hitt et al., 2001: 15; Kubr, 2002: 616; Maister, 1997a: 8; Müller-Stewens et al., 1999: 39-40; Scott, 1998: 66).⁵⁰ A low leverage ratio is considered a sign of weak structural differentiation. Low leverage corresponds with a steep pyramid as the shape of the overall organizational structure as shown in Figure 14 (Maister, 1997a: 6-7; Ringlstetter et al., 2004b: 18-20; Scott, 1998: 66-67). In contrast, high leverage resulting in a flat pyramid is considered a sign of strong structural differentiation. This association is compatible with Wallace's (1995a: 817) use of promotional opportunity as a measure of structural differentiation in law firms.

3.3.2.4 Support units

The existence of support units or positions is another topic related to structural differentiation in management consulting. In many consultancies organized as partnerships the consultants themselves perform tasks such as firm management or recruitment (section 3.3.3.6). Mainly for efficiency reasons, consulting firms may employ support staff⁵¹, who are on average less costly than consultants (Becker & Schade, 1995: 351; Haywood-Farmer & Nollet, 1985: 174-175; Hussey, 2001b: 241; Klatt, 2004: 15-16; Maister, 1997a: 199-200; Metters & Vargas, 2000: 23; Ringlstetter et al., 2004b: 20). Typical support units include consulting-related functions (e.g., research and analysis, translation and editing, and graphic design), personnel-related functions (e.g., recruiting, staffing, and training), and administrative functions (e.g., accounting, controlling, and IT) (Kubr, 2002: 774-775; Maister, 1997b: 95-96; Schwenker, 2004: 73, 76-77).

⁵⁰ The term 'leverage ratio' is often used to refer to the partner-to-non-partner ratio described in section 1.1.2 (e.g., Kubr, 2002: 616; Scott, 1998: 66). This thesis also considers the ratio between managers and junior consultants to obtain a more encompassing picture of structural differentiation.

⁵¹ Support staff is sometimes referred to as 'non-professionals' in the literature (e.g., Haywood-Farmer & Nollet, 1994: 6). This little respectful terminology is not used in this thesis.

Although efficiency is not the dominating goal in the consulting industry (Graubner & Richter, 2003: 49; Haywood-Farmer & Nollet, 1985: 179; Metters & Vargas, 2000: 29), some firms have also started to set up support units in low labor cost regions such as India (Armour & Kessler, 2003; Filkins, 2000). However, the separation between consultants and support staff is no panacea and can result in drawbacks such as loss in flexibility and quality (Haywood-Farmer & Nollet, 1985: 175; Metters & Vargas, 2000: 26-27).

3.3.2.5 *Industry and functional practices*

Horizontally, structural differentiation among consultants takes place at the unit level through industry and functional practices (Klatt, 2004: 11-15; Kubr, 2002: 769-770; Maister, 1997a: 345-346; Schwenker, 2004: 71-73).⁵² Members of these practices work predominantly for customers in a certain industry or on particular functional problems. Consultancies may foster such practices. They may also consciously opt against them (Teece, 2003: 912).

3.3.2.6 *Expert positions*

At the level of the individual, the existence of expert positions outside the 'normal' hierarchy of consultants is a topic that can be related to horizontal differentiation in management consulting. Such positions are typically tied to an industry or functional practice, for example, as a practice manager (Kaiser & Bürger, 2004: 403-404; Maister, 1997a: 346).

⁵² Industry practices and functional practices are means of horizontal differentiation secondary to geographical units (Bäcklund & Werr, 2001: 19; Klatt, 2004: 13; Kubr, 2002, pp. 769-774; Maister, 1997a, p. 345). As the unit of analysis of this thesis is a single office (section 1.3.3), horizontal differentiation by geographical units is by definition excluded.

Table 6 summarizes the six topics addressed during interviews for the assessment of structural differentiation in management consulting and their associations with the theoretical concept. Again, the two categories of strong and weak differentiation are extreme values of a spectrum but not a binary concept.

Section	Topic	Strong structural differentiation	Weak structural differentiation
3.3.2.2	Hierarchical levels among consultants	Many	Few
3.3.2.3	Leverage ratio	High	Low
3.3.2.4	Support units	Many	Not existent
3.3.2.5	Industry practices	Many	Not existent
3.3.2.5	Functional practices	Many	Not existent
3.3.2.6	Expert positions	Many	Not existent

Table 6: Topics related to structural differentiation and their associations with the theoretical concept

3.3.3 Specialization

3.3.3.1 Introduction

Specialization⁵³ relates to the degree to which labor is divided within an organization and performed by certain departments and positions. In management consulting there are two aspects to specialization and the division of

⁵³ Specialization in organization theory needs to be distinguished from specialization as often used in the consulting literature. The latter refers to consultants' or consulting firms' 'focusing' on particular segments of consulting work to become specialists in these areas (Czerniawska, 2002: 73-83; Kaiser & Bürger, 2004: 404; Ringlstetter et al., 2004b: 21; Scott, 1998: 42-43, 86-89). Although the two phenomena are associated with each other, the term 'specialization' is solely used in the organizational theory tradition in this thesis. Focused consultants, however, are referred to as specialists, as opposed to generalists with a broad spectrum of consulting activities (Czerniawska, 2002: 73-83).

work. The first aspect relates to the extent to which consulting work is divided and assigned to particular consultants (sections 3.3.3.2 through 3.3.3.5). The second relates to the division of work between consultants and support staff. It is concerned with internal, not client-related work (section 3.3.3.6).

3.3.3.2 *Focusing of consultants*

Consultants may focus in their work on certain segments of consulting work, for example an industry or a functional topic such as strategy, supply chain management, or marketing (Kaiser & Bürger, 2004: 403-404; Kinard, 1994: 2.16-2.17; Ringlstetter et al., 2004b: 20). They might also be affiliated with a corresponding practice, provided such practices exist in their firms (section 3.3.2.5). However, as “most problems brought to professionals do not fit neatly into pre-ordained specialties” (Haywood-Farmer & Nollet, 1985: 173), there is a benefit from having generalist consultants (Haywood-Farmer & Nollet, 1985: 173-174; Kinard, 1994: 2.16). Whether consultants become specialists or remain generalists is considered an indicator of specialization and the division of work in management consulting. Closely related is the question at what point during the course of a consulting career focusing typically happens or is required by the firm (Maister, 1997a: 179; Wallace, 1995b: 235). The sooner consultants focus on particular segments of consulting work, the higher the specialization in their company.

3.3.3.3 *New hires*

Consultants may arrive at the consulting firms as specialists already. Many new hires enter their consulting firms with several years of work experience (Deelmann & Petmecky, 2004: 184; Esposito & Koplos, 1994: 20.14; Hussey, 2001b: 250-251; Kubr, 2002: 784-786; Rassam & Oates, 1991: 8-9). The classic example from the Anglo-Saxon educational system are M.B.A.s, who went back to business school after having worked for some time upon earning a bachelors

degree (Maister, 1997a: 201; Rassam & Oates, 1991: 9; Scott, 1998: 30-31). Compared to recent university graduates, experienced hires are more predetermined for certain segments of consulting work in accordance with their background (Deelmann & Petmecky, 2004: 184; Esposito & Koplos, 1994: 20.14). A consulting firm that recruits mostly experienced hires is therefore considered to have high specialization. In contrast, the recruitment of university graduates is associated with low specialization, at least among low-tenured consultants.

3.3.3.4 *Simultaneous projects*

Another indicator of specialization is the number of projects junior consultants⁵⁴ work on simultaneously. By definition, specialization is lower if consultants are assigned full-time to only one project as the division of project work among few team members is comparatively low. The work needs to be divided more with many consultants on a project, who have to split their time between numerous concurrent projects. This argument is compatible with the generalist-specialist distinction provided above. Generalist consultants fulfill a wider range of tasks and hence tend to work on fewer projects than specialists, who focus on particular tasks of several simultaneous consulting projects (Kubr, 2002: 704).

3.3.3.5 *Exchange of team members*

The exchange of team members during the course of a consulting project is an indicator of specialization in management consulting. The exchange is more difficult with highly specialized professionals whereas generalists tend to be more easily replaceable (Dyckerhoff, 2004: 348). The frequent exchange is

⁵⁴ Partners have almost always multiple simultaneous projects as their primary responsibility is the acquisition and supervision of consulting projects (section 3.3.2). Similarly, project managers often coordinate more than one project at a time.

therefore considered a sign of low focusing and, in turn, low specialization in management consulting.

3.3.3.6 *Firm and personnel management*

The two major areas of internal work in management consultancies are firm management and personnel management (Kubr, 2002: 611-620; Maister, 1997a: 3-4). Section 3.3.2.4 argues that many consultancies have established dedicated support units or positions for tasks such as recruitment, finance, and training. Specialization assesses how internal work is shared between consultants and support staff. In high specialization conditions, both groups focus on their primary working area. Firm management and personnel management are performed by support staff while consultants are concerned with consulting work. In contrast, the participation of consultants, in particular partners, in these tasks is a sign of low specialization. The responsibility for internal work is less separated between the two groups as consultants themselves are involved in internal tasks in addition to serving customers. The lowest specialization can be found in small, classical partnership organizations in which the consultants themselves perform tasks such as firm management or recruitment (Becker & Schade, 1995: 351; Kubr, 2002: 774; Müller-Stewens et al., 1999: 44; Richter, 2004: 123).

A summary of the six topics related to the specialization concept is provided in Table 7.

Section	Topic	High specialization	Low specialization
3.3.3.2	Focusing of consultants	Early in consulting career	No or late focusing
3.3.3.3	New hires	Experienced hires	Recent graduates
3.3.3.4	Simultaneous projects	Numerous	One
3.3.3.5	Exchange of team members	Rarely	Common
3.3.3.6	Firm management	Support staff	Consultants/partners involved
3.3.3.6	Personnel management	Support staff	Consultants/partners involved

Table 7: Topics related to specialization and their associations with the theoretical concept

3.3.4 Centralization

3.3.4.1 Introduction

Centralization describes how authority and decision-making power are confined to the top of an organization or distributed throughout it. In management consulting firms, partners – possibly only one or a few of them such as senior partners, board members, or a CEO – represent the top of the organization (section 3.3.2.2). Project managers, junior consultants, and support staff are other classes of internal stakeholders and possible decision makers. The delegation of decisions to the last group deserves particular scrutiny as it has been found that the heterogeneity in decision-making is larger among support staff than among consultants (Golden et al., 2000).

The three success factors in management consulting and thus central areas of decision-making are client work and the two internal concerns of firm management and people management (Kubr, 2002: 610-620; Lorsch & Tierney, 2002: 18-24; Maister, 1997a: 3-4; Ringlstetter et al., 2004b: 14-15).

3.3.4.2 *Conclusion of client contracts*

From the first area, the conclusions of client contracts are important and visible decisions. Such contracts can be oral agreements and do not necessarily require a written document (section 3.3.5). Contract negotiations and closures can, for example, be one of the partners' responsibilities (Kubr, 2002: 789). They can also be delegated to more junior consultants or even support staff members.

3.3.4.3 *Corporate governance*

The most crucial decisions regarding firm management are concerned with firm governance such as high-level policy setting, mergers and acquisitions, and ownership (Kubr, 2002: 768; Maister, 1997a: 289-299). In classical partnerships, such decisions are made by all partners (Lorsch & Tierney, 2002: 121). Other approaches with different degrees of centralization and participation in decision-making about firm concerns can also be found today (Lorsch & Tierney, 2002: 121-136).

3.3.4.4 *Recruitment – staffing – performance-related decisions*

Important people decisions include the issuing of offers in recruitment of new consultants (Dickmann et al., 2006; Graubner & Richter, 2003: 46-47; Hussey, 2001b: 250-252; Kubr, 2002: 784-787; Maister, 1997a: 166-168; Müller-Stewens et al., 1999: 98-99; Scott, 1998: 30, 116-121). The staffing of junior consultants on projects is another key decision with implications on, for instance, profitability, client service, and skill building (Hussey, 2001b: 252-253; Kubr, 2002: 705-707; Maister, 1997a: 156-157, 178-181; Müller-Stewens et al., 1999: 89-92). Finally, the decisions tied to consultants' performance such as promotion, compensation, and separation decisions are of high importance in consulting (Dickmann et al., 2006; Graubner & Richter, 2003: 46-49; Hussey, 2001b: 253-255; Kubr, 2002: 788-797; Maister, 1997a: 12-15, 172-174; Richter et al., 2005b:

12; Scott, 1998: 137). Such decisions can be taken at different hierarchical levels (Baer & Stoll, 1999: 212-213; Kubr, 2002: 789; Maister, 1997a: 181-184; McKenna & Maister, 2002: 227; Müller-Stewens et al., 1999: 102-106, 110-113; Wallace, 1995a: 819). For example, there are firm leaders who are known to be actively involved in recruitment and promotion decisions (Lorsch & Tierney, 2002: 81, 97-99).

The higher in the hierarchy these decisions are taken, the higher is the degree of centralization. As a result, the ranks of the decision makers for the topics listed in Table 8 are discussed in personal interviews to assess the degree of centralization in the management consultancies.

Section	Topic	High centralization	Low centralization
3.3.4.2	Conclusion of client contracts	Partners, possibly one or few of them	Junior consultants and support staff
3.3.4.3	Corporate governance	Partners, possibly one or few of them	Junior consultants and support staff
3.3.4.4	Recruitment	Partners, possibly one or few of them	Junior consultants and support staff
3.3.4.4	Staffing	Partners, possibly one or few of them	Project managers and support staff
3.3.4.4	Performance-related decisions	Partners, possibly one or few of them	Junior consultants and support staff

Table 8: Topics related to centralization and their associations with the theoretical concept

3.3.5 Formalization

3.3.5.1 Introduction

Formalization refers to the use of rules, methods, and procedures and to the extent to which an organization relies on paperwork for their enforcement. It encompasses the constructs of standardization and documentation. A num-

ber of topics from different phases of the consulting project life cycle (section 3.2.1.1) can serve as indicators of formalization in consulting firms.

3.3.5.2 *Client contract*

The first topic related to the formalization construct is the type of client contract. Consultancies can be differentiated based on whether or not a written document is used and how specific the contract is regarding project contents and end products (Graubner & Richter, 2007; Kubr, 2002: 174-177; Niedereichholz, 2001: 337-338; Scott, 1998: 5). Some consulting firms have standard documents including lengthy legal provisions, whereas others draft less detailed contracts individually for each project. In addition to verbal agreements and written contracts, letters of agreement can be used as a type of client contract (Graubner & Richter, 2007; Kubr, 2002: 176-177; Niedereichholz, 2001: 338). A letter of agreement is sometimes referred to as letter of commitment. It expresses both parties' intention to work together on a consulting project. Depending on national legal provisions, a letter of agreement is less enforceable than a written contract. This type of agreement is associated with a medium level of formalization as it is "generally less formal and detailed than most written contracts" (Kubr, 2002: 177).

3.3.5.3 *Customer feedback*

Similar criteria apply to the collection of customer *I*. Consultants ask their customers to provide feedback during, upon conclusion, and some time after consulting projects (Kubr, 2002: 729; Müller-Stewens et al., 1999: 93-94). They can merely collect oral feedback or use feedback forms with open-ended or closed questions (Kubr, 2002: 731; Maister, 1997a: 66-67; 1997b: 57, 78-79; Niedereichholz, 2000b: 339-342). The latter represents the highest degree of formalization.

3.3.5.4 Knowledge management

Another topic with relevance to formalization is how knowledge is codified and spread throughout a consulting firm. Horizontal information flow is the most critical in a professional service environment, whereas in traditional industrial companies the vertical component prevails (Teece, 2003: 903). The difference has implications on the way knowledge is managed and exchanged. While some consultancies rely on the oral exchange of tacit knowledge only, others store the insights and learnings from their projects as explicit knowledge (Alvesson, 1995: 122-129; Fosstenlokken et al., 2003: 860-862; Morris & Empson, 1998: 616-620; Müller-Stewens et al., 1999: 118-121; Werr, 2002: 91-108; Werr & Stjernberg, 2003: 883-886; Widmer & Brun, 1999: 236-252). They use databases or more encompassing knowledge-management systems to make information such as detailed manuals how to conduct certain types of projects widely available throughout the firm (Bürger, 2004: 143-148; Crucini, 2002: 111-115; Hansen & Haas, 2001: 2; Maister, 1997b: 161-162; Niewiem & Richter, 2004: 12; Werr, 2002: 101-104). Although more formalized approaches initially appear preferable, they might be inferior as the availability of knowledge can negatively impact performance (Hansen & Haas, 2001: 5). The topic of knowledge management is considered to be an aspect of organizational structure, at least in knowledge-intensive organizations (e.g., Donaldson, 2001b: 955-956).

3.3.5.5 Mentorship

Finally, the approach to mentorship⁵⁵ is an indicator of formalization in management consulting (Ibarra, 2000: 154-155; Landriscina, 2001: 9-10). Mentorship refers to a one-on-one relationship between an experienced consultant serving as mentor and his or her mentee being a younger, less experienced col-

⁵⁵ Mentorship as an internal activity needs to be distinguished from coaching of clients of the consulting firm (Kubr, 2002: 80-83).

league. The mentor typically provides advice and guidance on professional matters, for example, on firm policies and career development (Esposito & Koplos, 1994: 20.16-20.17; Maister, 1997a: 157-159). Mentoring relationships can be mandatory with seasoned consultants supporting their mentees' development on a long-term basis (Clark, 2000: 39; Esposito & Koplos, 1994: 20.16-20.17; McKenna & Maister, 2002: 225-227; Rasiel, 1999: 142). Regular performance evaluations can be among the mentors' responsibilities in this case. In contrast, mentoring relationships may be not formally established and not existing at all. A large scale U.S. survey found that approximately one third of management consultants did not have a mentor (Landriscina, 2002: 13). A medium degree of formalization can be associated with voluntary relationships that evolve over time and cease as their value diminishes (Clark, 2000: 39; Esposito & Koplos, 1994: 20.16-20.17; Kubr, 2002: 83; Lorsch & Tierney, 2002: 109; Maister, 1997a: 158, 196; 1997b: 96, 106).

The topics related to formalization and their associations with the theoretical concept are summarized in Table 9.

Section	Topic	High formalization	Low formalization
3.3.5.2	Client contract	Specific, written standard contracts	Oral agreement
3.3.5.3	Customer feedback	Feedback forms with closed questions	As occurring
3.3.5.4	Knowledge management	Knowledge management systems containing detailed manuals	Oral communication of tacit knowledge
3.3.5.5	Mentorship	Mandatory, long-term relationship	Not practiced

Table 9: Topics related to formalization and their associations with the theoretical concept

The previous sections outlined topics related to the four theoretical concepts of structural differentiation, specialization, centralization, and formaliza-

tion. These topics are addressed during personal interviews. The findings are presented in section 4.2.2 through 4.2.9.

3.4 Data generation

3.4.1 Selection of consultancies

The European Federation of Management Consultancies Associations estimated that there were 57,000 consulting firms in Europe in 2002 (FEACO, 2003: 4). The corresponding figures for the relevant market as defined below were approximately 14,400 for Germany, 2,200 for Austria, and 600 for Switzerland (ASCO, 2003: 4; BDU, 2003: 8; FEACO, 2003: 12; Wohlgemuth, 2003). With populations of such magnitude, a sample had to be derived for qualitative research (section 3.1).

The selection of consultancies for the sample aimed to capture a broad range of firms in terms of the contingencies (sections 3.2.1 and 3.2.2) and organizational structure (sections 3.3.2 through 3.3.5). Such a sample could not be generated by random draw. For example, the consulting industry has become highly concentrated with few large and a lot of small firms (Bäcklund & Werr, 2001: 2; Kipping & Armbrüster, 1999: 19-21; Wohlgemuth, 2000: 9-10). As of 2003, more than 69 percent of the German consulting firms are small with less than EUR 0.5 million annual revenue (BDU, 2003: 8). They collectively account for only 16 percent of the total market in terms of revenue (BDU, 2003: 8). Similarly, 83 percent of the Swiss consultancies have less than SFR 0.75 million⁵⁶ revenues and a market share of 18 percent (ASCO, 2003: 4; Wohlgemuth, 2003). Small firms are less interesting for this research than their larger peers as their organization is little explicit (Richter et al., 2005b: 6). They have been excluded from previous organization research in the professional services (e.g.,

⁵⁶ Equals approximately EUR 0.5 million.

Greenwood et al., 1990: 729). However, these firms would represent more than two thirds of a random sample. To account for such effects and to achieve the aspired broad variations among firms, the sample has been compiled carefully in line with established sampling strategies (Miles & Huberman, 1994: 27-34; Neuman, 2000: 196-200). The process is outlined in the following.

The starting point for the sampling process was the global population of consulting firms. To minimize the variations caused by the external environment, consultancies were chosen which operate in a homogeneous socio-political context, namely the *German-speaking market* of Germany, Austria, and Northern Switzerland. These three countries, with similar legal and institutional features, arguably form a common market. The geographic focus also eliminated language barriers (section 3.4.2) and facilitated the execution of personal interviews with regard to travel time and expenses.

For the German-speaking market, the industry reports available in spring 2003 listed a number of in-house consultancies among the leading service providers (e.g., ASCO, 2003; Lünendonk, 2002a; 2002b). These consultancies primarily operate within their parent corporation but may also serve external customers (section 1.1.2). In particular the internal share of business of in-house consultancies is unique with regard to business acquisition, contract management, and customer relationship management, among other aspects (Kinard, 1994: 2.5; Klein, 2002: 136-199; Niedereichholz, 2000a: 14-53; Schrädler, 1996: 18-20). These consultancies are widely dependent on decisions taken by the management of their parent corporation (Niedereichholz, 2000a: 14). They also have different organizational structures, with career paths that often lead into the parent corporation being a prime example (Baur, 2000: 171; Klein, 2002: 167-170; Neal & Lloyd, 2001: 477-478; Niedereichholz, 2000a: 25). Consequently, the sample was limited to *non-in-house* consulting firms.

Another sampling criterion was the *consulting firms' size*. Small consultancies are likely to have little explicit organizational policies and procedures (Dickmann et al., 2006; Graubner & Richter, 2003: 45-46). Therefore, firms with a maximum of five consultants and annual revenues of EUR 0.6 million or less

were excluded from the sample.⁵⁷ Medium-sized and large consultancies were identified from industry reports (Alpha Publications, 2002: 59-78; ASCO, 2003: 5; BDU, 2003: 8; Lünendonk, 2002a: 17-19; 2002b: 9-12). These publications listed 49 large consultancies and more than 4,400 medium-sized consultancies when the borderline between the two groups is drawn at 100 consultants and EUR 30 million annual revenue for the purpose of this research study.

The industry reports by Kennedy Information (2003b), Lünendonk (2002a; 2002b), BDU (2003), FEACO (2003), ASCO (2003), and Alpha Publications (2002) also provided the information necessary to ensure a broad range regarding *service offering, age, legal form, national origin, and ownership* for an approximately equal number of large and medium-sized, non-in-house consultancies in the specified geographic region.

Following the sampling process, firms were gradually approached for a personal interview. Representatives from 16 of the 49 large firms agreed to participate in this research project as well as 17 from the group of medium-sized consultancies. Only two firms declined while two others did not respond yielding an overall acceptance rate of 89 percent.⁵⁸ The names of the individual consulting firms are not provided to ensure confidentiality (section 3.2.2). The overall sample is delineated in Figure 15.

⁵⁷ The BDU (2003: 8) classifies consultancies with less than EUR 0.5 million annual revenue as small, EUR 0.5 – 20 million revenue as medium-sized, and more than EUR 20 million as large. Armbrüster & Barchewitz (2004) classify consulting firms with five or less consultants as small, between 6 and 49 consultants as medium-sized, and more than 50 consultants as large. Kubr (2002: 47) draws the borderlines at five consultants between small and medium-sized and at 100 consultants between medium-sized and large firms. The classifications based on number of consultants and annual revenues arrive at a very similar definition of small firms. Average annual revenue per consultant for this category is approximately EUR 125,000 (BDU, 2003: 8) which leaves firms with a maximum of five consultants at annual revenues of EUR 0.6 million or less.

⁵⁸ High acceptance rates are no exception in interview-based research. For example, the Aston group had an acceptance rate of 96 percent (Greenwood & Devine, 1997: 205).

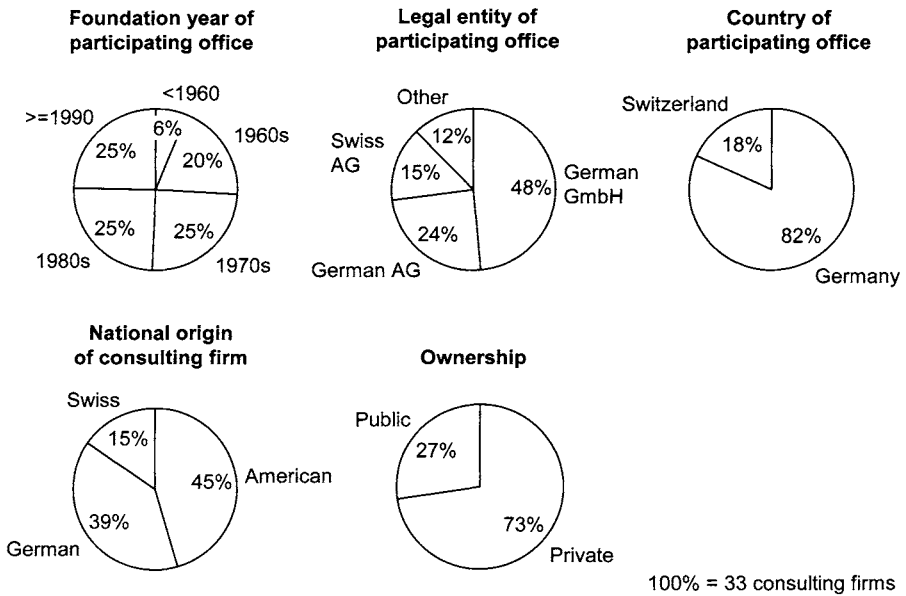


Figure 15: Characteristics of the consultancies included in the research sample^{59,60}

Foundation year, country, and legal entity characterize the participating office whereas national origin and ownership relate to the overall firm.⁶¹ For example, the earliest establishment of an office in the relevant market was in 1932, the most recent in 1999, while on average, consultancies have been established in the relevant area since 1980. Some of the consulting firms with American roots have a much longer history in their home market (section 1.1.1).

⁵⁹ The percentages may not add up to 100 percent due to rounding differences.

⁶⁰ There was no Austrian office as locations in Austria belonged either to the German or to the Swiss office. See section 1.3.3 for the distinction between an office and a location.

⁶¹ Section 1.3.3 discusses the difference between an office and the overall firm.

3.4.2 Primary data

This research study is first and foremost based on primary data to be collected in the field (section 3.1). The primary data were obtained during a series of personal interviews. A number of factors may influence the information obtained in this setting (Bortz & Döring, 2002: 195, 544; Bouchard, 1976: 368-371; Neuman, 2000: 332-337). To minimize their effects, aspects such as pre-information of interviewees, order of topics, information recording, or language were held constant throughout the interview series. Other aspects such as the interviewees' gender, age, or educational background were recorded to be able to assess their influence in hindsight. In addition, possible concerns regarding confidentiality were actively addressed. The participants were guaranteed that only disguised information will be published. Some of them were given a written confirmation upon request.

The interviews were semi-structured and conducted with the help of an interview topic list. This procedure left room for deductive as well as inductive elements. It has been proposed as preferable approach for data generation in qualitative research (e.g., Bouchard, 1976: 371-373; Mayer, 2002: 36-37). Neither the topic list nor the hypothesized relationships to be tested with interview data were provided to any of the interviewees. An English translation of the topic list is presented in Appendix I.

The interviews comprised three major parts, the order of which was kept constant throughout all interviews. First, the task of management consulting was addressed. The interviewees were initially given the chance to talk about their market and the type of customers they serve. To start out with a topic interviewees were familiar with helped them to feel comfortable and to mull the general problem with many of the pertinent facts over (Bortz & Döring, 2002: 310; Bouchard, 1976: 372). The relatively unspecified beginning was followed by a discussion of a typical consulting project primarily to address the task uncertainty topics (sections 3.2.1.2 through 3.2.1.12). Some of the closely associated organizational topics were raised as well such as knowledge management or simultaneous projects both of which play a central role during the project

execution phase. Second, organizational structure was addressed in terms of structural differentiation, specialization, centralization, and formalization (sections 3.3.2 through 3.3.5). The discussion was concerned with those topics that are not closely related to a phase of a typical consulting project and hence were not addressed in part one. Third, background information was obtained about the interviewees (Figure 16) and – if such information was not available from secondary sources (section 3.4.3) – about firm characteristics including different measures of organizational size.

All interviews were conducted by the same interviewer between March and November 2003. They were all face-to-face interviews with one experienced representative for each of the 33 consultancies included in the sample. Over 90 percent of the interviewees were consultants of different hierarchical ranks with the top-level group consisting of CEOs, board members, and other partner-level consultants accounting for more than one third of the total. Interview partners were between 28 and 55 years.⁶² Their average age was 37 years. They had a minimum of 2 and a maximum of 21 years of tenure in their consultancies with an average of more than six years. Almost 90 percent of them were male, which appears to be an excellent approximation of the total population.⁶³ All interviewees held university degrees, many of them in business, economics, or engineering and few in fields such as psychology, history, or law. Almost half of them had pursued post-graduate studies and earned a second degree. Further details about the group of interviewees are provided in Figure 16.

⁶² Few of the age figures had to be estimated.

⁶³ For example, 87 percent of the Swiss management consultants were male and 13 percent female in 2002 (Wohlgemuth, 2003).

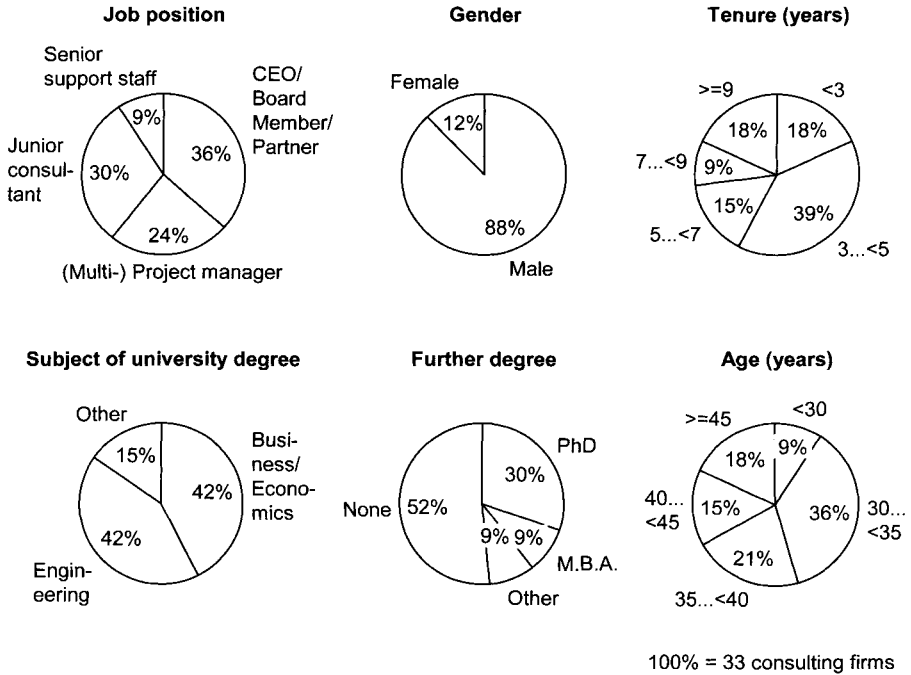


Figure 16: Characteristics of the interviewees⁶⁴

Each interview lasted between 45 and 90 minutes with an average of approximately one hour. They were conducted in German, the mother tongue of the interviewer and all but one interviewee. The non-native speaker was a Briton, who was bilingual as he had lived in the German-speaking region of Switzerland for more than 20 years. All interviews were tape-recorded with the exception of one interview. The content of the unrecorded session was captured through extensive notes taken during and immediately after the interview in order to respect the interviewee's request not to be taped. Similarly, background information collected during the last part of the interview such as the interviewees' educational background or consulting tenure was often not taped but captured in written notes. The interview locations were chosen by the

⁶⁴ The percentages may not add up to 100 percent due to rounding differences.

interviewees so that they could select a site where they felt comfortable and safe. Out of the 33 interviews, 18 were executed in the interviewees' offices, 13 in other locations well-known by the interviewees, and two at sites such as a university office.

In addition to the 33 'regular' interviews, 3 'cross-firm' interviews were conducted with experienced consultants who had been employed by two of the consultancies from the sample. These three individuals were not identical with the interviewees described above and hence not included in Figure 16. Two of them were still active in consulting at the time of the interview, whereas one had just left the industry. Cross-firm interviews, too, were conducted in German and tape-recorded for later analysis. They were concerned with the differences and commonalities between two consultancies in terms of task (section 3.2.1) and organizational structure (section 3.3). The cross-firm interviews were used to increase data accuracy and to validate the findings from the analysis of the 'regular' interviews (section 3.5.3).

3.4.3 Secondary data

Secondary data are employed for the assessment of firm characteristics (Figure 15) and organizational size (section 3.1). The latter is assessed by the number of consultants, the number of employees, and annual consulting revenues as alternative measures of firm size (section 3.2.2).

The data were obtained from two different types of sources. If included, the information was taken from industry reports by ASCO (2003) and the annual Lünendonk reports (Lünendonk, 2004a; 2004b). For most of the smaller firms, secondary data were drawn from sources published by the consulting firms themselves. Such publications included annual reports, websites, and firm brochures. The consultancies' own figures were also used to validate the information from industry reports mentioned above to ensure consistency and compatibility. In addition, firm size figures were checked for plausibility using

the ratios annual revenues per consultant, annual revenues per employee, and consultants' share of total employment.

If secondary data were not available from either source type, the information about firm characteristics and company size were obtained as primary data during the last part of personal interviews (section 3.4.2).

3.5 Qualitative data analysis

3.5.1 QDA software

QDA used to be done manually using, for example, highlighters, scissors and adhesives, and colored paper to mark and organize non-numerical data. Computer programs have improved this cumbersome process in terms of speed, data capacity, comprehensiveness, thoroughness, and consistency and have become standard in QDA (DeNardo & Levers, 2002: 3; Gibbs, 2002: 11; Marshall, 2002: 58; Mayring, 2002: 135; Weitzman, 2000: 803-807). In particular (post)positivism-oriented research performing quantitative analysis of qualitative data benefits from computer support (Rynes & Gephart, 2004: 459). Different types of computer programs are available to analyze qualitative data including text retrievers, text base managers, code-and-retrieve programs, code-based theory builders, and conceptual network builders (Miles & Huberman, 1994: 311-312; Neuman, 2000: 437-439; Weitzman, 2000: 808-810).

The type of QDA envisioned needs to be considered when selecting a particular software (Jackson, 2003: 100; Miles & Huberman, 1994: 313-315; Weitzman, 2000: 810-816). QDA can be broadly divided in automatic and manual analysis. During automatic analysis the computer checks the words in the text against the words specified in a pre-defined dictionary that contains meaning categories and words associated with these categories. It then rates text passages according to whether they refer to one or more meaning categories. The more often a category occurs, the more important or central it is to the text. Automatic data analysis is criticized for not being very context sensitive

(Baptiste, 2001: 6; Bligh et al., 2004: 224; Kabanoff et al., 1995: 1080). For this and other reasons manual analysis is chosen for this research project (section 3.5.3).

To facilitate QDA in this research, the code-based theory builder software NVivo 2.0 was selected as software tool. The first version of the program was developed in the late 1990s as an advancement of the well-known NUD.IST software and has been successfully applied, for instance, in dissertation projects (Fitzgerald et al., 2003; Jemmott, 2002). NVivo is designed to meet the demands of a diverse range of qualitative researchers (DeNardo & Levers, 2002: 6-7; Jackson, 2003: 100; Welsh, 2002: 2). The program provides a number of advantages over other software packages. It allows for convenient management of large amounts of qualitative data and offers various choices in the process of coding. In NVivo the text passages to be linked can be single words, phrases, sentences, paragraphs, sections, or whole documents. They are coded to nodes which represent a particular topic. Pictorially speaking, nodes are tag-marked boxes in which the text associated with that tag is stored. Nodes can be created before or during data analysis in NVivo. They can be grouped together and hierarchically sorted in a tree structure. Not all nodes need to have coding, some might just serve as upper-level categories for a number of sub-level nodes at which text is coded. Text can simultaneously be coded at different nodes. NVivo enables the researcher to work iteratively as text can be coded and uncoded, and nodes can be moved, copied, merged, or deleted without limitations. It also supports the coding process through search functions which are highly advanced compared to what is known from text processing software such as Microsoft Word.

3.5.2 Qualitative data preparation

Qualitative data typically need some 'processing' after their generation before they can be analyzed (Friedrichs, 1990: 376; Marshall, 2002: 56; Mayring, 2002: 85-102; Miles & Huberman, 1994: 9). In this research, the primary data were stored on audio tape and needed to be prepared for analysis with NVivo

software. First, the tapes were transcribed word-for-word into rich text format (rtf). This file format is required by NVivo and similar to Microsoft Word format (doc). The files are named 'Interview #.rtf' with # being an arbitrary number between 1 and 33. Second, company identifying information in the interview text such as the name of the firm, the interviewee, the founders, and other well-known people associated with a particular consultancy were replaced by anonymous phrases like 'firm #'. All questions were then formatted in italic style for later identification of text passages from questions as opposed to information provided by the interviewees. Finally, the equivalent of more than 870 pages of interview transcripts was imported into NVivo for coding, the first step of data analysis.

3.5.3 *Exploratory data analysis*

The aim of the exploratory data analysis was twofold. First, the measures were identified for the theoretical concepts of task uncertainty, structural differentiation, specialization, centralization, and formalization in a management consulting context. Second, the consultancies' values for these measures were assessed.

The analysis of qualitative data typically starts with coding. Manual analysis including manual coding was chosen as the preferred method of this research. During manual coding the researcher repeatedly reviews texts and links passages to each other based on certain criteria (Gibbs, 2002: 65, 79; Marshall, 2002: 56-57; Seidel, 1998: 3-4). Criteria might be that the passages contain descriptions or evaluations, are questions, indicate moods, are expressed by the same person, or relate to a particular subject matter. In this research project, coding was solely based on subject matter. Information about a subject matter was compiled as the relevant passages from each of the 33 interviews were coded together at a node. An example of subject matter based text coding is shown in Appendix II.

The manual coding in this research project started with the three major interview sections on task, organizational structure, and background information (section 3.4.2). The corresponding passages from each of the 33 interview transcripts were coded at the three parent nodes.⁶⁵ This initial coding step guaranteed that all text was coded at one of the parent nodes and the complete information from the interviews was captured for further analysis.

All three parent nodes were then reviewed to find segments with relevance for more than one parent node. For example, the interviewee might list the industries his or her firm serves in the first section about task. She might also talk about the industry practices her firm is structured by while jumping back and forth between these two aspects. In addition to being already coded at the task uncertainty node, this text passage was then also coded at the organizational structure node. This first review ensures that each of the three parent nodes contained all information relevant to its respective subject. As a result, all interview text was coded at one parent node with some passages being coded at two or three nodes (Figure 17).

⁶⁵ In accordance with NVivo terminology, the expressions parent node, child node, grandchild node etc. are used to refer to related nodes at different hierarchical levels while related same-level nodes are called siblings.

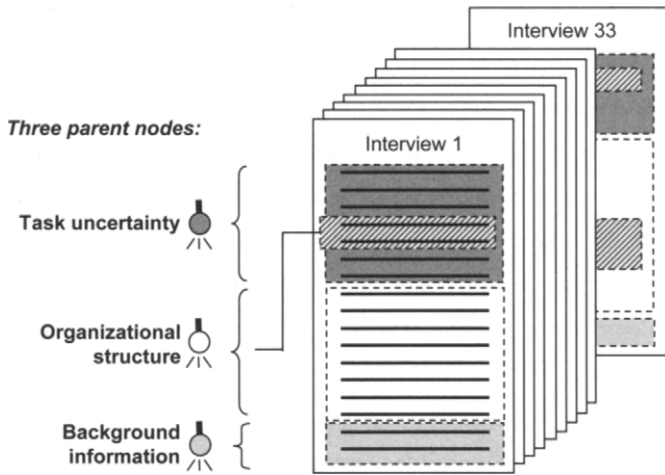


Figure 17: Initial coding at three parent nodes

The two parent-level nodes about task and organizational structure held more than 97 percent of the primary data which is equivalent to approximately 845 pages of interview transcripts. To tap the enormous amount of information contained in the qualitative descriptions, the two nodes were repeatedly reviewed, analyzed, and structured by coding. Through the coding process more and more detailed nodes with subtle distinctions were developed. Moving from broad categories to finer ones is a suggested technique for the coding of qualitative data (Marshall, 2002: 67; Miles & Huberman, 1994: 69). The nodes were organized in a tree structure with hierarchical levels. Some of them corresponded with the topics discussed in interviews, others represented new aspects that emerged during interviews or surfaced in the reviewing process.

- Below the parent node for *task uncertainty*, a child node was created for each of the topics addressed during the first interview segment (sections 3.2.1.2 through 3.2.1.12). The corresponding text previously coded at the task uncertainty node was then coded at child nodes. The answers to some of the interview topics could be divided further into distinctive

sub-topics. They were consequently coded at grandchild or even great-grandchild nodes.

In addition, child nodes were created for new aspects not represented by one of the interview topics. For example, some interviewees reported that a normal part of consultants' work was to fill line positions at their customers for the interim until a permanent successor was identified. Others talked about a similar phenomenon called 'body leasing' which referred to consultants working as temporary work force solely under the customer's direction and responsibility. These extensions of consulting services were new facets of task uncertainty that surfaced during interviews. They were therefore coded at additional child nodes.

- Similar to task uncertainty, child, grandchild, and great-grandchild nodes were added below the parent node for *organizational structure*. One child node was created for each of the theoretical constructs of structural differentiation, specialization, centralization, and formalization. At the grandchild node level, nodes were added for the topics purposely addressed during interviews (sections 3.3.2.2 through 3.3.5.5). The relevant text coded at the parent node was then coded at its child nodes and grandchild nodes. As described for task uncertainty above, additional grandchild nodes were created for emerging themes and lower level nodes were added for distinctive sub-topics.
- The parent node with *background information* contained very little text compared to the other two parent nodes. The first reason was that this interview part is short relative to the segments on task uncertainty and organizational structure. Second, this interview section was not always tape recorded because the relevant information such as tenure or educational background of the interviewee could be easily captured by written notes (section 3.4.2). As it was concise already at the parent node level, the node was analyzed without being structured further by additional coding. It held information about the firm and the interviewee as well as data about different measures of firm size (section 3.2.2). This informa-

tion was manually transferred into an Excel spreadsheet for further analysis. The results are provided in Figure 15 and Figure 16.

The results of manual coding were two extensive node trees about task uncertainty and organizational structure. They are shown in Appendix IV. Each of these nodes was reviewed in detail to find appropriate measures for task uncertainty and the structural constructs of structural differentiation, specialization, centralization and formalization. The nodes were repeatedly examined whether or not they show differences between consultancies. In addition to cognitive assessment, key expressions used by one interviewee were tracked across interviews and compared with terms of similar meaning.⁶⁶ The search functions of NVivo greatly facilitated this type of analysis. An example is presented in Appendix III. As a result, the reviewing process also considered the language used by interviewees to describe phenomena. Language was therefore viewed as both medium and message.⁶⁷ Being able to analyze not only *what* is said but also *how* it is said is one of the major advantages of QDA (Miles & Huberman, 1994: 10; Rynes & Gephart, 2004: 455).⁶⁸

If all interviewees reported nearly identical information, the node was not considered further. If, in contrast, distinct values could be identified, the topic represented by the node was considered to be a measure of its corresponding theoretical concept. The consulting firms were ranked and grouped by their values depending on whether they scored high or low on the theoretical concept. An example is presented in Figure 18 with levels among consultants being the topic that is coded at the grandchild node level. Three distinct

⁶⁶ The language used during interviews could be analyzed for 32 out of the 33 interviews. One interview was not recorded on audio tape but captured through extensive notes upon the interviewee's request not to be taped (section 3.4.2).

⁶⁷ This view is deeply embedded in the grounded theory school of qualitative research established by Glaser & Strauss (1967) that aims to inductively derive theory from the data (Charmaz, 2004: 509; Gibbs, 2002: 1; Neuman, 2000: 145-146; Welsh, 2002: 3).

⁶⁸ The transcription of the tapes did not allow to analyze aspects such as pauses in speech, tempo, or mood of the interviewee (Mayer, 2002: 46-47).

categories of firms could be distinguished so that the topic was considered as a measure of structural differentiation in management consulting.

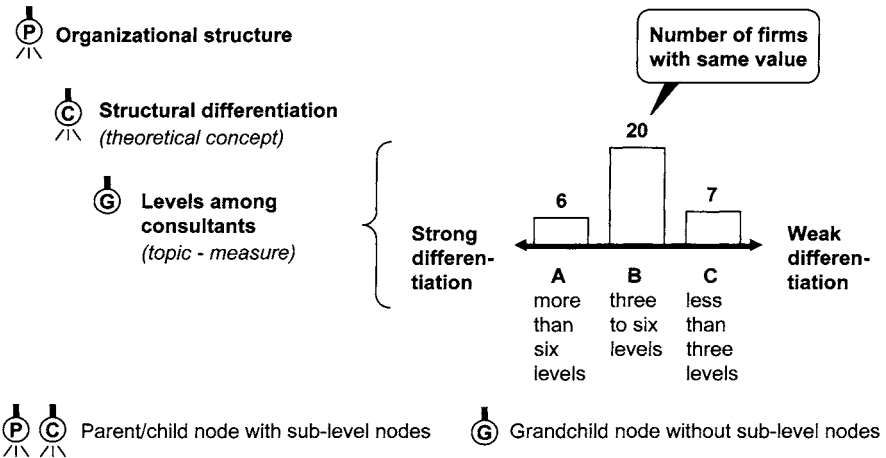


Figure 18: The identification of measures and consultancies' values

The findings for the task uncertainty contingency are presented in section 4.1.1 and for the constructs of organizational structure in sections 4.2.2 through 4.2.8.

3.6 Aggregation of values for measures to values for theoretical concepts

The results of exploratory data analysis were measures for each of the qualitative concepts. In addition, consultancies' values for these measures were ascertained. The research hypotheses, however, are concerned with theoretical concepts and not with their measures. Therefore, the next step was the aggregation of the values for measures to values for the theoretical concepts for each firm. The aggregation was based on the computation of an average value across all the measures of a theoretical concept.

The measures of the *task uncertainty* concept were found to be ordinal scaled with distinct categories similar to school grades (section 4.1.1). Between three (A ... C) and five (A ... E) categories could be distinguished. To obtain an average value across differently scaled measures, category A as the category with the highest value in each theoretical concept was always assigned the numerical value of 5. The category with the lowest value was always assigned a value of 1, while the other categories were distributed evenly in between. So with five categories A = 5, B = 4, C = 3, D = 2, and E = 1, whereas with four categories A = 5, B = 3.66, C = 2.33, D = 1, and A = 5, B = 3, C = 1 with only three categories.

Likewise, the measures of the *structural constructs* had ordinal scales with three categories (sections 4.2.2 through 4.2.8). The categories A, B, and C were assigned the numerical values of 5, 3, and 1, respectively. Ordinal scales with values from 5 to 1 have been used in previous empirical research to assess organizational structure (e.g., Alexander & Randolph, 1985: 852).

The rationale behind this procedure was the assumption that the highest and the lowest category marked end points of scales that varied in their fineness. This notion was analogous to different school grading systems in which an excellent performance would be awarded the highest grade, a poor performance the lowest grade, and the others were distributed in between according to the fineness of the grading system.

As a next step, the simple average across all measures was computed as the value for the theoretical concept. For example, if a firm ranked in the highest category A for all measures of task uncertainty, its task uncertainty value was at the possible maximum of 5.0. If it was consistently assigned to the lowest category, its task uncertainty value was 1.0.

The aggregation based on a simple average assigned equal importance to all measures. The simple average was chosen as any weighting of measures would be arbitrary. It is robust concerning extreme values and missing data (Bortz, 1999: 37-39; Healey, 1996: 67-69). As any measure of central tendency,

the average represents a simplification in the sense that the values are summarized and some information about the distribution of values is lost. The computation of averages for ordinal scales assumes equal distances between the categories of a scale. This assumption is justified with few exceptions (Backhaus et al., 2003: 5; Bortz & Döring, 2002: 180-181). Again referring to school grades, the grade point average (GPA) represents the simple average of ordinal scaled grades in different disciplines. As a result, the values for the theoretical concepts were interval scaled and could range from 1.0 to 5.0. They were used to test hypotheses as outlined below.

3.7 Testing of the hypotheses

The work up to this point happened *within* the theoretical concepts. For each of the 33 consultancies, values were determined for the contingency factors task uncertainty and organizational size as well as for structural differentiation, specialization, centralization, and formalization as constructs of organizational structure. The final step used these results to test the seven hypotheses developed in section 2.7. Accordingly, it was concerned with the relationships *between* the concepts.

All of the theoretical concepts had metric scales. Organizational size employed a ratio scale whereas task uncertainty and the structural constructs used interval scales. Regression analysis is a preferable tool for the assessment of relationships between metric-scaled data (Backhaus et al., 2003: 8-9; Friedrichs, 1990: 99; Healey, 1996: 375-392). Ordinary least squares regression was used to analyze the relationships proposed by the seven research hypotheses. It was performed with the data points of 33 consulting firms.

Organizational size is typically transformed with the natural logarithm for regression analysis predominantly to normalize a variable that might oth-

erwise be badly skewed (Abdel-khalik, 1988: 237; Kimberly, 1976: 583; Miller & Dröge, 1986: 547).⁶⁹ This holds true for the number of employees (e.g., Child, 1973b: 174; Donaldson, 1986: 73; Hickson et al., 1969: 386; Miller et al., 1988: 554), as well as for annual sales (e.g., Khandwalla, 1974: 87) and net assets (e.g., Pugh et al., 1969b: 98) as the three most popular measures of firm size in organization theory (sections 2.3.2 and 3.2.2). In addition, curvilinear relationships have been found between organizational size and structural constructs (e.g., Astley, 1985: 209; Blau & Schoenherr, 1971: 22, 56-81; Child, 1973b: 172-174; Donaldson, 2001a: 70; Kieser & Kubicek, 1992: 302-303). The approximation of such relationships with regression using logarithmically transformed size variables tends to be better than without transformation (Blau, 1970: 205; 1972: 4; Blau & Schoenherr, 1971: 22; Dewar & Hage, 1978: 135). Therefore, the regressions were computed with the natural logarithm of the organizational size values when the size contingency was the independent variable. This was the case with hypotheses H1, H2, H3, H5, and H7.

Each of the hypotheses describes a bivariate relationship between two of the theoretical concepts. The visualization of such relationships with two-dimensional scattergrams has proven to be beneficial in social research (Healey, 1996: 375). Scattergrams were used to portray the relationships and to display the corresponding regression lines. Regression lines are an established instrument for the visualization of relationships in social research (Healey, 1996: 375-379; Kimberly, 1976: 583), for example, between organizational size and structural constructs (e.g., Blau & Schoenherr, 1971: 62-79; Child, 1973b: 172-173; Kieser & Kubicek, 1992: 302-303; Mardsen et al., 1994: 916).

In addition, the regression equations are presented with $y = \beta \ln(x) + \alpha$ when organizational size is the independent variable and $y = \beta x + \alpha$ otherwise. Two coefficients are employed to assess the approximation quality of the regressions. The first is the coefficient of determination R^2 and the second is the F -test

⁶⁹ Kimberly (1976: 583-584) and Abdel-khalik (1988: 537-240) discuss the implications of logarithmic transformation in detail.

significance level p_β that is determined for all regression coefficients β .⁷⁰ Finally, the correlation coefficients ρ are provided as useful indicators of the strength and the direction for each of the relationships between two theoretical concepts (Hunter & Schmidt, 2004: 189-190).⁷¹ All of these three coefficients have been used extensively in organization theory research including recent contingency theory studies to assess the relationships between variables (section 2.5).

In regression analysis extreme values may lead to a distortion in the sense that the degree of correlation is overestimated (Blau & Schoenherr, 1971: 22; Bortz & Döring, 2002: 510-511; Kimberly, 1976: 583). One consultancy's size is found to be an extreme value (Figure 30). The impact of extreme values is diminished through logarithmic transformation of organizational size values. However, to account for its influence, the correlation coefficients are provided including (ρ_{33}) and excluding (ρ_{32}) the extreme case for all relationships involving organizational size.

In summary, the following tools and figures are used to assess whether or not the relationships proposed by the hypotheses find support from the data:

- two-dimensional scattergrams with regression lines
- regression equations ($y = \beta \ln(x) + \alpha$; $y = \beta x + \alpha$)

⁷⁰ The F-test measures whether or not some of the regression coefficients β_i of a regression function $y = \sum \beta_i x_i + \alpha$; $i = 1 \dots n$ deviate significantly from zero (Backhaus et al., 2003: 69; Homburg & Krohmer, 2003: 276). The test for each of the regression coefficients β_i is performed by using a t-distribution (Backhaus et al., 2003: 73; Homburg & Krohmer, 2003: 277). For a regression $y = \beta x + \alpha$; $i = 1$ with only one independent variable, the overall F-test and the t-test can be used interchangeably with $F = t^2 = R^2(K-1)/(1-R^2)$ where K equals the number of observations (derived from Backhaus et al., 2003: 70, 75-76).

⁷¹ The correlation coefficient ρ ($\rho_{xy} = \text{Cov}(x,y)/\sigma_x \sigma_y$; $-1.0 \leq \rho \leq +1.0$), also called Pearson's product-moment correlation coefficient, measures the strength and the direction of a linear relationship between two interval- or ratio-scaled variables (Backhaus et al., 2003: 340-341; Bortz & Döring, 2002: 682; Healey, 1996: 386; Neuman, 2000: 330-332). ρ squared equals the coefficient of determination R^2 ($0 \leq R^2 \leq +1.0$) of a linear regression (Backhaus et al., 2003: 96; Homburg & Krohmer, 2003: 257). As this research uses logarithmic transformation of organizational size values, ρ is computed for the relationship between the logarithmically transformed size value $\ln(x)$ and the dependent variable y when size is the independent variable.

- coefficients of determination (R^2)
- F-test significance levels (p_β)
- correlation coefficients ($\rho_{33}; \rho_{32}$).

4 Results

Chapter 4 presents the results of the empirical analysis of structural contingency theory in a management consulting context. Section 4.1 is concerned with the contingency factors. The measures of task uncertainty are discussed in section 4.1.1 including those measures that surfaced during exploratory data analysis. Sections 4.1.2 and 4.1.4 provide consulting firms' values for task uncertainty and organizational size. Section 4.2 introduces the measures of structural differentiation, specialization, centralization, and formalization, again including measures emerging from the data. It also presents the consultancies' values for each of the four constructs of organizational structure. Based on these results, the relationships between the theoretical concepts as proposed by the seven research hypotheses are tested in section 4.3. Finally, section 4.4 summarizes the findings of the chapter and relates them back to the parsimonious model of structural contingency theory.

4.1 Measures and values of the contingency factors

4.1.1 Task uncertainty measures

4.1.1.1 Introduction

The coding process as described in section 3.5.3 resulted in an extensive node tree for task uncertainty with the interview text being coded by topic at numerous hierarchically structured nodes as shown in Appendix IV-a. Each of these nodes is reviewed in detail to discern appropriate measures of task uncertainty. If the analysis finds that different values exist among consulting firms, the node's topic is considered a measure of task uncertainty. Ordinal scales are used for each of the measures of task uncertainty as the analysis revealed that the consultancies' values are not widely distributed but rather concentrated at different points of a scale. The consulting firms are therefore assigned to one of the categories of an ordinal scale.

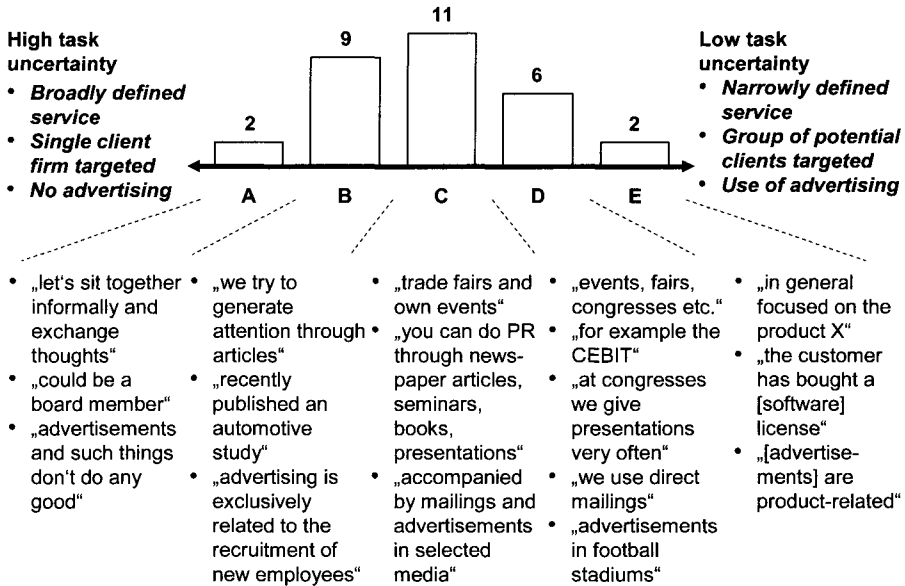
First, the findings for the 11 topics identified from the literature on management consulting are presented (Table 5). Subsequently, service extensions and 'productization', two additional topics that surfaced during the interviews, are introduced. Both topics fulfill the requirements for measures of task uncertainty. The sections and figures below contain numerous citations, which illustrate representative interviewee responses.⁷²

4.1.1.2 Marketing approach

Consultancies were found to use different ways to market their services to clients. The approaches varied regarding the specification of the service offering, the targets of their initiatives, and the use of advertisements. Two firms used a highly customized method to present their service offering (category A). They discussed possible areas of collaboration, which were typically only broadly defined upfront, during personal meetings with executives of a potential client. These firms did not use advertising to generate new business. The least customized way was used by two firms which targeted a wide range of potential customers by advertising a product (E). The consulting services in this case were narrowly defined and offered merely as add-ons to the product. Three other groups which represented the majority of consulting firms could be identified between these extremes. A number of consultancies organized seminars to which they invited a small number of potential clients (B). They also demonstrated their knowledge in articles or books about a large variety of topics. This group used little, if any, advertising to promote their brand. Another group contacted many potential clients simultaneously via standard letter mailings, at trade fairs, or through presentations for large audiences (D). This group typically emphasized their expertise and experience in very few topics.

⁷² The citations are translated from the German original and unattributed in the sense that no reference is provided.

They also advertised their firm name. The last and largest group of consultancies (C) used a mixture of the approaches of the firms from categories B and D.



Not included due to insufficient information: 3 consulting firms

Figure 19: Number of consulting firms by marketing approach

4.1.1.3 Invitation for tender

Invitations for tenders were described as a phenomenon of increasing importance in the management consulting industry “due to higher competitive pressure”. Consultancies tried to avoid bidding processes and leverage their client relationships to win projects: “There are two ways. One is that the customer says, you performed so well before, do this project, too. This is the nicer way. The other is that a bidding process is initiated.” Excellent client relationships were sometimes reported to be essential “to even get invitations for tender”. The reputation of the consultancies was also important in this respect as

more prestigious brands appeared to be more frequently invited to submit a tender.

The degree to which consultancies generated new business through invitations for tender appeared to be an indicator of the competitive pressure in the industry, the quality of client relationships, and the reputation of the consultancy. However, interviewees did not mention either different types of consulting projects in this respect, or uncertainty associated with different consulting services. Accordingly, there appeared to be no link between invitations for tender and task uncertainty. Invitations for tender was therefore not considered further as a measure of task uncertainty.

4.1.1.4 Compensation

Two dominant forms of compensation were found to be used in consulting contracts. Time-and-material and fixed price arrangements could be distinguished, both of which may be complemented with success-based elements. One group of consultancies primarily used time-and-material contracts (A). Its compensation was rarely tied to the outcome of the consulting project, in fact some of these firms refused fees tied to the outcome of the consulting project. As one interviewee explained: "... a project is not like the procurement of c-class goods ... it is unique and not measurable. When you intelligently steer the consultant via levers such as professionalism, reputation ... you gain more than when you ask him to deliver a certain figure." Other firms usually negotiated fixed price contracts which sometimes contained success-based elements (C). The third group of consultancies was open to either compensation form including contingency fees that depend, for example, on project type (B). The use of success fees was limited to those projects for which success measures could be defined and agreed upon. The equally large groups A and B represented the majority of consultancies while only five firms fell into category C.

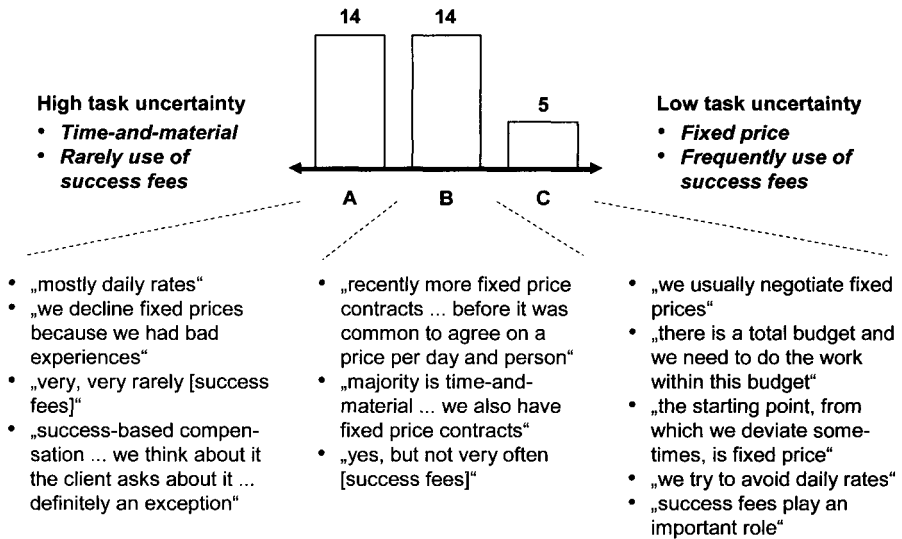


Figure 20: Number of consulting firms by payment scheme

4.1.1.5 Duration of negotiations

The duration of negotiations was found to vary widely. Many interviewees described the negotiation process to be “very different from case to case”. The most frequently mentioned driver of negotiation length was the client’s preparation. Some customers “know exactly what they want ... and look for somebody to do the specifically described tasks”. In contrast, other customers “have only a rough picture” which requires both parties to “approach the core of the topic” in several discussion rounds. Interviewees reported that large projects as well as large client organizations tended to prolong negotiations. Some of them said that “it depends on the topic”, explicitly mentioning the topic of the consulting project as a driver of the duration of negotiations. If the consultancy “enters new areas in which it has not worked before, it certainly takes longer” to negotiate a contract.

Although length of negotiations was found to be linked to different types of consulting services, it was not used as a measure of task uncertainty for two

reasons. First, there was little variation between different consulting firms as all of them experienced a wide range in the duration of negotiations. Second, time consuming negotiations seemed to be more strongly linked to aspects such as the customers' readiness than to the task uncertainty associated with different consulting services.

4.1.1.6 Project planning

The degree of detail to which projects were planned before the project starting phase was similar in all consultancies. There was typically a sketchy working plan describing the project in terms of milestones and deliverables. No interviewee reported that sophisticated network plans or risk analyses were developed. The working plan was drafted during the negotiation phase and discussed with the customer. It was later revised and sometimes further specified during the project starting phase. One interviewee reported: "... there is a working plan in the sense of a Gantt chart. It is not at the level of daily tasks, but I know what the weekly goals are. Maybe the first couple of months or so till the halfway presentation are more detailed than the time thereafter. But in general these things are determined before the kick-off." As no variation among consultancies could be identified, project planning is not used as a measure of task uncertainty.

4.1.1.7 Shift of project focus

The interviewees reported differences in the degree to which the focus of their consulting work remained stable or shifted during the course of a project. One group of consultancies hardly ever experienced major shifts in their project work (C). The central problems they worked on were typically those specified *ex ante*. Some firms had to cope with the phenomenon of focus shifts occasionally but rather as an exception (B), while others described it as regular part of their consulting business (A). The distribution of consultancies across these

three categories was relatively even. At least eight firms representing approximately one fourth of the sample were included in each group.

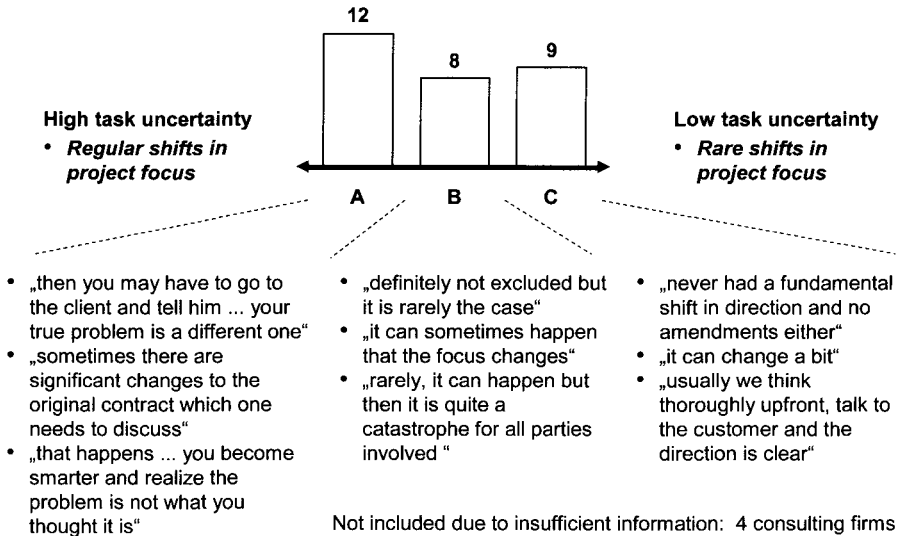


Figure 21: Number of consulting firms by shift of project focus

4.1.1.8 Partner involvement in project execution

The involvement of partners in project execution was found to vary considerably between consultancies. Partners were actively engaged in project execution in six firms in which they frequently adopted a project manager role (A). In some firms they were only deeply involved in project work at times when it appeared necessary (B). This type of involvement was the one found most often. Partners in another group of firms regularly participated in project execution but with little concern for detail work (C), while they rather rarely engaged in project execution in firms from the last category (D). In the smallest group of firms, partners were hardly ever involved in actual project work as they engaged almost exclusively in client relationship management and the acquisition of new projects (E).

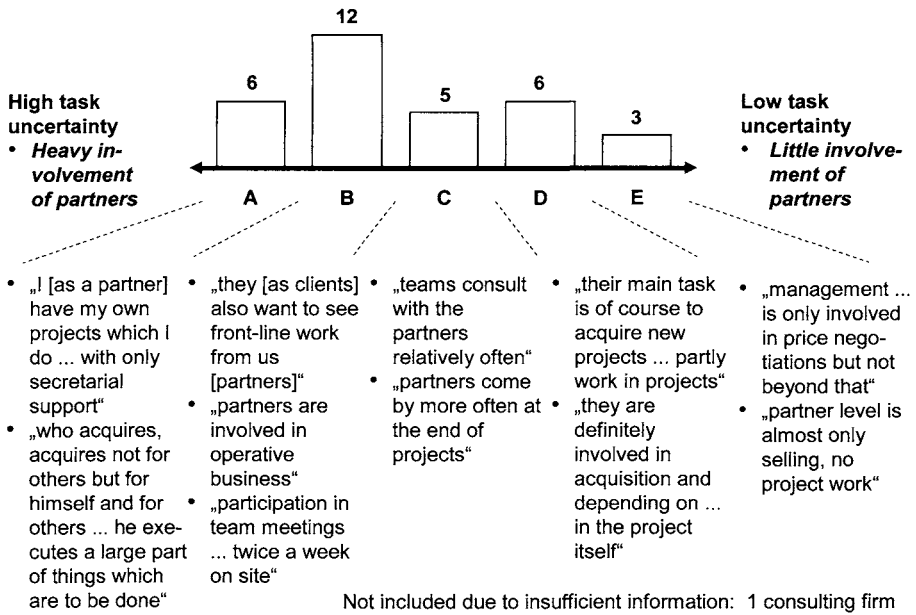


Figure 22: Number of consulting firms by partner involvement in project execution

4.1.1.9 Consultancy involvement in implementation

Consulting firms varied with respect to the extent to which they supported their customers during the implementation phase. Some consulting firms were almost always involved in the implementation of the solutions (D). They also returned regularly for short periods of time after the actual project to provide “aftercare”. In contrast, four consultancies did not perform implementation work (A). These firms representing the smallest group are, at the most, responsible for implementation controlling. Two other groups of firms reported to be either mostly involved (C) or only sometimes, depending on the type of project (B). The last group was heavily involved in implementation work in some projects but not at all involved in others.

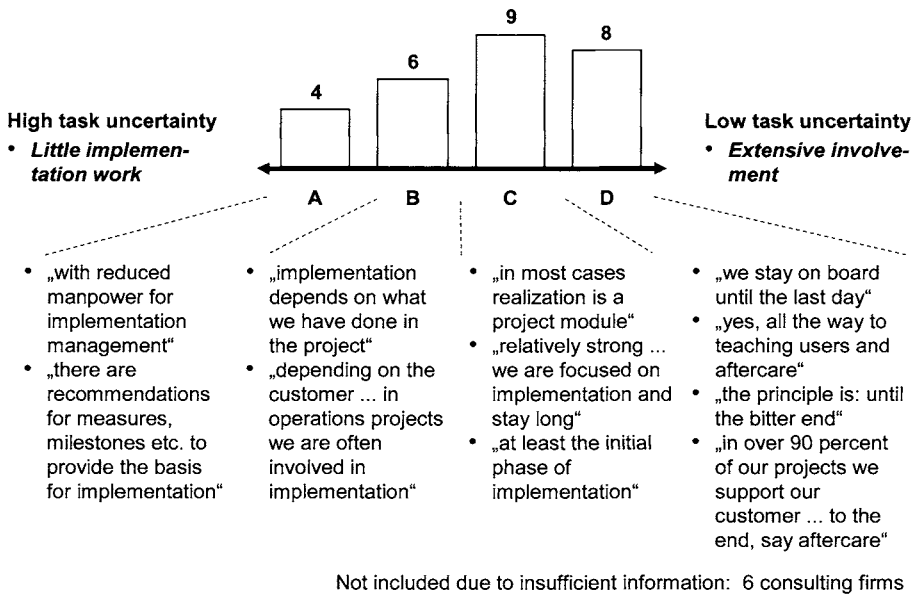


Figure 23: Number of consulting firms by involvement in implementation

4.1.1.10 Industry focus

Differences could be identified with respect to the extent to which consulting firms operated in different industries. The firms also varied regarding their engagement in the public sector, albeit all of them obtained the majority of their revenues from private companies. Three consultancies served many industries and were also very active in the public sector (A). The latter distinguished them from other groups of firms that did only some public sector consulting (B) or very little work of this type (C) in addition to their activities in many industries of the private sector. Some consultancies worked for only a limited number of industries complemented with some public sector consulting (D). Finally, one group of firms was found which focused narrowly on a single industry and worked almost exclusively in the private sector (E). The two largest groups B and D contained almost two thirds of all firms. The remaining consultancies were quite evenly distributed across the three smaller categories.

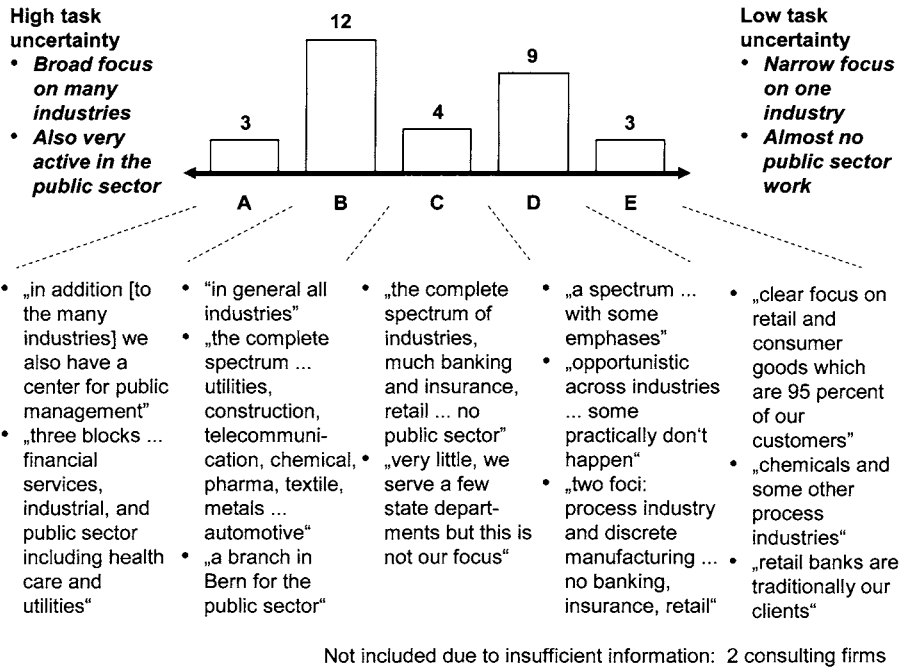


Figure 24: Number of consulting firms by industry focus

4.1.1.11 *Functional focus*

In addition to industrial focus, consulting firms were also found to have different levels of functional focus. While some consultancies worked on a large variety of functional topics (A), others concentrated on one or few particular aspects such as operations management, corporate finance, IT, or marketing (C). In between these extremes were firms which consulted on a limited number of functional topics (B). Each of these groups represented approximately one third of the sample.

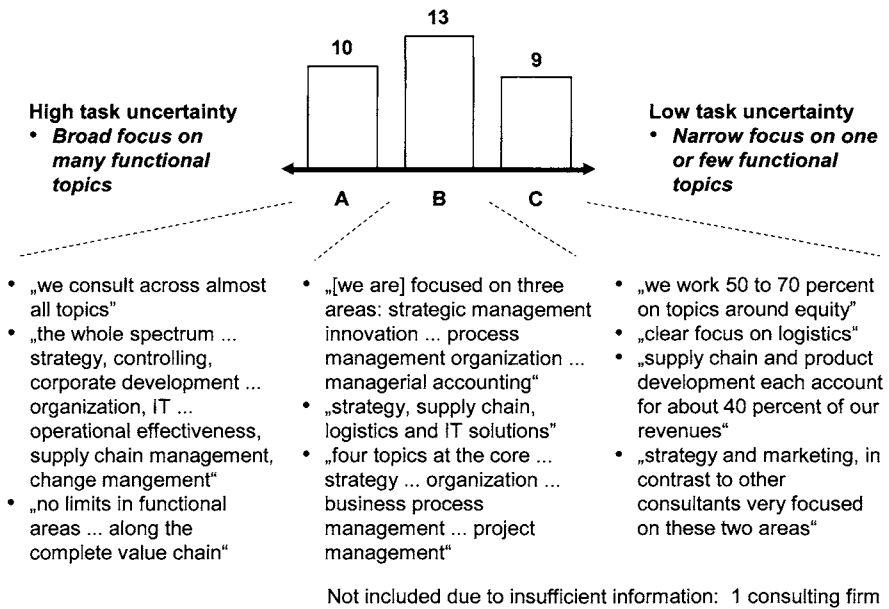


Figure 25: Number of consulting firms by functional focus

4.1.1.12 Repeat business

All interviewees reported that a large proportion of their work was for clients they had served previously. They typically estimated that between 50 and 80 percent of revenues were generated from these customers as “... good projects generate new business. Cross-selling, up-selling, however you call it.” One consultant summarized “If you are in [a client organization], you are in.”

The findings were similar across the sample. Distinct groups of firms could not be identified with regard to the importance and rate of repeat business. As a result, the topic was not used as a measure of task uncertainty.

4.1.1.13 *Service extensions*

During the interviews and exploratory data analysis the topic of service extensions surfaced as an aspect by which consultancies could be differentiated. Several interviewees mentioned that their firms offered services to customers that were performed by consultants but were not considered consulting.

These services could be summarized in two categories, interim management and body leasing. The first referred to consultants temporarily filling line positions in client organizations for several months or even few years. Such positions were typically in middle or upper management. The latter described consultants working as temporary work force under the customer's directive and responsibility, for example to cope with peak demand. As one interviewee described: "[we] simply sent somebody ... who was told by the customer what to do". The consultants acted as technical experts, often on a rather low hierarchical level.

As consultants adopt line positions their work tends to be more repetitive than the project work they would otherwise engage in. They also become familiar with the client organization. Repetitive work is associated with low task uncertainty as argued above for industry focus, functional focus, and repeat business (sections 3.2.1.10 through 3.2.1.12). The argument for low task uncertainty in body leasing is even stronger. Consultants' work was not only more repetitive, it was also beyond the consulting firm's direct control. The management function is shifted to the customer so that consultancy bears less responsibility for results than in typical consulting work. Operative risk is transferred and task uncertainty for the consulting firm is reduced accordingly.

Several consulting firms were found to engage in interim management or body leasing in addition to their traditional consulting work. Three consultancies used their consultants for body leasing on a regular basis (C). Filling fill line positions for their clients for the interim until a permanent successor could be identified, was a normal part of consultants' work in four consulting firms (B). One firm was reported to provide solely management consulting services

(A). The majority of interviewees did not explicitly mention service extensions. However, as they did not deny such activities either, it remained unclear whether or not their companies offered them.⁷³

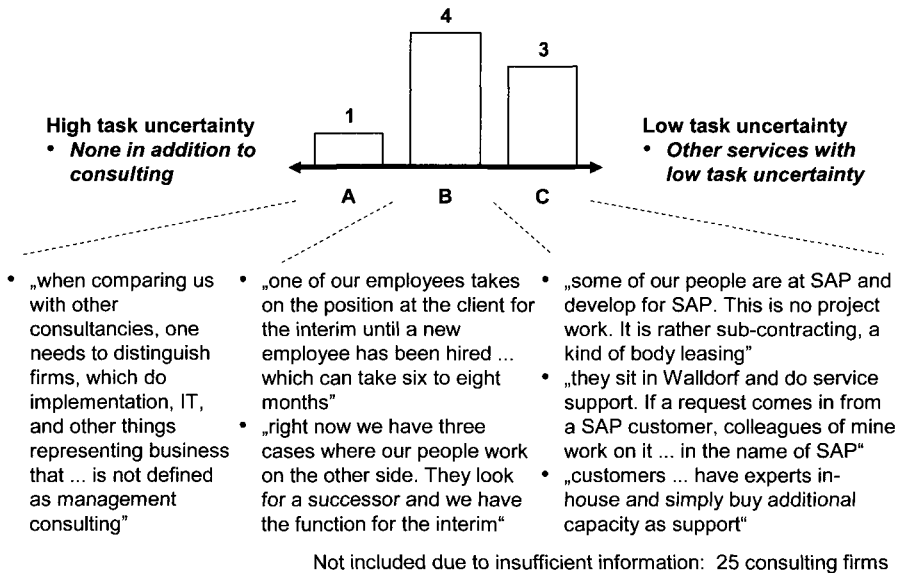


Figure 26: Number of consulting firms by service extensions

4.1.1.14 Productization

A second topic that emerged during interviews and data analysis was ‘productization’. Many interviewees talked about products when they portrayed the consulting services their companies offered. The term ‘productization’ is used to describe the degree to which management consulting firms offered pre-defined services to their customers.

⁷³ Section 5.2 discusses missing data.

Two distinct types of 'productization' could be distinguished. The first type referred to 'consulting products' as generic forms of consulting services that were developed into ready-made solutions. Customers could pick from a selection of solutions or modules when they hired a consultant. The second type described consulting services that were tied to a product, for example, the services rendered during the customization of a particular software program.

In the first case, consulting products are repetitively sold to different customers with little adaptation. They address well-understood problems so that the modules can be specified and the necessary tasks can be planned in advance. In consequence, task uncertainty associated with consulting products is considered to be low. In the second case, the product is the constant element across consulting projects. While the consulting services tied to a product may vary between different projects, they should exhibit some similarities and vary less than if the constant element would be missing. Repetition and predictability for this type of service is lower than for consulting products but higher than for consulting without any relationship to 'productization'. As a result, consulting services tied to a product are associated with moderate task uncertainty.

Interviews and data analysis revealed that one group of consulting firms had developed consulting services into consulting products (C). Part of these consultancies' offering were off-the-shelf solutions, for example training modules or a situational analysis. Other firms provided consulting services that were tied to a product such as computer software SAP (B). Two interviewees explicitly denied having consulting products or services closely tied to a product (A). There was no company identified that offered both consulting products and services tied to a product. As described above for service extensions, no information was volunteered as to whether the majority of consulting firms used 'productization' or not.⁷⁴

⁷⁴ Section 5.2 discusses missing data.

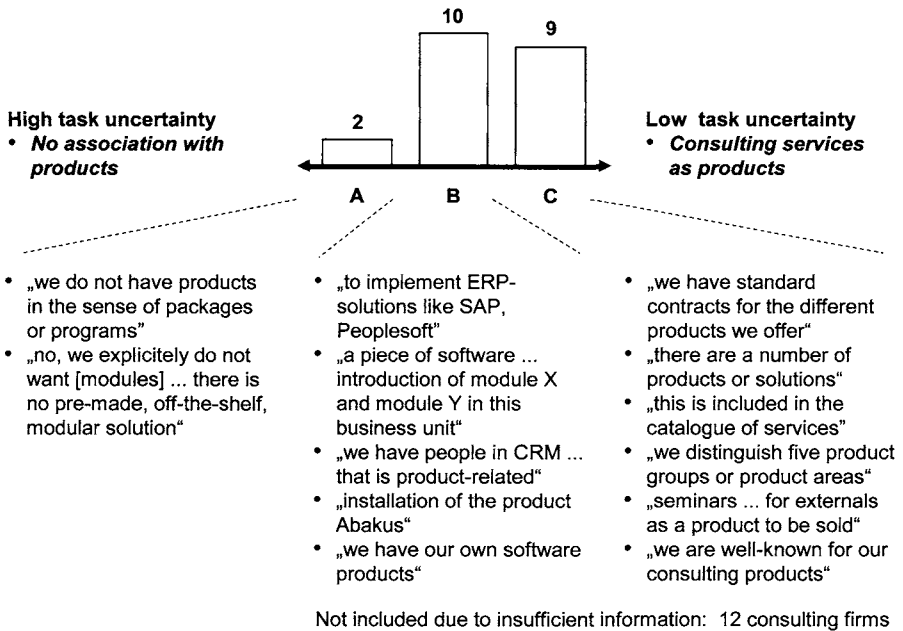


Figure 27: Number of consulting firms by ‘productization’

4.1.2 Task uncertainty values

The previous sections identified nine topics that find variation across the sample of consultancies and are therefore considered measures of task uncertainty. 7 of the measures corresponded with the 11 interview topics derived from the management consulting literature (Table 5). Four topics had to be rejected as measures. Service extensions and ‘productization’ were discovered as additional measures during interviews and data analysis. Each of the measures distinguished between three and five distinct categories of consultancies. While some measures were dominated by one category, other measures such as functional focus were characterized by a relatively even distribution of firms across categories.

The aggregation of the measures at the level of the task uncertainty concept, as outlined in section 3.6, yielded the distribution of structural differentia-

tion values shown in Figure 28. The distribution was close to linear with values ranging from 4.6 to 1.7 and a standard deviation of 0.8. Few firms had identical task uncertainty values. The mean and the median of the distribution were close to each other at 3.1 and 2.9, respectively. Its standard deviation was 0.8. The values for each of the 33 consulting firms included in the research sample are provided in Appendix V.

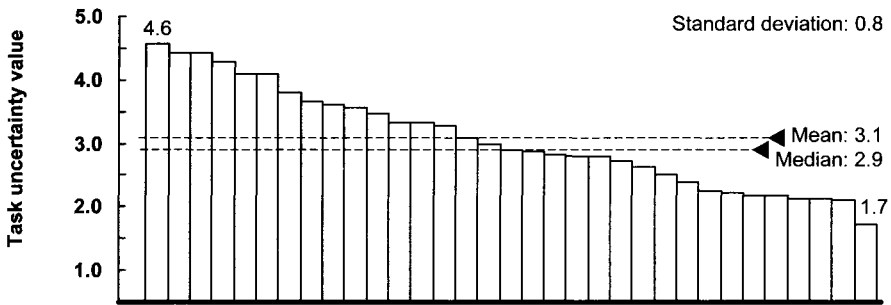


Figure 28: Task uncertainty values of 33 consulting firms

The values are used to test the relationships of task uncertainty with specialization (section 4.3.5), organizational size (section 4.3.6), and formalization (section 4.3.7) as proposed by the hypotheses H4, H5, and H6.

4.1.3 Side note: Reflection of task uncertainty in interviewees' language

Another finding of data analysis appeared to be associated with task uncertainty. It is provided here as an interesting supplement to the task uncertainty concept of contingency theory.

Qualitative data not only captured what was said during interviews but also how it was said (section 3.5.3). Repetitive review of interview contents

during the coding process revealed that interviewees used different expressions to refer to the buyers of their consulting services. The terms 'Klient'⁷⁵, 'Kunde'⁷⁶, and 'Mandant'⁷⁷ were identified and filtered from interviewees' answers. An analysis of sequence showed that the interviewees' choice appeared not to be triggered by the interviewer's questions. Neither their immediate answers nor their overall preference for a particular expression reflected of the use of a specific term by the interviewer.

The analysis indicated that most of the interviewees had a strong preference for the term 'Kunde'. One interviewee employed the expression 'Mandant' almost as often as 'Kunde'. However, three interviewees used the term 'Klient' substantially more often than one of the other two expressions. Of these three people, two worked in the consultancies with the highest task uncertainty values whereas the third interviewee's firm ranked in the upper quartile. Overall, the use of 'Klient' was positively related to task uncertainty values by a considerably high correlation coefficient of $\rho = +0.48$.⁷⁸ Figure 29 visualizes the parallel decrease of task uncertainty values (white columns) and the percentage to which the term 'Klient' was used (black columns). The details about the analysis of language are provided in Appendix VI.

⁷⁵ Interviewees used both the German expression 'Klient' as well as its English translation 'client'.

⁷⁶ Interviewees used both the German expression 'Kunde' as well as its English translation 'customer'.

⁷⁷ The Oxford dictionary translates both 'Mandant' and 'Klient' as 'client'. The term 'Mandant' is often used in a legal context.

⁷⁸ The correlation coefficient as defined in section 3.7 was computed with the task uncertainty values (Appendix V) and the percentages to which the term 'Klient' was used to refer to the buyer of consulting services (Appendix VI).

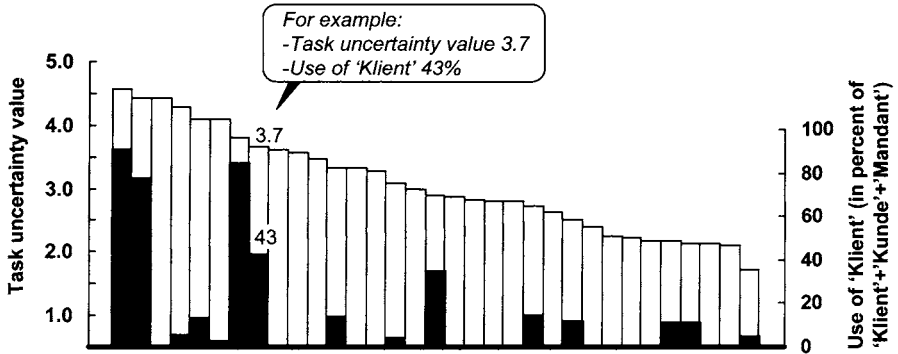


Figure 29: Task uncertainty values of 33 consulting firms and use of 'Klient' as percentage of all denominations of buyers of consulting firms

The bifurcation between 'Klient and 'Kunde' possibly mirrors an underlying assumption about the nature of the relationship between consultants and the buyers of their services. The former might reflect the classical notion of the professional services in the sense of being driven by an intrinsic, professional need to *serve* clients in a close, trust-based relationship. In contrast, the latter might be interpreted as being related to a business that *sells* consulting services to customers in an 'arm's length relationship', for the most part to generate revenues.

4.1.4 Organizational size values

The number of consultants was chosen as the preferable measure of the second contingency factor, organizational size. To ensure confidentiality, the actual figures were normalized (section 3.2.2). The resulting organizational size values are presented in Appendix VII, their distribution is shown in Figure 30. The largest value was 835.0 and the smallest 1.0 whereas the standard deviation was 186.5. The distribution's mean of 99.2 was substantially higher than its median of 25.0. The difference indicated a skewness of the distribution that is

also apparent in Figure 30 (Healey, 1996: 69). The skewness was later alleviated through logarithmic transformation for regression analysis (section 3.7).⁷⁹

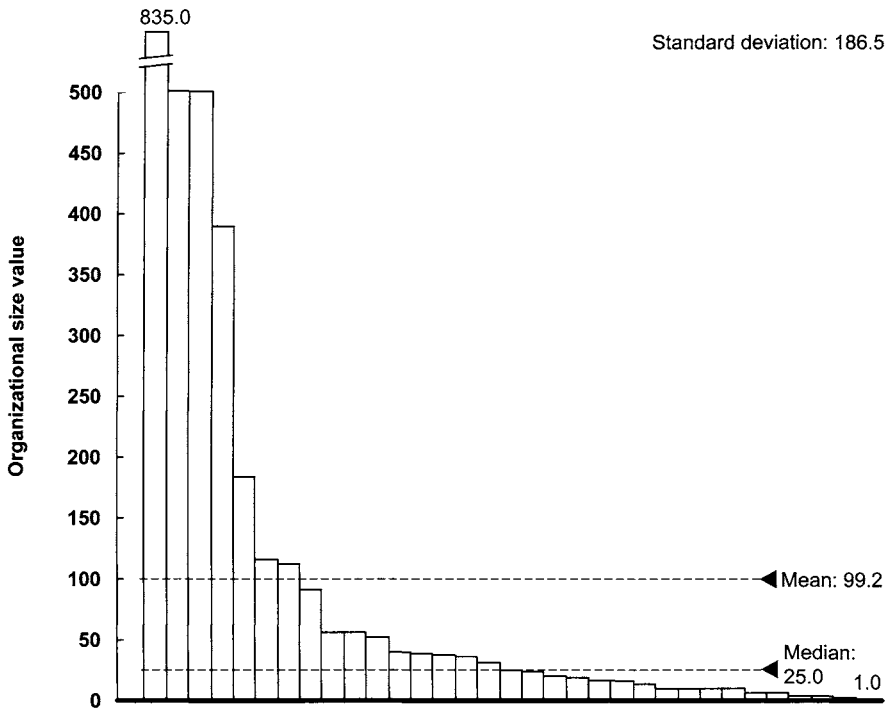


Figure 30: Organizational size values of 33 consulting firms based on the number of consultants

As different measures of organizational size are often not highly correlated and hence cannot be used interchangeably (section 3.2.2), data was also collected for number of employees and annual consulting revenues. The corresponding normalized organizational size values are also listed in Appendix VII. A description of the research sample along the three dimensions is provided in

⁷⁹ The logarithmically transformed organizational size values ranged from 6.7 to 0.0 with a mean of 3.4, a median of 3.2, and a standard deviation of 1.6, respectively.

Figure 31. In terms of annual consulting revenues, the sample included 13 of the 20 largest firms in Germany in 2003 according to the Lünendonk management consulting study (2004b: 15-18) as well as 5 of the top 20 IT consultancies (Lünendonk, 2004a: 28-30).

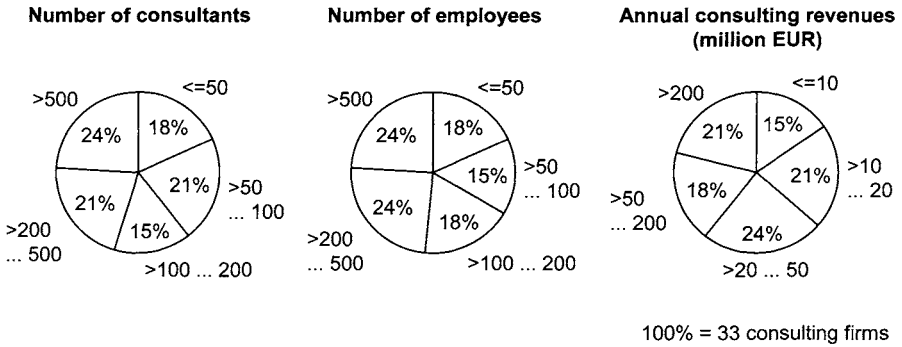


Figure 31: Research sample by different measures of organizational size⁸⁰

The correlation coefficient as defined in section 3.7 between number of consultants and number of employees was $\rho = 0.997$ (Appendix VII). The corresponding figure for number of consultants and annual consulting revenues was $\rho = 0.920$. The two figures were remarkably high and supported the selection of number of consultants as primary measure of organizational size for this research. As a result, the natural logarithm of the organizational size values displayed in Figure 30 can be used in section 4.3 to test hypotheses H1, H2, H3, H5, and H7 as outlined in section 3.7.

⁸⁰ The percentages may not add up to 100 percent due to rounding differences.

4.2 Measures and values of the constructs of organizational structure

4.2.1 Introduction

The measures of the constructs of organizational structure are identified by the same procedure as the measures of task uncertainty (section 4.1.1.1). Sub-trees for each of the structural constructs are created during the coding process. They are shown in Appendix IV-b. If a node finds variations among consulting firms, its topic is considered a measure of a structural construct. Again, ordinal scales are used for the measures to distinguish different categories of firms, all of which are exemplified by numerous interview citations in the sections and figures below.⁸¹

4.2.2 Structural differentiation measures

4.2.2.1 Hierarchical levels among consultants

Interviewees reported differences about the number of hierarchical levels in their firms. The strongest differentiation was found in consultancies with seven or more levels of consultants (A). These included sub-levels for each of junior consultants, managers, and partners as the three major ranks of consultants. In contrast, other consultancies had just one or two levels (C). About one fifth of all firms fell in either of these two categories. The majority of consultancies had between three and six levels (B). As consulting firms could be distinguished based on the number of hierarchical levels in the organization, the topic was used as a measure of structural differentiation in this research.

⁸¹ The citations are translated from the German original and unattributed in the sense that no reference is provided.

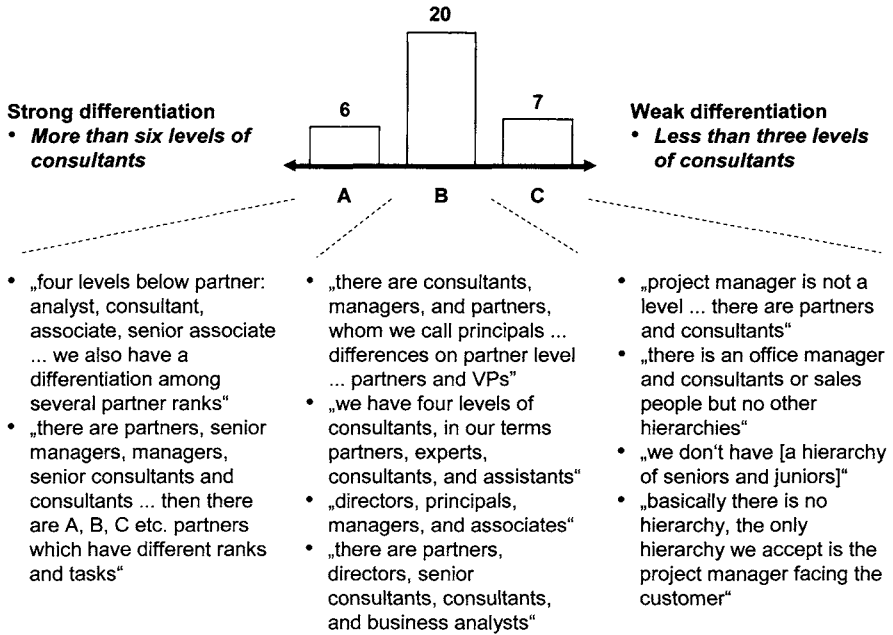


Figure 32: Number of consulting firms by hierarchical levels among consultants

4.2.2.2 Leverage ratios

Consultancies were also found to have different leverage ratios. The organizational structure of one group of firms was a flat pyramid with high leverage (A). Interviewees reported that in their organizations the ratio between partners and managers exceeded one to five and that on average there were 25 or more associates per partner. Equally many consultancies had a column-like organizational structure (C). While some firms in this group had nearly the same number of consultants on all levels, others had slightly more consultants on lower levels. The largest group of consultancies had a leverage ratio of three to five between partners and managers as well as between managers and junior consultants (B).

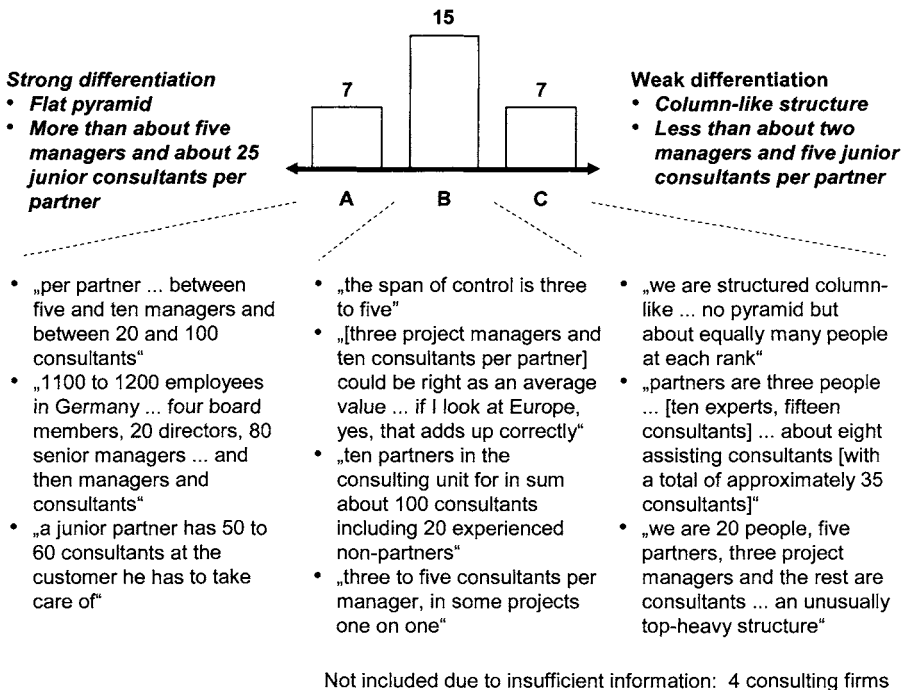


Figure 33: Number of consulting firms by leverage among consultants

4.2.2.3 Support units

The consulting firms varied regarding the existence of support units apart from the pool of consultants. The majority of firms had support units for several functions such as recruitment, graphic design, IT, finance, training, travel management, and research (A). Other firms had support units for some of these functions but not for others (B). The weakest form of structural differentiation was found in consultancies with secretarial support only (C). Typically, the secretarial assistants were responsible for many of the tasks for which firms from group A had a separate support unit. The latter is also the smallest group as it includes only four consulting firms.

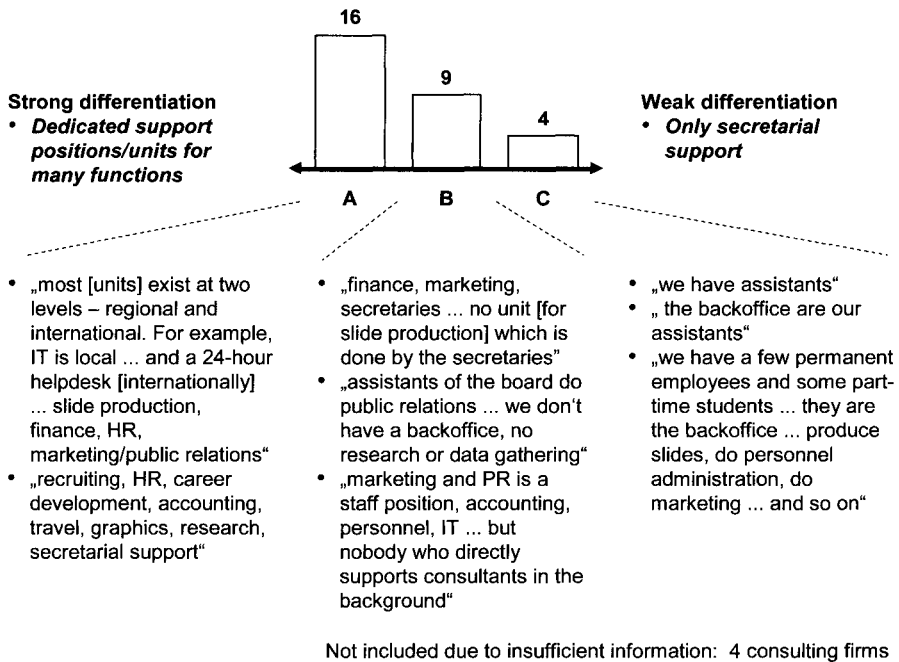


Figure 34: Number of consulting firms by form of support units

4.2.2.4 Industry practices

Consultancies could be distinguished by the degree to which different industry practices existed. The largest group of firms had a number of practices or even subsidiary companies that focused on consulting work in particular industries such as financial institutions, industrial, health care, media, or transportation (A). In contrast, two interviewees reported that they did not have such organizational elements (C). One of these firms had a common pool of consultants for all industries, whereas the other consultancy merely served banks as a single industry. In between were several firms that had some kind of industry practices, however, not as distinct organizational units as in the first group (B). For example, industry practices served as loose pool of experts or existed in one location but not in others.

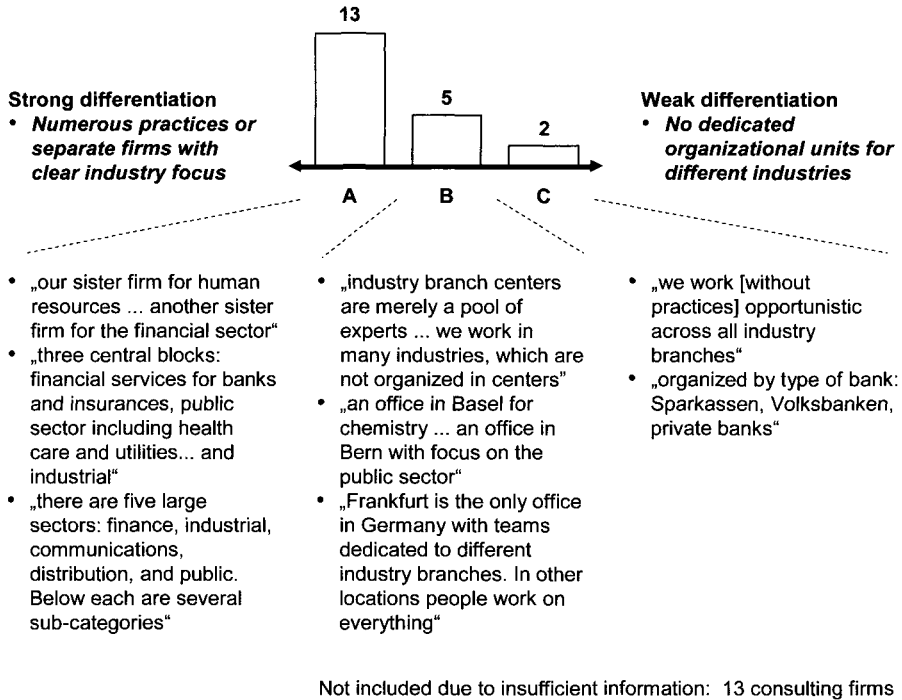


Figure 35: Number of consulting firms by industry practices

4.2.2.5 Functional practices

The results for functional practices were similar to the findings for industry practices described above. Most consultancies had functional practices with a focus on a particular area of consulting work such as strategy, operations management, organization, supply chain management, or marketing (A). One firm worked almost exclusively on corporate finance topics and did not have different functional practices (C). Two firms had functional practices for some areas of their consulting work while other topics, which also accounted for a significant share of their work, were not covered by functional practices (B).

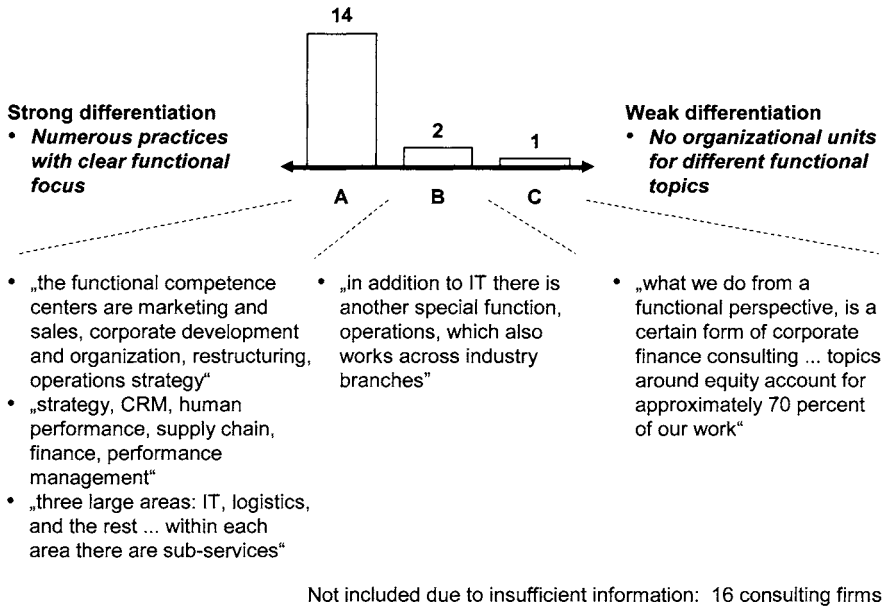


Figure 36: Number of consulting firms by type of functional practices

4.2.2.6 Expert positions

Interviewees reported that three forms of expert positions existed in their firms. The strongest differentiation was found in three consultancies with expert positions outside the ‘normal’ hierarchy of consultants (A). These positions were temporarily or permanently held by consultants with expertise in a certain area of consulting work. Most consultancies had consultants within the ‘normal’ hierarchy who served as experts (B). These experts worked regularly on one or a few consulting projects while they also supported a number of other consulting projects as needed on a short-term basis. A small group of firms did not have expert roles and did not use expertise other than the consulting team working on a project (C).

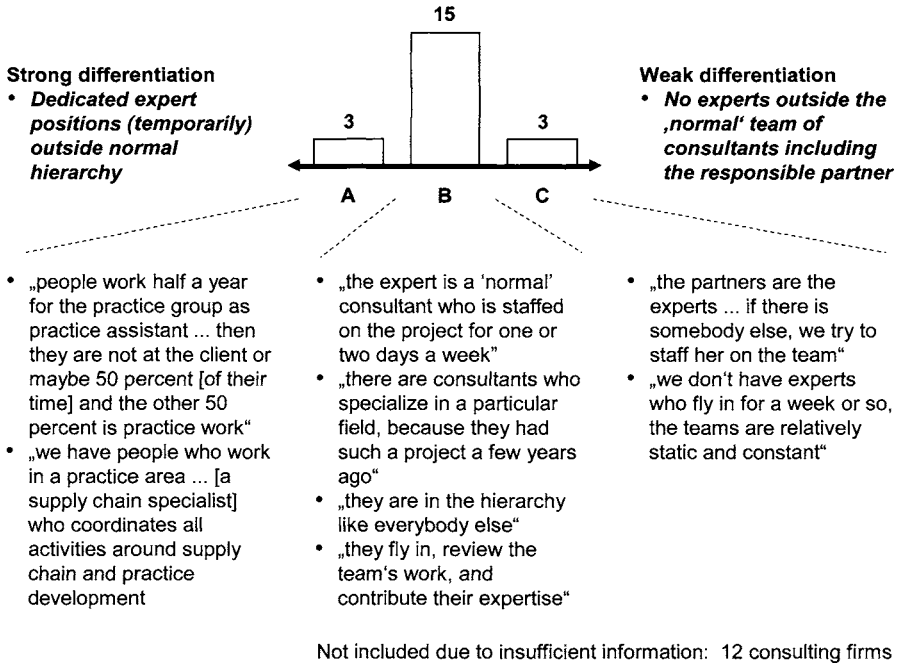


Figure 37: Number of consulting firms by type of expert positions

4.2.2.7 Sales positions

An additional measure of structural differentiation was discovered during interviews and data analysis. Several interviewees reported that sales positions existed in their consultancies. Their organizations had structurally split the selling of consulting services from the delivery of such services. The split increased structural differentiation in these consultancies. Consulting firms were found to have different types of sales positions. The strongest differentiation was found in a group of five firms with sales positions explicitly dedicated to consulting services (A). In a small group of only two consultancies sales positions existed as well. These positions, however, were not for consulting only but for a wider range of products and services such as software licenses (B). As these firms had a universal sales unit at a corporate level, their structural differentiation was considered lower than with a sales unit at each divi-

sion, such as management consulting.⁸² The largest group of consultancies did not have dedicated sales positions (C). The sale and delivery of consulting services was done by the same individuals in these firms. Accordingly, structural differentiation in group C was lower than in the other two categories.

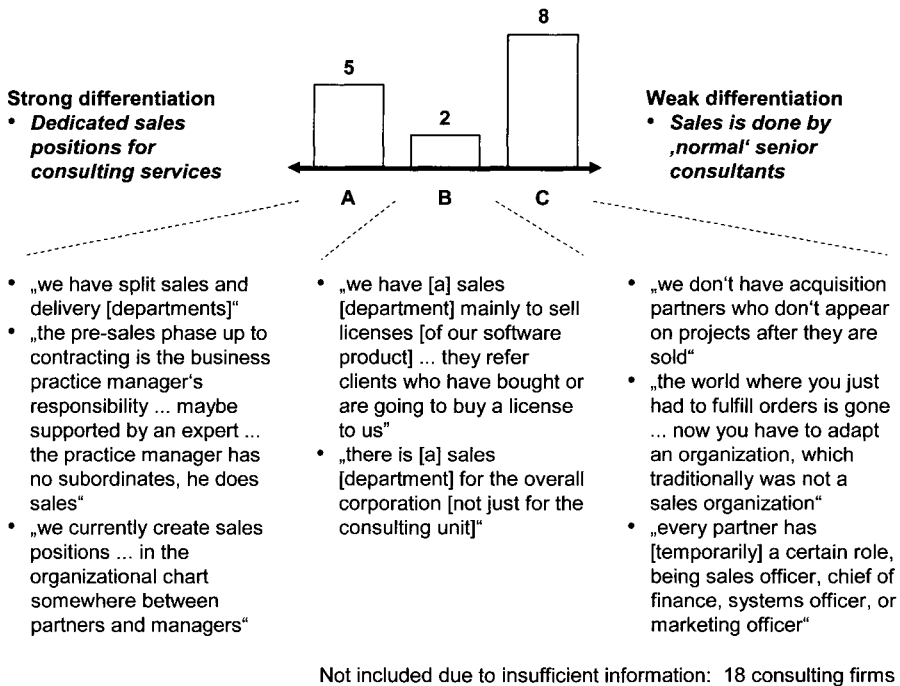


Figure 38: Number of consulting firms by type of sales positions

⁸² Strictly speaking, the sales positions in category B are outside the consulting unit and hence outside the unit of analysis as defined for this thesis (section 1.3.3). However, the selling of consulting services is one of their responsibilities. As they work directly for the consulting unit and perform tasks which would otherwise be carried out within the consulting unit itself, corporate sales positions are included in the results of this research.

4.2.2.8 *Administrative partners*

A second measure of structural differentiation was discovered during the interviews and the analysis of qualitative data. Interviewees reported differences in the degree to which partner status was confined to consultants actively working for clients.

The weakest form of structural differentiation was found in firms in which all individuals with partner status were actively involved in client work (C). Partner status was restricted to experienced, client-serving consultants and the group of individuals with partner status was very homogeneous in this largest category. In contrast, seven consultancies had so-called administrative partners⁸³ who worked exclusively in administrative positions (A). Some of these individuals had achieved partner status through a career in firm administration without ever working directly for clients. As a result, the group of individuals with partner status was heterogeneous. It included consulting partners and administrative partners. A small group of firms had partners who either rarely got involved in client work or had become partners while working as consultants and had later moved into administrative positions (B). Partnership rights were only granted to consultants in these firms, whether or not they continued to work with clients or became administrative partners at some point in time. The latter category is therefore considered to have a medium degree of structural differentiation.

⁸³ The term 'partner' is used to refer to seasoned consultants above project manager level in this thesis (section 3.3.2). Individuals who work in administrative functions but have partnership rights equivalent to those granted to seasoned consultants are therefore referred to as 'administrative partners'.

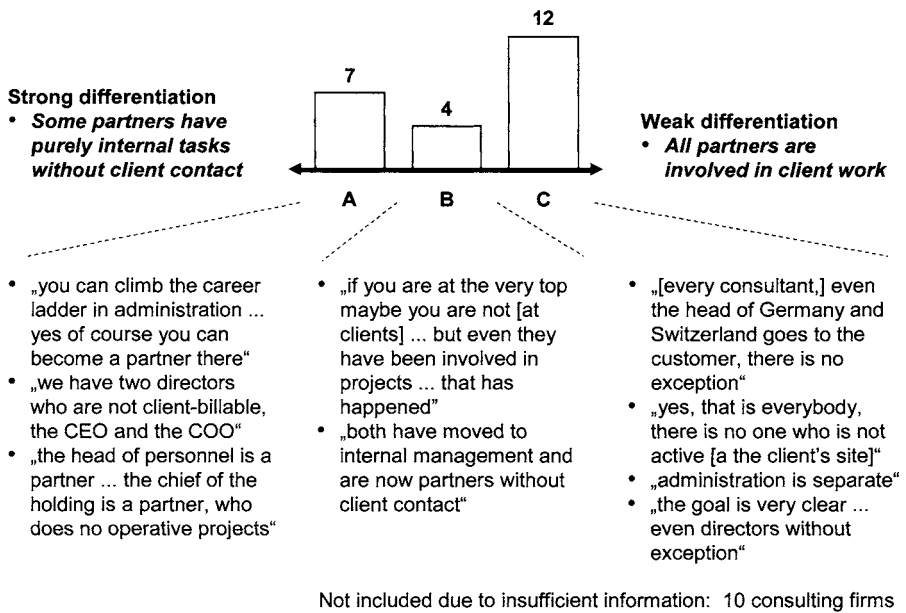


Figure 39: Number of consulting firms by administrative partners

4.2.3 Structural differentiation values

Eight measures were identified which are related to the structural differentiation construct and find variation across the sample of consultancies. Six of the measures corresponded with interview topics drawn from management consulting literature (Table 6). Sales positions and administrative partners were discovered as additional measures during the interviews and data analysis. Each of the measures distinguished three categories, one of which contained considerably more consulting firms than the other two.

The aggregation of the measures at the level of the structural differentiation concept yielded the distribution of structural differentiation values shown in Figure 40. The highest value was 4.7 whereas two firms had the theoretical minimum value of 1.0. The distribution's mean was 3.2, the median 3.5, and the standard deviation 1.0, respectively. Some firms, particularly in the middle of

the distribution, had identical structural differentiation values. All firms' values are provided in Appendix VIII.

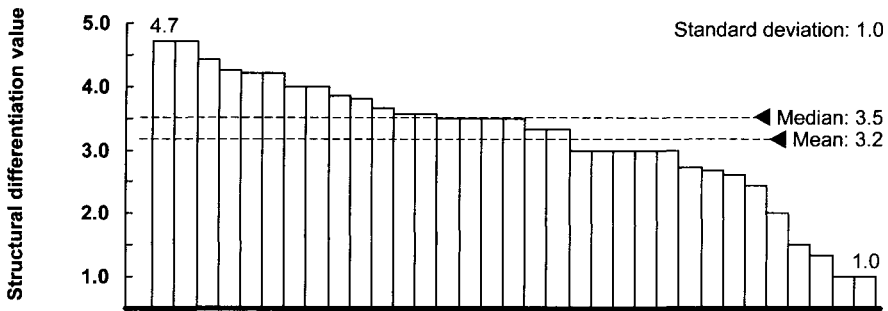


Figure 40: Structural differentiation values of 33 consulting firms⁸⁴

The structural differentiation values are used in section 4.3.2 to test whether or not organizational size and structural differentiation are positively related with each other as proposed by hypothesis H1.

4.2.4 Specialization measures

4.2.4.1 Focusing of consultants

All but one of the interviewees reported that consultants in their firms focused on particular segments of consulting work at some point of their consulting career. Major differences could be distinguished with regard to the timing of focusing. In some consulting firms, consultants needed to choose their area of focusing right at the start of their consulting careers (A). They worked predominantly in the selected field of consulting and were typically

⁸⁴ The theoretical minimum of the structural differentiation values is at 1.0. The scale of the graph starts below this level to make firms visible that have the lowest possible value.

affiliated with a practice group representing their focus. Most of the interviewees described focusing to occur after a few years of employment when consultants had gathered some experience (B). Most of the firms in category B left it up to their consultants when to focus. Some of them recommended young consultants to gather diverse experiences by working in a number of industries and on different functional problems before focusing. A single firm was reported to have generalist consultants without a particular focus (C).

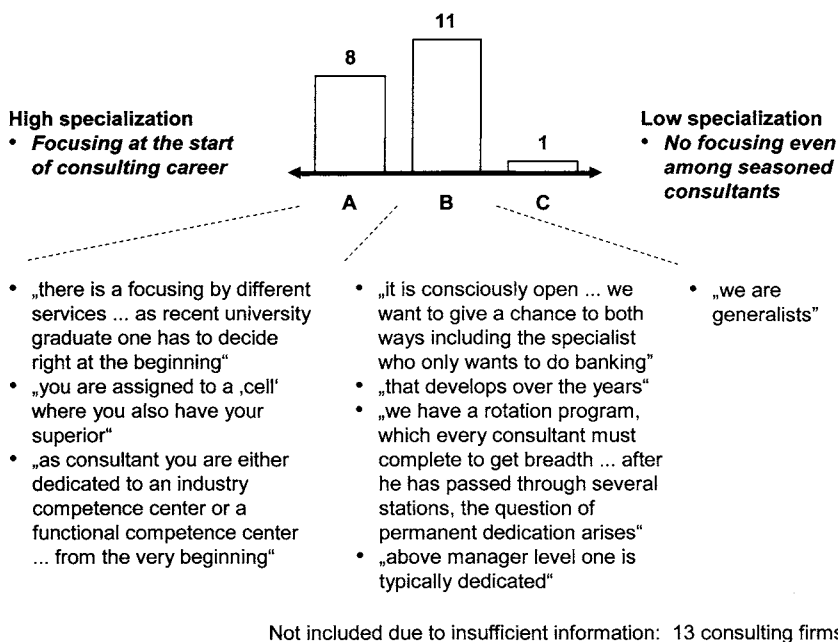


Figure 41: Number of consulting firms by focusing of consultants

4.2.4.2 New hires

Consultancies were found to have preferences regarding the work experience of their new hires. Few firms sought almost only experienced hires who were already focused on a particular industry or a functional area before becoming a consultant (A). In contrast, another small group of consultancies

tended to recruit primarily recent university graduates (C). The majority of firms hired a mixture of both, experienced hires and recent graduates (B).

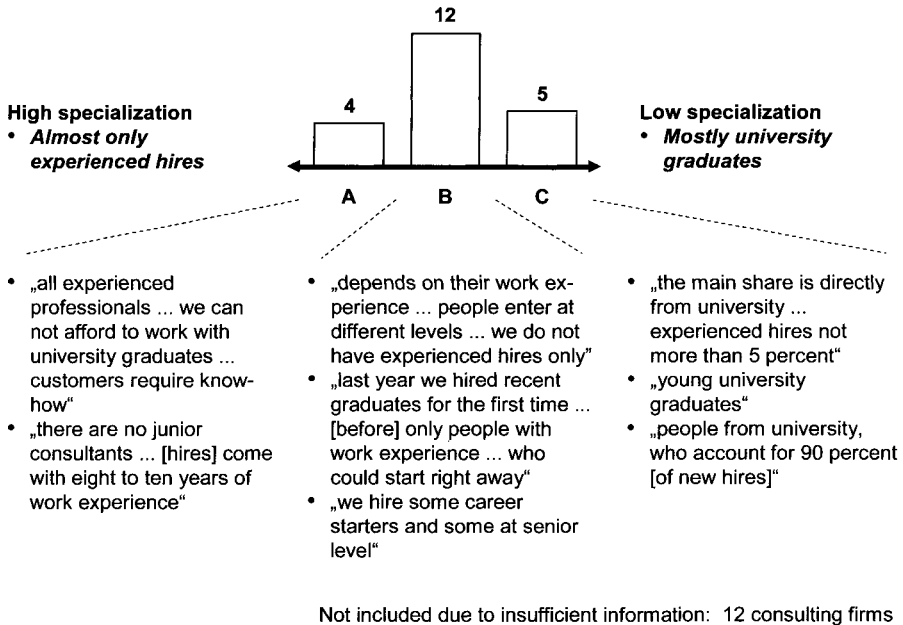


Figure 42: Number of consulting firms by specialization of new hires

4.2.4.3 Simultaneous projects

The number of projects consultants work on simultaneously was described to increase as consultants advanced in the ranks. All interviewees reported this phenomenon. The basis they started from as junior consultants, however, was found to vary. In most of the firms junior consultants typically worked on only one project during the initial years of their consulting careers (C). They rarely split their time between two or more projects. Junior consultants worked on several concurrent projects in three consultancies (A). In between these extreme cases were firms whose consultants worked on very few projects (B). Two simultaneous projects were mentioned as the norm in this group of consultancies with one or three projects being an exception.

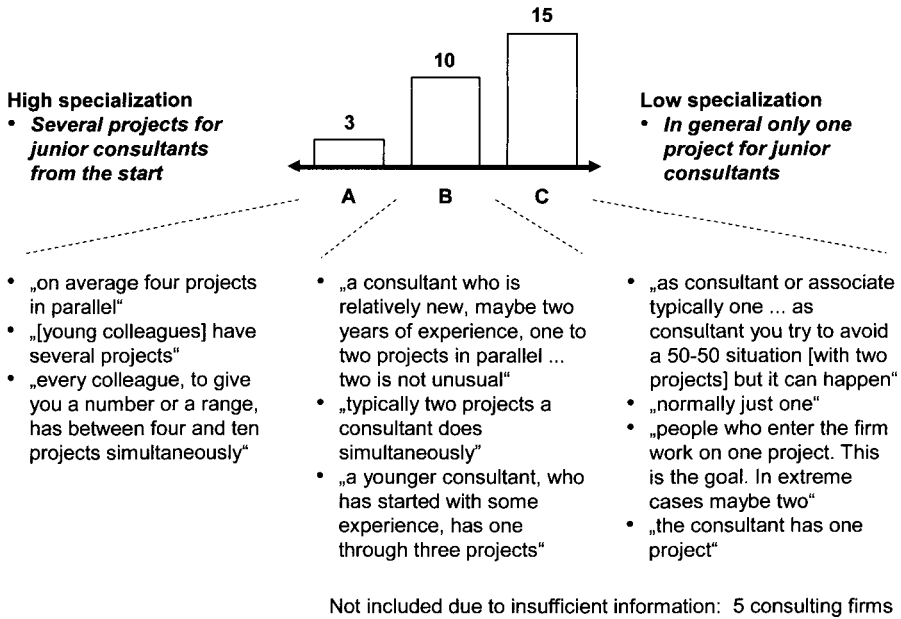


Figure 43: Number of consulting firms by simultaneous projects

4.2.4.4 Exchange of team members

The exchange of consulting team members during ongoing projects was reported to take place only on long-lasting projects in all consultancies. With project lengths of less than or equal to “six to nine months, the team composition usually remains stable” to ensure continuity. The replacement of individual consultants happened mainly upon their own request. Some interviewees mentioned that there was a rule of thumb according to which consultants should be allowed to change projects after 12 months at the latest. If they chose to, consultants could spend up to three years on a single project. Another reason to replace consultants during projects were explicit client requests. No interviewee mentioned an ongoing need for expertise as a barrier to the exchange of consultants.

As the topic appeared to be not related to the specialist-generalist distinction, the exchange of consultants was not considered as a measure of specialization in management consulting.

4.2.4.5 *Firm management*

No differences among consulting firms could be identified with respect to the degree to which firm management was divided between consultants and support staff. All consultancies relied on support staff for tasks such as appointment coordination, graphic design, event management, and the management of office facilities. Consultants were also involved in firm management. While they did not perform the daily work, consultants bore the responsibility for different areas of firm management. They headed the support staff, often in a rotational program among partners. As the topic did not provide variations between consulting firms, the division of firm management between consultants and support staff was not used as a measure of specialization in this research.

4.2.4.6 *Personnel management – off-the-job training*

The division of personnel management between consultants and support staff was found to vary among consultancies with regard to the training of junior consultants and project managers. No differences, however, were detected for other people processes such as recruiting, staffing, or performance evaluation. For example, the scheduling of interviews in the consultant recruitment process was done by support staff in all firms. The interviews were then uniformly conducted by consultants. The variations discovered in personnel management were concerned with two aspects – off-the-job training and on-the-job training of consultants. The first is discussed below while the results for the latter are presented in section 4.2.4.7.

In one group of consultancies, off-the-job training of consultants was conducted by support staff or external training providers (A). Consultants were hardly involved in the training of their colleagues. These firms had the highest specialization as support staff was responsible for people management while consultants served customers. In contrast, most of the consultancies relied on their own consultants for off-the-job training. Trainings were in general conducted by experienced consultants such as project managers in the largest group of firms (B). These consultants trained their peers on top of their project work. In addition to project managers, the partners played an important role in training in three consultancies (C). As a result, the separation of responsibilities and hence specialization was lowest in the last category.

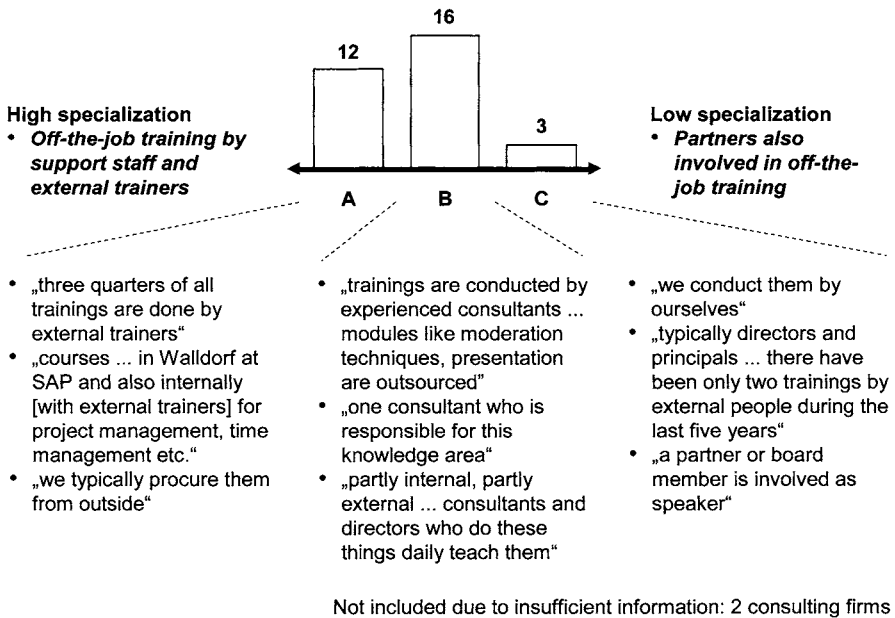


Figure 44: Number of consulting firms by specialization of off-the-job training

4.2.4.7 Personnel management – on-the-job training

On-the-job training of consultants, in contrast to off-the-job training, was always provided by consultants. There were, however, differences in the degree to which partners were involved in the training of their colleagues on projects. In two firms with the lowest specialization partners were essential to on-the-job training (C). These consultants were hardly involved in the other two categories in which on-the-job training was the responsibility of lower-ranked consultants. Some interviewees reported that experienced junior consultants were essential for on-the-job training of their colleagues (A). In the majority of firms, project managers were responsible for on-the-job training supported by experienced junior consultants (B).

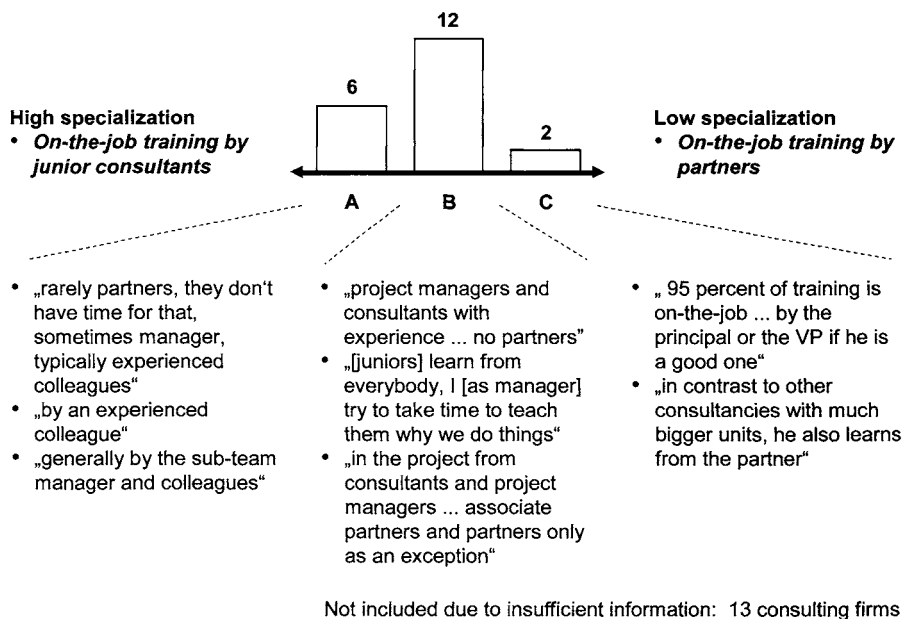


Figure 45: Number of consulting firms by specialization of on-the-job training

4.2.5 Specialization values

The previous sections found five measures of specialization. Two of the topics from Table 7, exchange of consultants and firm management, had to be rejected as measures of the concept. Each of the measures distinguished three categories of consultancies. With the exception of new hires and on-the-job training there were two categories for each measure that contained the majority of firms and were considerably larger than the third category.

The aggregation of the five measures at the level of the specialization construct resulted in the distribution of specialization values shown in Figure 46. The values ranged from the theoretical maximum of 5.0 to 1.5 at the low end. 10 consultancies had an identical specialization value of 3.0. The distribution had a mean of 3.2, a median of 3.0, and a standard deviation of 0.9, respectively. The detail findings for all consulting firms are provided in Appendix IX.

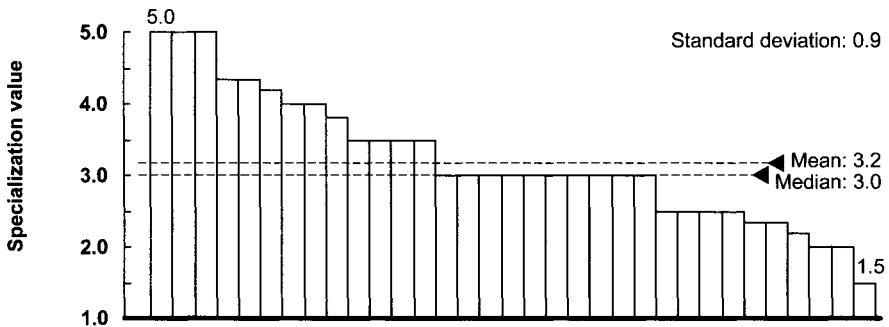


Figure 46: Specialization values of 33 consulting firms

The specialization values are employed to assess the positive relationship between specialization and organizational size claimed by hypothesis H2 (section 4.3.3) and whether or not specialization and task uncertainty are negatively related with each other as proposed by hypothesis H4 (section 4.3.5).

4.2.6 *Centralization measures*

4.2.6.1 *Conclusion of client contracts*

The authority to close client contracts was confined to partner-level consultants in all consulting firms. The negotiation of contracts was the phase of a consulting project in which these seasoned professionals were involved, whether or not they participated in other phases of the consulting project life cycle such as project execution (section 4.1.1.8). Accordingly, contract negotiation and conclusion was one of their main responsibilities. Some interviewees hinted that decision-making power was assigned to certain types of partners more than to others: "... there are differences among partners. Senior partners, who have withdrawn a bit from acquisitions, still promote the client relationship but leave direct selling in many cases to junior partners". Such distinctions, however, were vague and did not allow to categorize consulting firms.

As the authority to close contracts with clients was very similarly concentrated at the top of the hierarchy in all consultancies, the topic was not considered further as a measure of centralization in this research.

4.2.6.2 *Corporate governance*

The findings for decision-making power regarding corporate governance were similar to contract conclusion. The authority to govern the firm was even more centralized as it was always confined to the highest ranks of partners. One interviewee summarized: "... the higher one climbs in the hierarchy of partners, the more ... one is responsible for internal affairs." The most seasoned consultants were also elected into governing bodies of their firms. Depending on the form of legal entity, firms based on share ownership had a board of

directors whereas limited liability companies had an executive management.⁸⁵ Many of these bodies existed mostly to meet national legal requirements and not to truly govern the consultancies. For example, one interviewee revealed: “Yes, in legal terms [we are a German company]. There is an executive manager for Germany, too. But the firm is lead in Europe. Here we merely implement the decisions made at the European level.”

Similar to the conclusion of contracts, corporate governance could not be employed to distinguish consultancies regarding centralization of decision-making. All firms reported that decision-making authority rested with the most senior partners. Firm governance was therefore not a measure of centralization in this research.

4.2.6.3 *Recruitment*

The degree of centralization of recruiting decisions was found to vary between consultancies. Such decisions were almost exclusively made by consultants. In some firms, the highest ranked partners such as board members, executive managers, or founders participated in hiring decisions (A). New consultants could not be hired without the agreement of these people. In the largest group of firms, recruiting decisions were made by partners (B). Some interviewees reported that such decisions were the responsibility of a partner who lead a particular sub-unit such as an industry practice, functional sector, or a country unit. Decision-makers were, however, not the highest ranked consultants in these firms. The least centralized approach was taken by consultancies which delegated recruiting decisions at least partly to project managers and junior consultants (C). This group of firms also represented an exception in the

⁸⁵ The ‘Geschäftsführung’ (executive management) of a German GmbH is one of the mandatory governing bodies to which one or more managers are appointed as executive managers (Thommen & Achleitner, 2003: 69).

sense that some recruiting decisions were not made by consultants but by senior support staff such as an HR director.

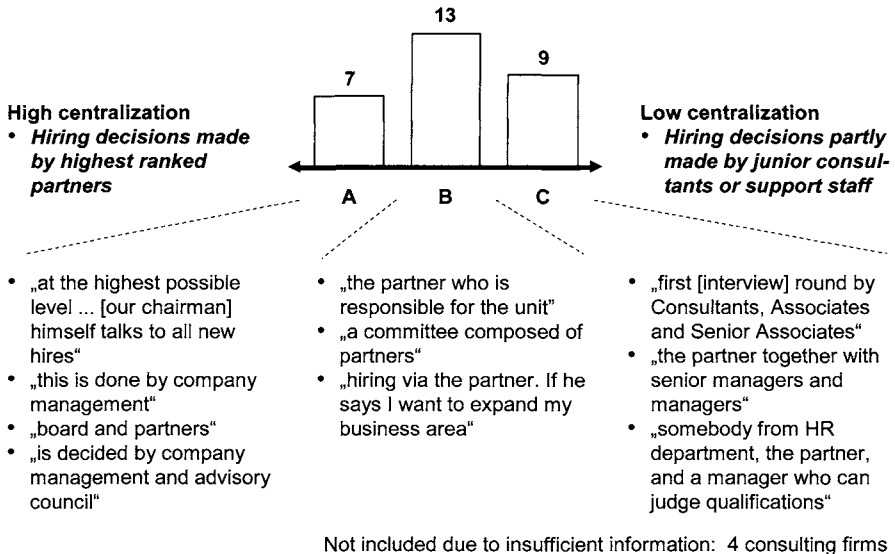


Figure 47: Number of consulting firms by centralization of recruiting decisions

4.2.6.4 Staffing

The authority to make staffing decisions was distributed differently in consultancies. In some firms the junior consultants were assigned to particular projects by partners (A). The decision-makers in this smallest category of firms were identical to those described in section 4.2.6.1 for contract conclusions. In the majority of the firms decision-making authority was partly delegated to project managers (B). As partners shared their responsibility with project managers only, the authority was kept among professionals in these consultancies. Decision-making power was delegated even further down the hierarchy in the last group of firms (C). In the most decentralized approach to staffing decisions, junior consultants were partly assigned to projects by non-consultants such as "resource deployment managers". Some interviewees reported that a

staffing department was responsible. The support staff typically worked in close cooperation with a partner such as a business unit head or a country manager.

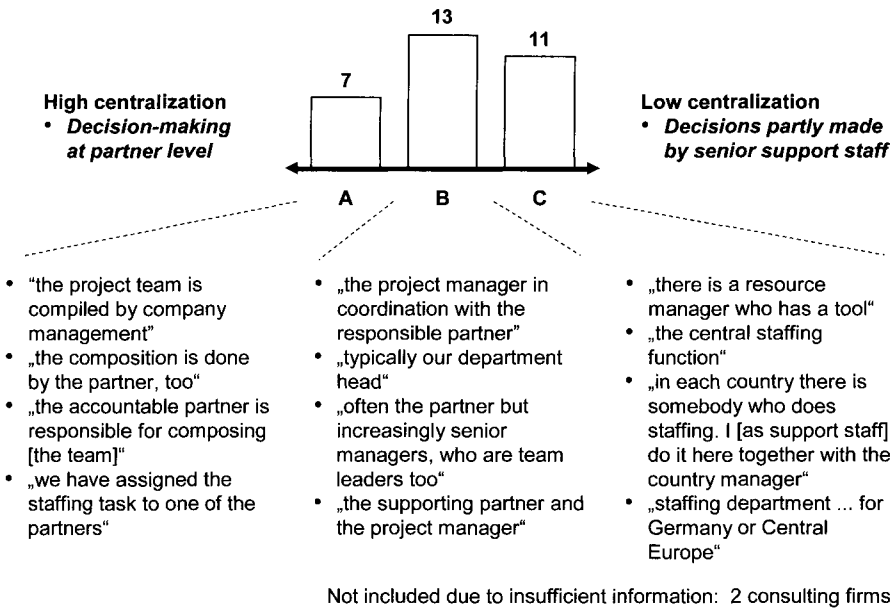


Figure 48: Number of consulting firms by centralization of staffing decisions

4.2.6.5 Performance-related decisions

All of the decisions related to consultants' performance evaluations such as promotion, compensation, and separation decisions were found to be made by the same individuals. As one interviewee described: "... that is discussed and decided in various local committees and can result in anything from promotion to termination. The annual compensation is also decided upon."

In most consultancies the centralization of performance-related decisions was similar to the centralization of recruitment (section 4.2.6.3), although decisions tended to be somewhat less delegated to lower-level consultants and support staff. In the first group of firms such decisions were made by the highest

ranked partners (A). Board members, executive managers, or the entire group of partners decided about promotions, compensations, and separations. In other firms, these decisions were made by a partner or a committee of partners, both of which not necessarily included the highest ranked partners (B). The most decentralized alternative was the partial delegation of decision-making authority down to project managers and senior support staff (C).

All groups contained about equal numbers of consulting firms resulting in a relatively even distribution of firms across categories.

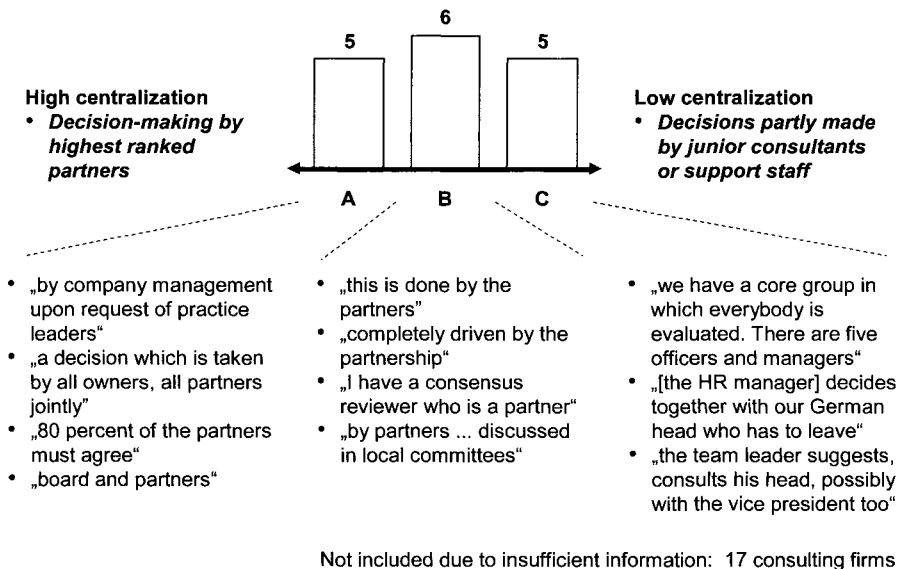


Figure 49: Number of consulting firms by centralization of performance-related decisions

4.2.7 Centralization values

Based on the five topics related to the construct of centralization (Table 8), three measures were identified which had variations among consultancies. Each of the three measures distinguished three different categories of consul-

tancies. The topics of contract closures and corporate governance had to be rejected as measures.

The aggregation of the measures at the level of the centralization concept yielded the distribution of centralization values shown in Figure 50. Both the highest and the lowest value were at the theoretical maximum of 5.0 and minimum of 1.0, respectively. The distribution had a 'staircase shape' with several firms adopting the same centralization value. Its mean was 2.8, the median was 3.0, and the standard deviation 1.4. The centralization values of all consultancies are provided in Appendix X.

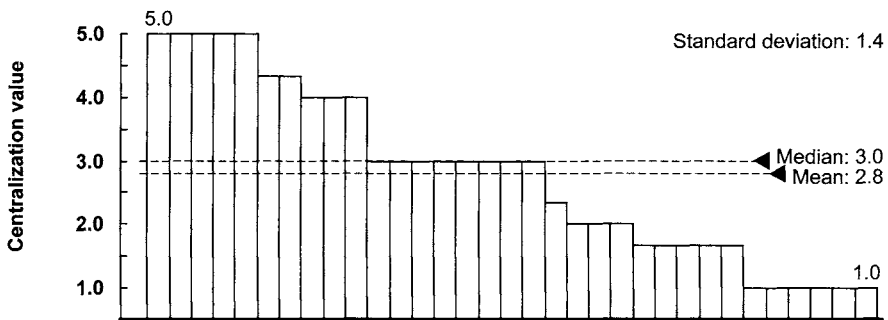


Figure 50: Centralization values of 33 consulting firms⁸⁶

The centralization values are used in section 4.3.4 to test the positive relationship between organizational size and centralization proposed by hypothesis H3.

⁸⁶ The theoretical minimum of the centralization values is at 1.0. The graph's scale starts below this level to make firms visible that have the lowest possible value.

4.2.8 Formalization measures

4.2.8.1 Client contract

All consultancies used some type of written document. They were found to vary regarding the degree of formalization of client contracts. Almost half of the firms used standard contracts, many of which contained standard legal sections (A). This category represented the most formalized approach to client contracts. In contrast, a small group of consultancies drafted custom-tailored project proposals (C). The proposals were – possibly after amendments – accepted by the customer. There was, however, no signing of a document by the client as with contracts in group A. In between these two classes was a third category of firms which used written contracts with both, standardized and highly customized elements. Approximately one third of consultancies fell into this last category with medium formalization of client contracts.

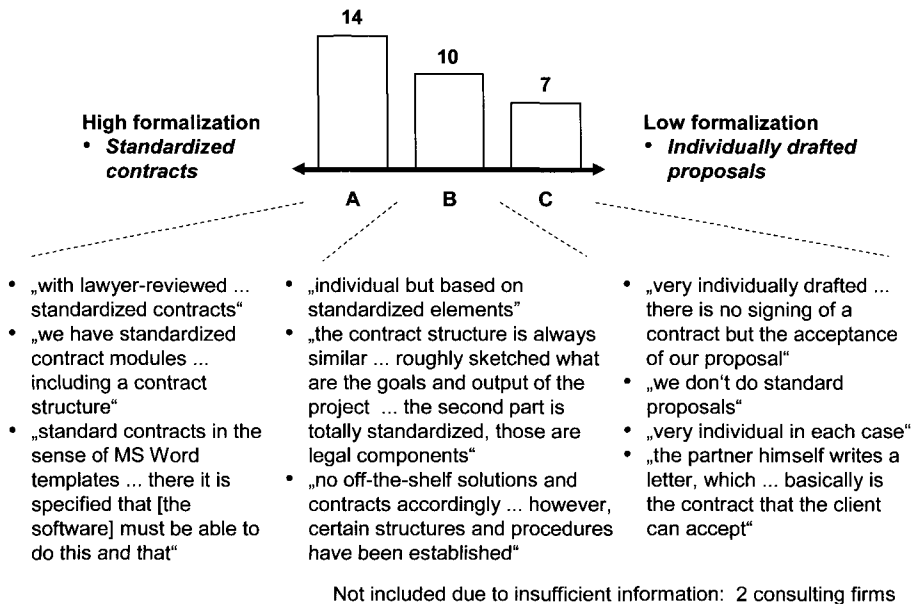


Figure 51: Number of consulting firms by formalization of client contracts

4.2.8.2 *Customer feedback*

The collection of customer feedback was performed inconsistently within most of the consulting firms. Interviewees reported that “it depends very much on the type of project” whether and how feedback was collected. While responsible partners sometimes sent their customers “a questionnaire with the final bill or when the project is finished”, they merely collected oral feedback in other cases. Accordingly, entire consulting firms could not be associated with a particular type of customer feedback. The topic of customer feedback was not considered as a measure of formalization.

4.2.8.3 *Knowledge management*

Interviewees reported differences regarding the way their consultancies managed knowledge. One group of consultancies maintained knowledge databases with very detailed information such as standard project structures and problem solutions (A). These firms had the most formalized approach to knowledge management. Other consultancies had databases containing less detailed information that could be used as a first reference but fell short of a standard procedure to be applied in future projects (B). Almost half of the consultancies included in the sample fell in this category. Very few interviewees reported that their firms did not have knowledge databases (C). Their consultancies relied on tacit knowledge that was typically shared by phone or email among consultants when a specific need arose.

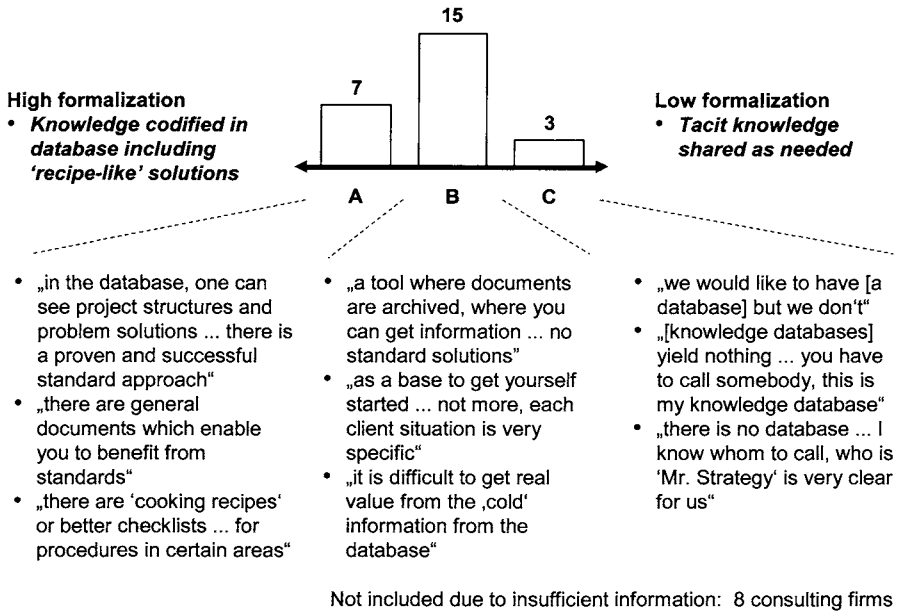


Figure 52: Number of consulting firms by formalization of internal knowledge management

4.2.8.4 Mentorship

The degree of formalization of mentorship programs was found to vary among consultancies. One group of firms had not established a mentorship program for all of their consultants (C). Mentorship was either initiated on a voluntary basis or organized only for certain consultants, for example, those preparing for partnership promotion. An approximately equal number of firms had a temporary mentorship program for all of their consultants (B). Their mentorship programs were designed to ease new consultants' adaptation during the early phase of firm membership. Mentors were typically peers with several months of experience. The relationship between mentor and mentee in general tapered off after a few months. The most formalized approach was taken by firms with long-term mentorship relationships (A). The majority of consultancies fell in this last category. All but the most seasoned consultants

were assigned to a mentor, who often served as their formal superior. Mentors were typically consultants at a higher rank than their mentees.

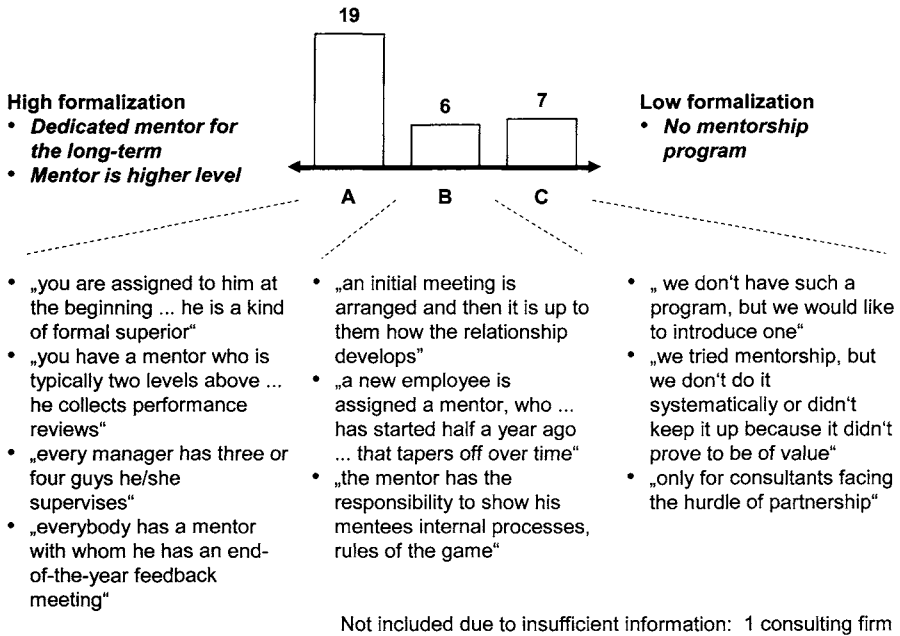


Figure 53: Number of consulting firms by formalization of mentorship

4.2.8.5 Up-or-out – training – performance evaluations – recording of project history

The analysis of the qualitative data revealed that consulting firms also varied with respect to the degree of formalization of a number of other topics. These topics included the degree to which an up-or-out policy was enforced, how junior consultants were trained, and how a consultant's project history was recorded. As for each topic comparable information was available only about

few firms, the topics are discussed together in this section. This approach allows for the inclusion of additional, valuable results of the research.⁸⁷

A small number of firms was found to be high in formalization relative to their peers (A). They strictly enforced an up-or-out principle, according to which consultants, who were not promoted within a certain time frame, had to leave the consultancy. The firms used standard modules to train their consultants. They also had clearly specified processes to evaluate consultants' performance. The consultants' project history was systematically recorded in these firms, for example, to find consultants who had served a particular client some years ago. In contrast, other consultancies did neither have an up-or-out principle nor a specified performance evaluation process (C). The training experiences of their consultants varied widely. Project experiences of consultants were not systematically tracked. The majority of firms employed a mixture of both formal and informal processes (B). Many of these consultancies had some type of up-or-out policy. However, it was not systematically enforced. They also recorded their consultant's project history in a database, the importance of which was subordinate to information exchange in informal networks. Group B contained more than half of all consulting firms from the sample.

⁸⁷ Section 5.2 discusses missing data.

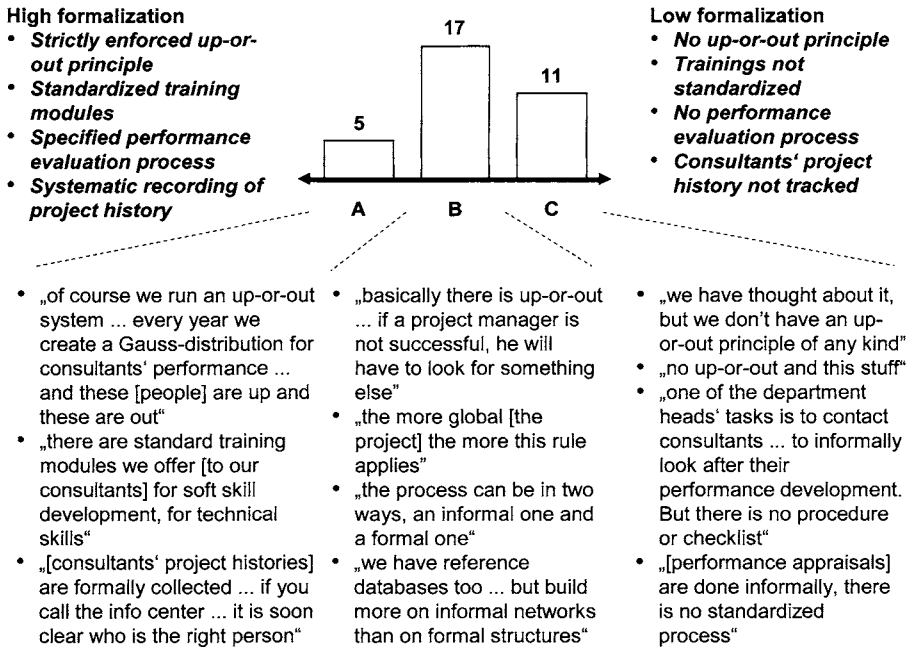


Figure 54: Number of consulting firms by formalization of other processes

4.2.9 Formalization values

The previous sections identified four measures related to the construct of formalization. Three of the measures corresponded with interview topics derived from management consulting literature (Table 9), whereas one additional measure emerged during data analysis. The topic of customer feedback had to be rejected as a measure of formalization. Each of the measures distinguished three categories of consultancies, one of which contained considerably more firms than the two others in each case.

The aggregation of the measures at the level of the formalization concept as outlined in section 3.6 yielded the distribution of structural differentiation values shown in Figure 55. The formalization values ranged from the theoretical maximum of 5.0 to the theoretical minimum of 1.0. Their mean was 3.2,

median 3.5, and standard deviation 1.0, respectively. The values for each of the 33 consulting firms included in the sample are provided in Appendix XI.

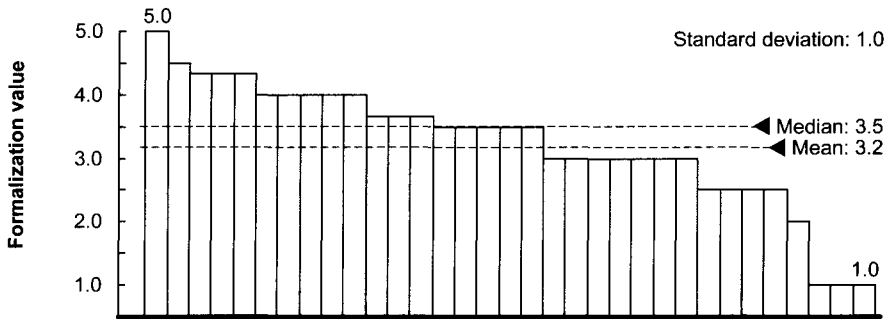


Figure 55: Formalization values of 33 consulting firms⁸⁸

The formalization values are employed to test the construct's negative associations with the contingencies of task uncertainty (section 4.3.7) and organizational size (section 4.3.8) as proposed by the hypotheses H6 and H7.

4.2.10 Summary

For each of the four structural constructs, values were identified that spanned a wide range between the scales' end points at 5.0 and 1.0. This implies that the measures of the constructs widely supplemented each other and did not level out when they were aggregated. The values' means ranged from 2.8 to 3.2, the medians from 3.0 to 3.5. The greatest distance between the two figures was 0.3. As for task uncertainty, the four distributions displayed little skewness.

⁸⁸ The theoretical minimum of the formalization values is at 1.0. The scale of the graph starts below this level to make firms visible that have the lowest possible value.

4.3 Relationships between the contingency factors and the constructs of organizational structure

4.3.1 Introduction

The following sections test the seven hypotheses developed in section 2.7. They use the consultancies' values of the contingency factors task uncertainty and organizational size as well as the values of the structural constructs of structural differentiation, specialization, centralization, and formalization. As described in section 3.7, the regressions are computed with the natural logarithm of the organizational size values. The axes of the scattergrams, however, display the non-transformed organizational size values. This procedure makes relationships easier to comprehend and is widely used in organization theory research (e.g., Blau, 1970: 205-211; Blau & Schoenherr, 1971: 64-72; Child, 1973b: 172-173; Kieser & Kubicek, 1992: 302-303; Mardsen et al., 1994: 916). As a result, the regression lines have a curvilinear shape when the size contingency is the independent variable.

4.3.2 Organizational size and structural differentiation (H1)

The first hypothesis proposes that, based on structural contingency theory, organizational size is a determinant of structural differentiation. Large firms are expected to show stronger structural differentiation than small companies. The empirical results for this relationship are presented in Figure 56. For clarity, the scattergram is split into two sections with different scales for organizational size values. The left section displays structural differentiation values of small consultancies with size values of less than 12, while the right section shows firms with size values from 12 to 835.

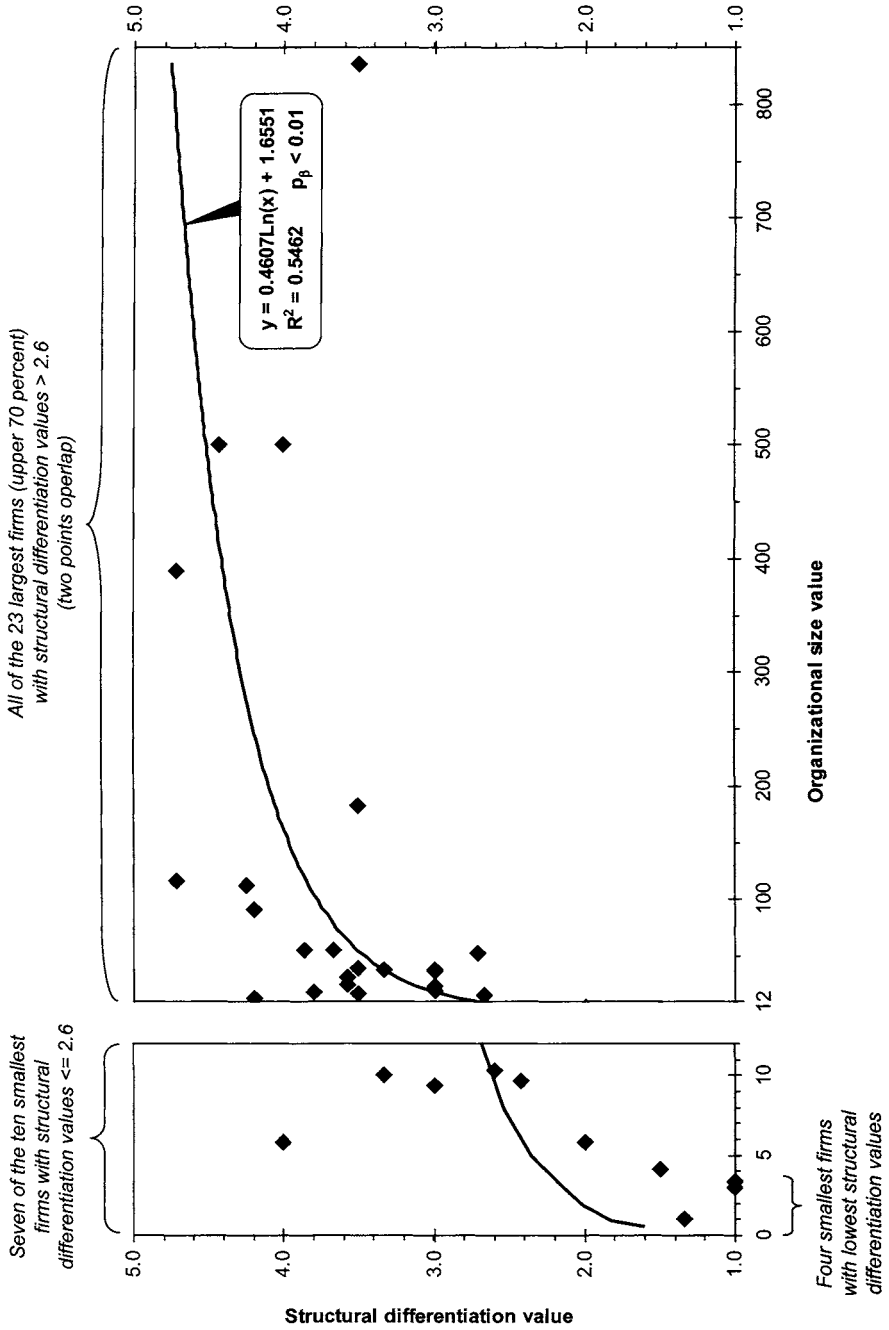


Figure 56: Distribution of firms by size and structural differentiation

Organizational size and structural differentiation were found to be positively related to each other. The high correlation coefficient of $\rho_{33} = +0.74$ indicated a strong positive relationship between the logarithmically transformed organizational size values and the structural differentiation values. Excluding the largest consultancy, the coefficient for 32 data points was found to be even higher at $\rho_{32} = +0.78$. The regression line had a positive slope with a regression coefficient of $\beta = +0.46$ which was significant at the 1 percent level ($p_{\beta} < 0.01$). The coefficient of determination was high at $R^2 = 0.55$. Without logarithmic transformation of organizational size values, the coefficient was substantially lower at $R^2_{\text{non-log}} = 0.15$. The higher value of the former suggested that the relationship between size and structural differentiation was curvilinear and could be better approximated by regression employing logarithmic transformation. The findings supported the arguments for logarithmic transformation of organizational size values provided in section 3.7

Small firms tended to be less structurally differentiated than large firms. The four smallest firms had the lowest differentiation values of the total sample. 7 of the 10 smallest firms scored low on structural differentiation with values of 2.6 or lower. In contrast, none of the other 23 consultancies representing the upper 70 percent of firms in terms of organizational size had such a low structural differentiation value.

In conclusion, the findings strongly supported the positive association between size and structural differentiation proposed by hypothesis H1.

4.3.3 Organizational size and specialization (H2)

The second hypothesis describes the relationship between organizational size and specialization. Similar to H1, the hypothesis argues for a positive relationship between the two concepts with size being a driver of specialization. Large firms are therefore expected to score higher in specialization than smaller firms. Figure 57 displays the distribution of firms by size and specialization.

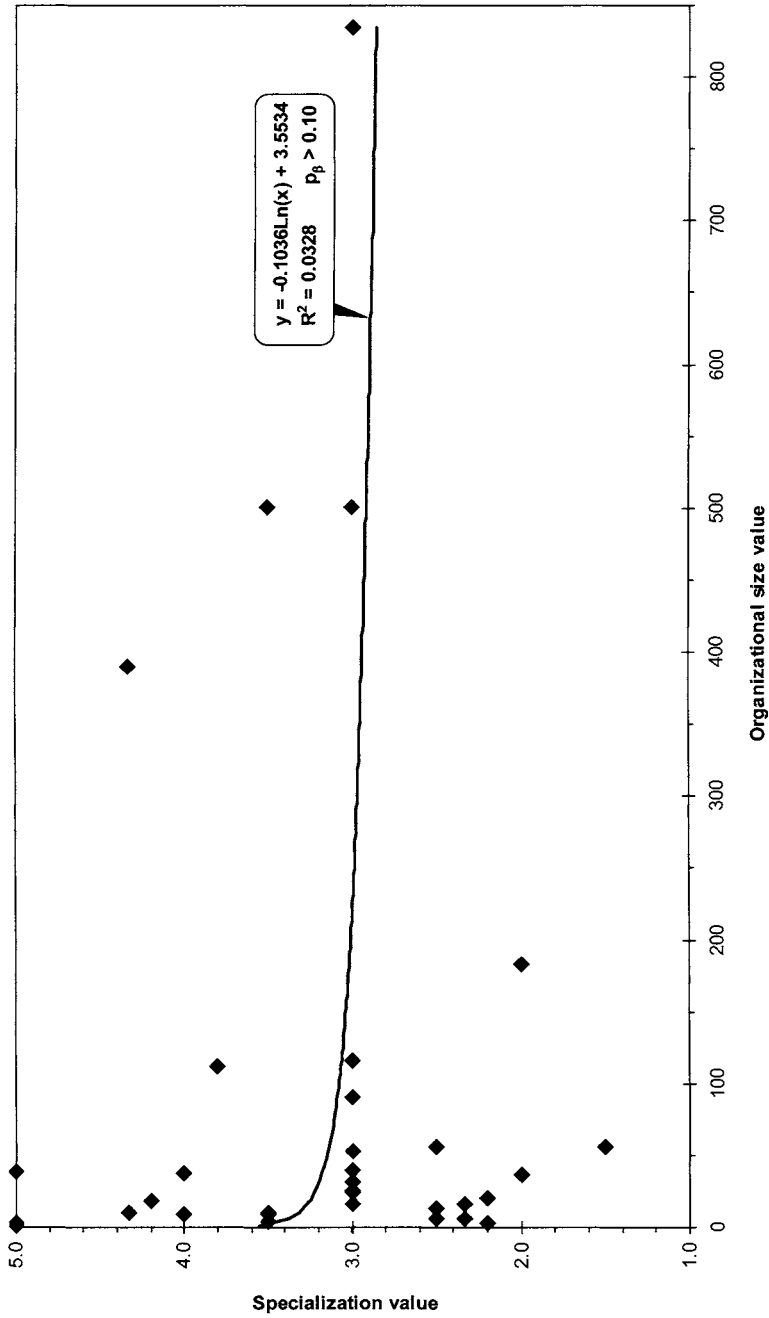


Figure 57: Distribution of firms by size and specialization

Size and specialization were found to have a weak, negative relationship with a correlation coefficient of $\rho_{33} = -0.18$ ($\rho_{32} = -0.18$) between the logarithmic transformation of organizational size values and the specialization values. The downward sloping regression line had a non-significant ($p_\beta > 0.10$) regression coefficient of $\beta = -0.10$. The fit of the regression line to the data points was low with a coefficient of determination of $R^2 = 0.03$. It was even lower without logarithmic transformation at $R^2_{\text{non-log}} = 0.00$.

The weak, negative overall relationship of the two concepts might be driven by the dispersion of size values with few large and many small firms as shown in Figure 57. However, a closer analysis of sub-samples of small firms found similar weak, negative relationships between size and specialization. For example, the correlation coefficient for the 10 smallest firms was $\rho_{10} = -0.31$ and $\rho_{28} = -0.29$ for the sample excluding the 5 consultancies that were substantially larger than the others. The according regression coefficients were $\beta_{10} = -0.42$ and $\beta_{28} = -0.23$, both of which were significant at the 10 percent level ($p_\beta < 0.10$), and the coefficients of determination were $R^2_{10} = 0.09$ and $R^2_{28} = 0.08$, respectively. The findings were consistent with the fact that small consultancies of similar size had either low, medium, or high specialization values as can be seen in the left part of the scattergram.

Hypothesis H2, which argued for a positive relationship between size and specialization, was not supported by the data.

4.3.4 *Organizational size and centralization (H3)*

According to the third hypothesis, organizational size is a determinant of centralization with the size contingency being negatively related to the centralization. Therefore, large firms are expected to be less centralized than their smaller peers. The results for the empirical investigation are presented in Figure 58. Again, the horizontal axis is split into segments with different scales.

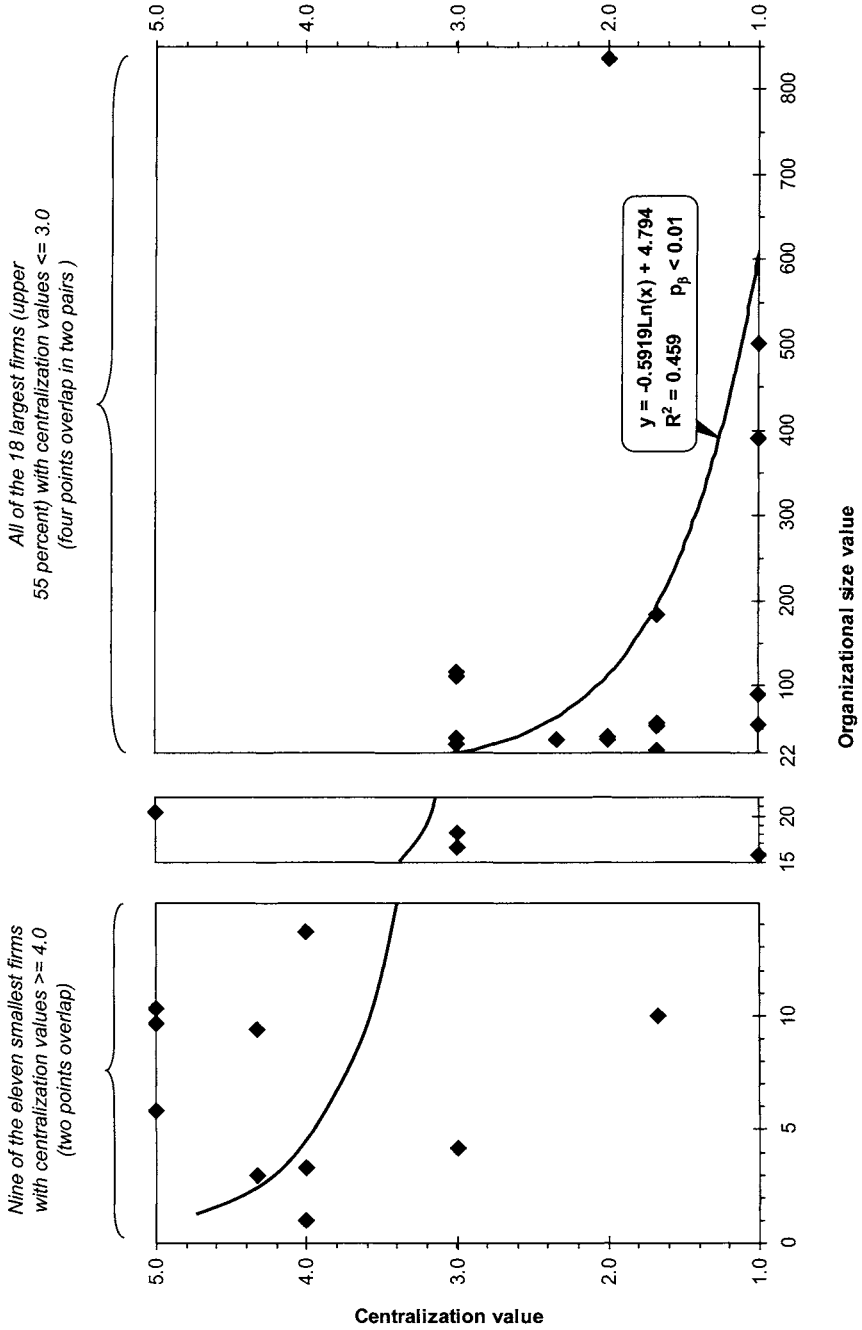


Figure 58: Distribution of firms by size and centralization

Organizational size and centralization were found to have a negative association with each other. The correlation coefficient between the logarithmically transformed organizational size values and the centralization values was $\rho_{33} = -0.68$. Without the extreme value of the largest firm, the correlation coefficient was even stronger at $\rho_{32} = -0.69$. The negative association was also indicated by the negative slope of the regression line. The regression function had a coefficient of $\beta = -0.59$ that was significant at the 1 percent threshold ($p_{\beta} < 0.01$). Its coefficient of determination was high at $R^2 = 0.46$ and substantially higher than the corresponding coefficient without logarithmic transformation at $R^2_{\text{non-log}} = 0.20$. In parallel to hypothesis H1, the lower value of the latter suggested a curvilinear relationship between size and centralization and supported the use of logarithmic transformation.

The right-hand graphic shows that there were no large firms with high centralization. In fact, all of the 18 largest firms representing the upper 55 percent of the total sample, had a centralization value of 3.0 or lower. In contrast, small firms tended to be more centralized. 9 of the 11 smallest consultancies had centralization values of 4.0 or higher. They are presented in the left-hand graphic.

In summary, hypothesis H3 suggesting a negative relationship between size and centralization was broadly supported by these results.

4.3.5 *Specialization and task uncertainty (H4)*

The fourth hypothesis claims a negative relationship between specialization and task uncertainty in the sense that specialization reduces task uncertainty. Accordingly, firms with low specialization are expected to score high task uncertainty, whereas firms with high specialization are expected to have low task uncertainty. The empirical findings of this analysis are shown in Figure 59.

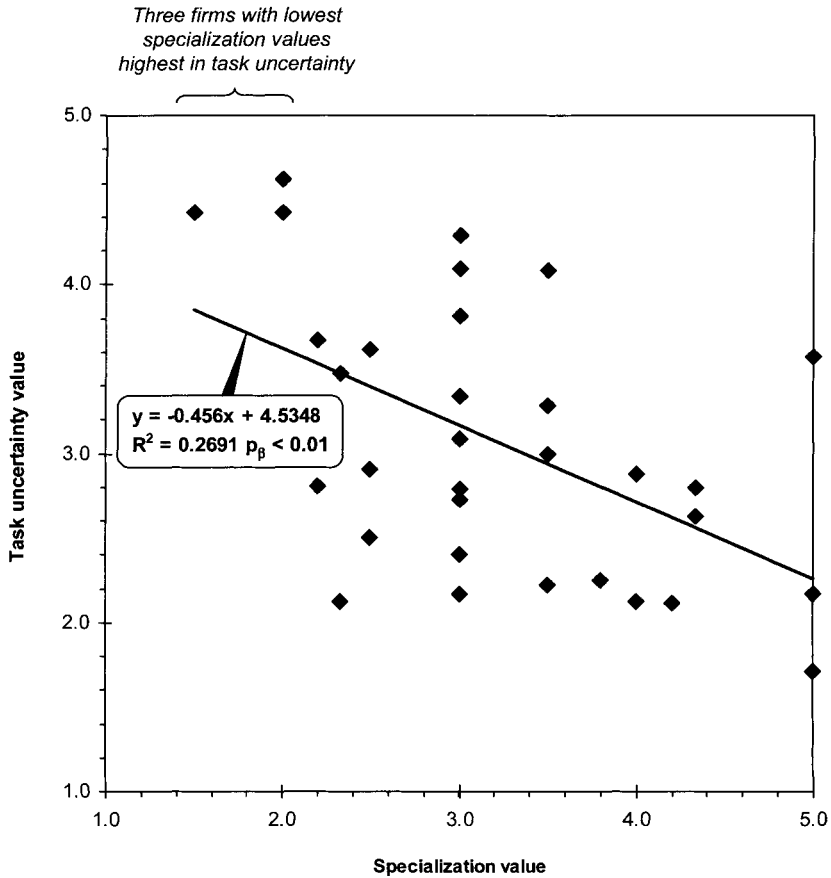


Figure 59: Distribution of firms by specialization and task uncertainty

Task uncertainty and specialization were found to have a negative association and a correlation coefficient of $\rho = -0.52$. The regression line had a negative slope with $\beta = -0.46$ and a coefficient of determination of $R^2 = 0.27$. The regression coefficient β was significant at the 1 percent level ($p_{\beta} < 0.01$).

The three firms with the lowest specialization values scored highest in task uncertainty. In contrast, two of the firms with the maximum specialization value of 5.0 were among the lowest in task uncertainty. There were no consultancies with low specialization values and low task uncertainty values in the

bottom left corner of the scattergram, and, apart from one exception, no firms with high specialization values and high task uncertainty values located the upper right.

The results lent support to a negative association between specialization and task uncertainty proposed by hypothesis H4.

4.3.6 *Organizational size and task uncertainty (H5)*

The fifth hypothesis proposes that organizational size is a determinant of task uncertainty. The two contingency factors are assumed to be negatively related with each other. Accordingly, small firms are expected to have high task uncertainty whereas large firms should have low task uncertainty. Figure 60 portrays the results of this analysis.

Organizational size and task uncertainty had a weak, positive correlation with a correlation coefficient of $\rho_{33} = +0.21$ ($\rho_{32} = +0.17$) between the logarithmically transformed organizational size values and task uncertainty values. The regression line had a regression coefficient of $\beta = +0.11$ that was not significant ($p_{\beta} > 0.10$). Its coefficient of determination was low at $R^2 = 0.05$ but higher than the figure without logarithmic transformation at $R^2_{\text{non-log}} = 0.01$.

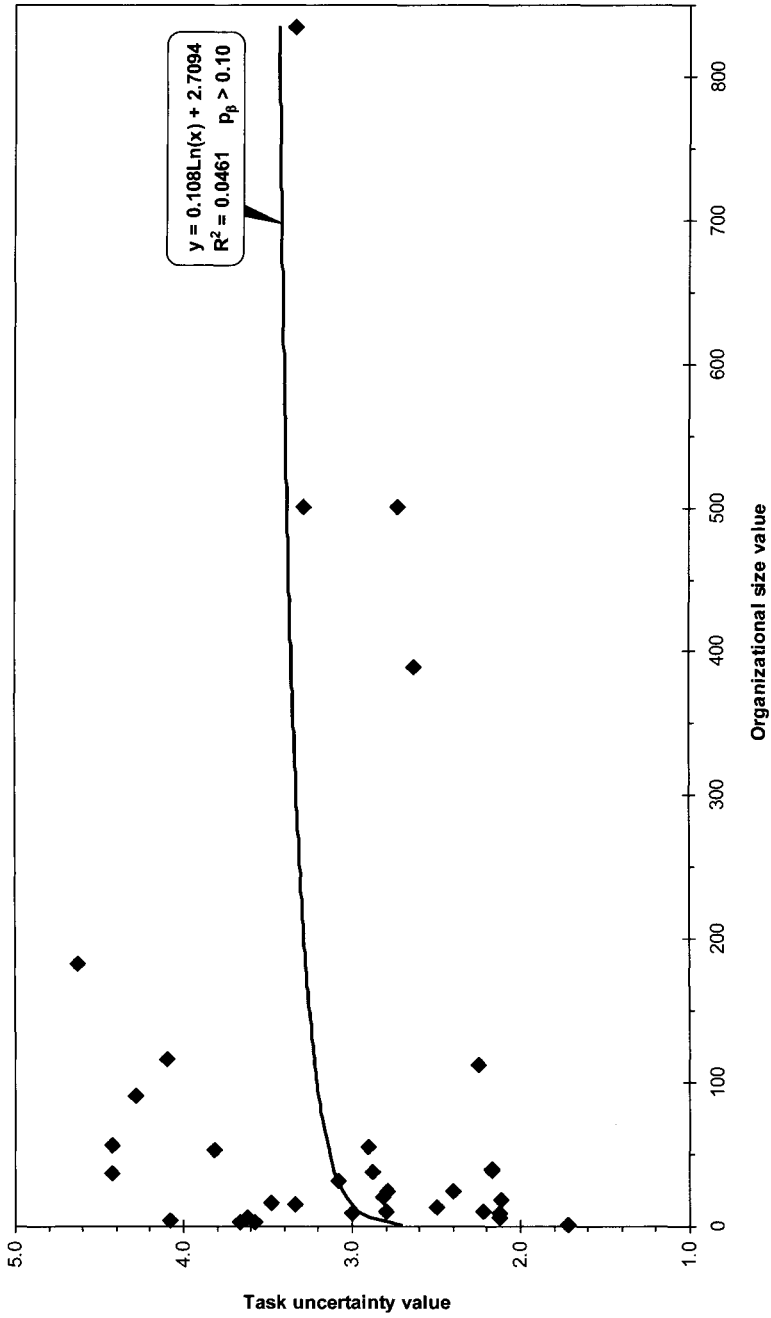


Figure 60: Distribution of firms by size and task uncertainty

Similar to the hypothesis H2, the weak, positive overall relationship of the two concepts might be driven by the influence of the few consulting firms with large size values. Therefore, correlation coefficients, regression coefficients, and coefficients of determination for sub-samples of small firms were determined. For example, the correlation coefficient for the 10 smallest firms was $\rho_{10} = -0.01$ and $\rho_{28} = +0.24$ for the sample excluding the five firms that were substantially larger than the others. The according sub-sample regression coefficients and coefficients of determination, too, supported the overall picture. They were $\beta_{10} = +0.01$ and $\beta_{28} = +0.16$, both of which were not significant at the 10 percent level ($p_{\beta} > 0.10$), $R^2_{10} = 0.00$ and $R^2_{28} = 0.06$, respectively.

As a result, Hypothesis H5 arguing for a negative relationship between size and task uncertainty, was not supported by the data.

4.3.7 Task uncertainty and formalization (H6)

According to hypothesis H6, task uncertainty contingency is a determinant of formalization in the sense that the two concepts are negatively related with each other. Firms with low task uncertainty are expected to score high in formalization. High task uncertainty is supposed to be associated with low formalization. Figure 61 displays the results from empirical analysis of the sample of consulting firms.

Task uncertainty and formalization were found to have a weak, negative association. Their correlation coefficient between task uncertainty values and formalization values was low at $\rho = -0.13$. The regression line had a negative slope and a non-significant ($p_{\beta} > 0.10$) regression coefficient of $\beta = -0.16$. Its coefficient of determination was low as well at $R^2 = 0.02$.

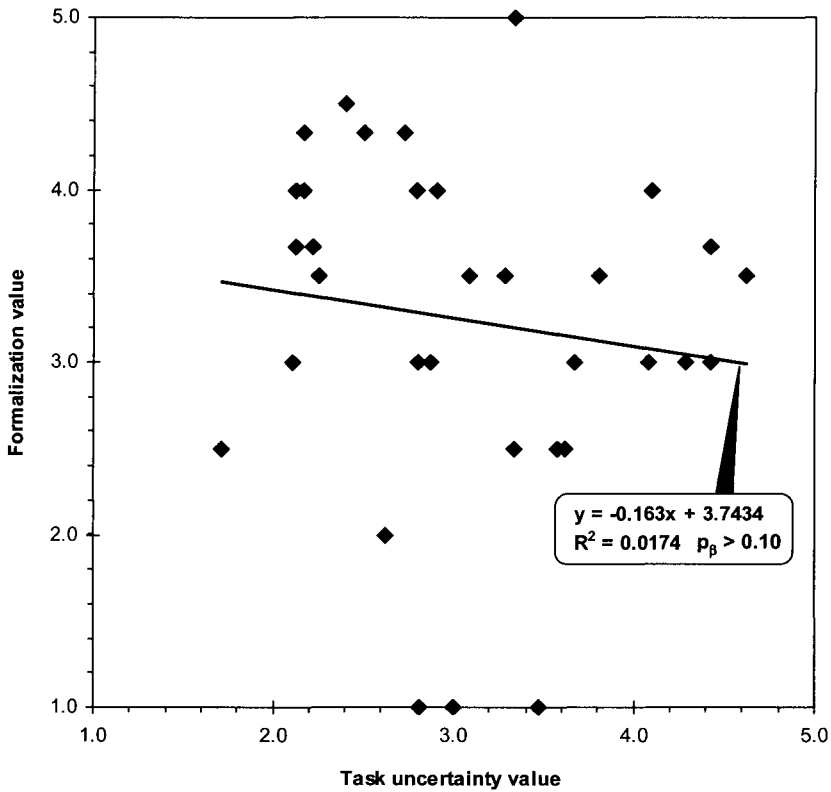


Figure 61: Distribution of firms by task uncertainty and formalization

The data points appeared to be randomly distributed across the scattergram. For example, the lowest as well as the highest formalization values were found for firms with similar task uncertainty values of approximately 3.0. The coefficients indicated a negative relationship between task uncertainty and formalization as proposed by hypothesis H6. However, the indication was weak and not significant.

In conclusion, the empirical findings did not find sufficient support for a negative association between task uncertainty and formalization as suggested by hypothesis H6.

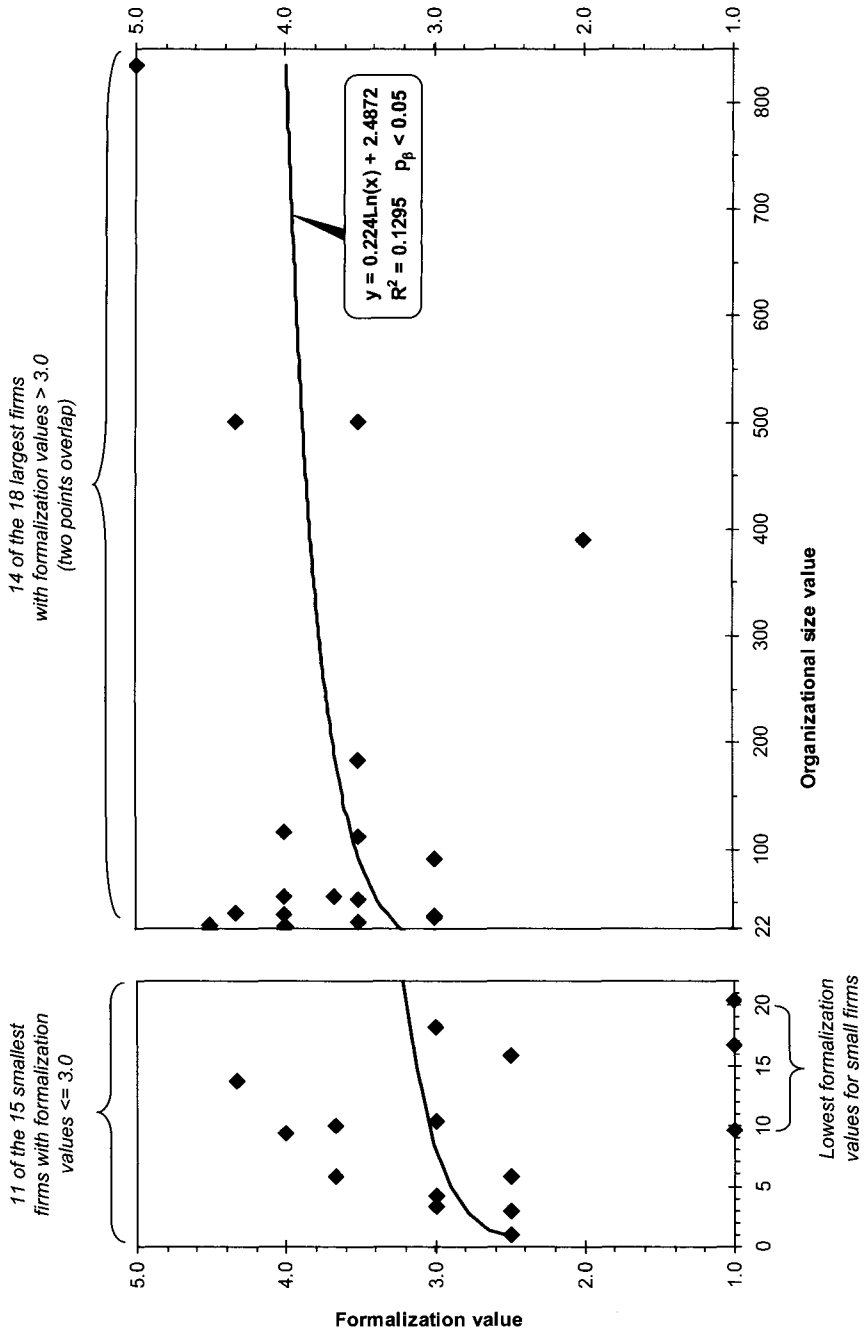
4.3.8 Organizational size and formalization (H7)

The seventh hypothesis claims a positive relationship between organizational size and formalization in the sense that organizational size is a driver of formalization. Accordingly, small firms are expected to have low formalization, whereas large firms are assumed to score high in this construct. The distribution of consulting firms by size and formalization is shown in Figure 62. Again, the graph is split into two parts with different scales of the horizontal axis for better clarity.

The analysis found a positive association with a correlation coefficient of $\rho_{33} = +0.36$ between logarithmically transformed size values and formalization values. The regression line had a positive slope and a regression coefficient of $\beta = +0.22$ which was significant at the 5 percent level ($p_{\beta} < 0.05$). Its coefficient of determination was $R^2 = 0.13$ and hence larger than the figure without logarithmic transformation of organizational size values at $R^2_{\text{non-log}} = 0.10$.

All of the minimum formalization values of 1.0 were found for small firms. 11 of the 15 smallest consultancies had a formalization value ≤ 3.0 . In contrast, 14 of the remaining 18 large firms had high formalization values in excess of 3.0. The largest consulting firm also scored highest in formalization at 5.0. When its data point was excluded, the correlation coefficient dropped by one fourth to $\rho_{32} = +0.27$ indicating a substantial influence of the largest firm's data point. Therefore, the coefficients were also computed for the sample of 32 consultancies. Excluding the largest firm, the regression coefficient was smaller at $\beta_{32} = +0.17$, which was not significant at the 10 percent level ($p_{\beta} > 0.10$). The coefficient of determination dropped to $R^2_{32} = 0.07$.

The analysis of the data found a positive association between organizational size and formalization as proposed by hypothesis H7. When the largest firm was excluded, the relationship became weaker, however, it was still apparent. Overall, hypothesis H7 was supported by the data, albeit the picture was somewhat less clear than for hypotheses H1 through H6.



4.4 Summary

The empirical analyses of 33 consulting firms found that four of the seven research hypotheses derived in section 2.7 were supported by the data. Three hypotheses were not supported. A summary of the results of hypothesis testing is provided in Table 10.

Hypothesis	Theoretical concepts and expected association	ρ_{33}	ρ_{32}	R^2	β F-test of significance	Conclusion
H1	Organizational size → + Structural differentiation	+0.74	+0.78	0.55	+0.46 significant; $p_\beta < 0.01$	Supported
H2	Organizational size → + Specialization	-0.18	-0.18	0.03	-0.10 not significant; $p_\beta > 0.10$	Not supported
H3	Organizational size → - Centralization	-0.68	-0.69	0.46	-0.59 significant; $p_\beta < 0.01$	Supported
H4	Specialization → - Task uncertainty	-0.52		0.27	-0.46 significant; $p_\beta < 0.01$	Supported
H5	Organizational size → - Task uncertainty	+0.22	+0.21	0.05	+0.11 not significant; $p_\beta > 0.10$	Not supported
H6	Task uncertainty → - Formalization	-0.13		0.02	-0.16 not significant; $p_\beta > 0.10$	Not supported
H7	Organizational size → + Formalization	+0.36		0.13 (R^2_{33})	+0.22 (β_{33}) significant; $p_\beta < 0.05$	Supported
			+0.27	0.07 (R^2_{32})	+0.17 (β_{32}) not significant; $p_\beta > 0.10$	

Table 10: Summary of hypotheses testing results

Referring back to the parsimonious model of structural contingency theory presented in Figure 12, the empirical findings yielded the overall picture shown in Figure 63.

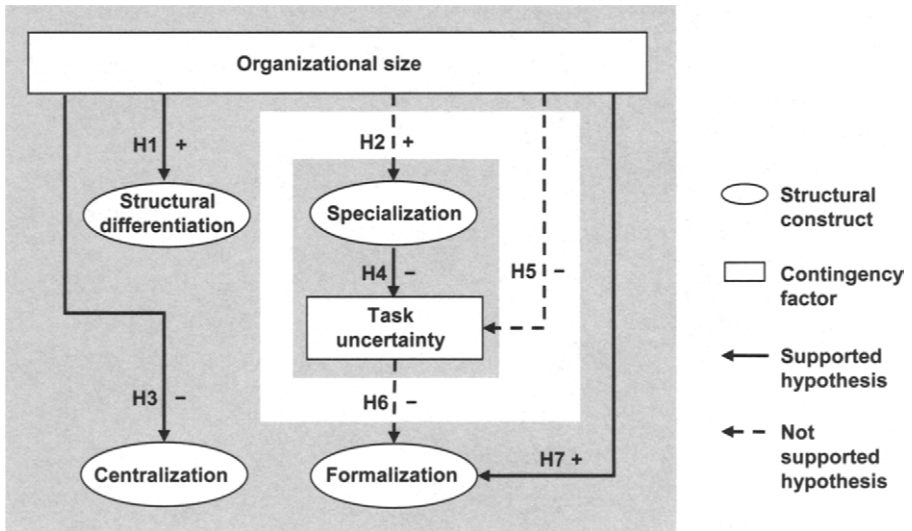


Figure 63: Results in the parsimonious model of structural contingency theory

The organizational size contingency was found to be positively related to structural differentiation (H1) and formalization (H7) and negatively related to centralization (H3). It could neither be linked to the task uncertainty contingency (H5) nor to the structural construct of specialization (H2). However, task uncertainty and specialization were found to be negatively associated with each other. As the link between task uncertainty and formalization had to be rejected as well (H6), the model disintegrated into two parts (shadings in Figure 63). The first segment comprised the organizational size contingency together with the constructs of structural differentiation, centralization, and formalization. The other segment included task uncertainty and specialization. There was no relationship between any of the concepts of the two segments. The findings of hypotheses testing are discussed in detail in section 5.1.1 and their implications on the contingency theory of organizations in section 5.3.

5 Discussion

The following chapter discusses the findings of this thesis. The topics appear in reverse order from their presentation previously – first results, then methodology, then theory. Section 5.1 reviews the results. It starts with the findings regarding the research hypotheses in section 5.1.1 in order to then discuss the identified measures and values of the contingency factors and the constructs of organizational structure in sections 5.1.2 and 5.1.3, respectively. Section 5.2 is concerned with the research methodology of this thesis. Thereafter, theoretical aspects are addressed. Section 5.3 considers implications on structural contingency theory whereas section 5.4 evaluates the findings in the light of institutional theory, another organization theory school of thought. Following a brief revisit of the objectives and the research question of this thesis in section 5.5, the chapter concludes with some practical implications that are provided in section 5.6.

5.1 Results

5.1.1 *Relationships between the contingency factors and the constructs of organizational structure*

The empirical test of hypotheses finds that four of the seven hypotheses are supported by the data whereas three hypotheses are not supported (Table 10). The outcome is consistent in the sense that the findings for different hypotheses do not logically contradict each other (Figure 63). For example, if size had been found to be positively related to specialization (H2), there would have been a logical contradiction with the other results. As specialization and task uncertainty are negatively related with each other (H4), and size and task uncertainty are not negatively but rather positively related (H5), size could not

be positively related to specialization. Contradictions of this kind, however, are not part of the findings.⁸⁹

The positive relationship between organizational size and structural differentiation as proposed by *hypothesis H1* and the negative one between size and centralization as proposed by *hypothesis H3* receive the strongest support from the data. Their correlation coefficients of $\rho_{33} = +0.74$ and $\rho_{33} = -0.68$ corresponding with coefficients of determination of $R^2 = 0.55$ and $R^2 = 0.46$ as well as regression coefficients of $\beta = +0.46$ and $\beta = -0.59$ that are both significant at the 1 percent level are clear indications of relationships between those concepts. While the concepts vary together, it has not been proven that there is a causal relationship between size and structural differentiation or centralization (section 5.2).

Organizational size is found to be positively associated with each of the eight measures of structural differentiation. In particular, large consulting firms have more support units ($\rho_{29} = +0.73$)⁹⁰, higher leverage ratios ($\rho_{29} = +0.68$), more functional practices ($\rho_{17} = +0.59$), and more levels within their consulting staff ($\rho_{33} = +0.58$). Size is also found to be negatively related to every single measure of centralization. Large firms tend to have less centralized decision-making with regard to staffing ($\rho_{31} = -0.69$), performance-related decisions ($\rho_{16} = -0.63$), and recruiting ($\rho_{29} = -0.57$). The high figures correspond with the strong support of hypotheses H1 and H3. They should be used with some caution, however. The overall structural differentiation and centralization values are each based on a large number of observations (section 5.1.2). Accordingly, the correlation coefficients between size and these two constructs of $\rho_{33} = +0.74$ and

⁸⁹ Such contradictions are not necessarily an indication of flawed results. They might be defensible with sound theoretical arguments. For example, Blau (1972: 7-10) found size to promote structural differentiation and to reduce the proportion of administrative personnel. He also discovered that structural differentiation increased the proportion of administrative personnel. As a result, the direct effect of size on administration was negative whereas the indirect effect via structural differentiation was positive. Blau (1972: 10-22) explained the phenomenon with functional differentiation and administrative hierarchy.

⁹⁰ The correlation coefficient is computed with observations available on 29 consultancies.

$\rho_{33} = -0.68$, respectively, are much more well-founded than those between size and single measures provided above. The values of concepts can therefore not be replaced with values of individual measures.

The data also lend support to the positive link between organizational size and formalization proposed by *hypothesis H7*. Size is positively related to each of the four formalization measures. The associations are somewhat weaker than those with measures of structural differentiation and centralization resulting in an overall correlation coefficient of $\rho_{33} = +0.36$ between size and formalization. The strongest relationships are found between size and the emerging formalization measure that contains up-or-out, training, performance evaluations, and recording of project history ($\rho_{33} = +0.42$), knowledge management ($\rho_{25} = +0.30$), and mentoring ($\rho_{32} = +0.16$).

The positive association between size and specialization as claimed by *hypothesis H2* is not supported by the data. The findings for the relationships between size and different measures of specialization are mixed. Large firms tend to have more focused consultants ($\rho_{20} = +0.46$) but recruit fewer experienced hires ($\rho_{20} = -0.42$). Their consultants also work on fewer projects simultaneously than consultants in small firms do ($\rho_{28} = -0.46$). The degree of specialization with regard to on-the-job training ($\rho_{20} = +0.03$) and off-the-job training ($\rho_{31} = -0.01$) is nearly unrelated to organizational size.

For the supported hypotheses H1, H3, and H7, organizational size is associated with all measures of the structural constructs in the way proposed by the hypotheses. The explanations for these findings are provided by structural contingency theory (sections 2.4 through 2.7) together with the arguments for the measures (sections 3.3.2, 3.3.4, and 3.3.5). The results for hypothesis H2, more precisely the associations between size and some of the measures of specialization, require further discussion. One possible reason for why hypothesis H2 is not supported by the data is that contingency theory wrongly claims a positive association between size and specialization. Another reason might be that the results are caused by the unique combination of firms studied. Both

arguments do not appear entirely convincing. The selection of consultancies has yielded comprehensible results on a number of other dimensions apart from specialization. It has also provided specialization values that are negatively related to task uncertainty in support of hypothesis H4. In addition, the positive relationship between size and specialization has been replicated in a large number of previous research studies (section 2.4.3), many of which find correlation coefficients in excess of +0.50 (Miller, 1987: 316).

The deviation between the theoretical prediction and the empirical finding for hypothesis H2 is more likely caused by 'inappropriate' measures of specialization and substantial room for human choice beyond the imperative of size. Both explanations are compatible with the fact that some specialization measures identify a positive association between size and specialization, while others support a negative relationship, and again others find the two concepts to be nearly unrelated. Consultants in large firms have tighter focus – as expected – and seem to increase focus during their consulting careers. In contrast, a higher share of consultants enter small firms as experienced professionals. While they work as consultants, if their degree of focus increases, it does so at a markedly slower rate than in large firms. The latter also tend to work more often on several consulting projects simultaneously. An explanation might be that small firms have more small projects that do not require full-time capacity. Large firms, on the other hand, may have more large projects with consultants working full-time on a single project. The number of simultaneous projects would then be related to average project size rather than to the degree of specialization in consulting.

The previous paragraphs have been primarily concerned with the associations of size with constructs of organizational structure. Overall, the results find size and the organizational structure of management consulting firms to be strongly interrelated, as predicted by the contingency theory of organizations. In the following, the relationships between the task uncertainty contingency and the structural constructs of formalization (H6) and specialization (H4) are discussed.

Hypothesis H6 predicts a negative relationship between task uncertainty and formalization. The findings point in this direction but were altogether too weak to support the hypothesis. While high task uncertainty is associated with low formalization in client contracts ($\rho_{31} = -0.63$) and knowledge management ($\rho_{25} = -0.22$), it is also found to be associated with high formalization of mentoring ($\rho_{32} = +0.19$) and the emerging measure that contains up-or-out, training, performance evaluations, and recording of project history ($\rho_{33} = +0.29$). It appears that there is a split between measures. The measures that are externally oriented and directly related to the consulting services such as client contracts and knowledge management might be dominated by task uncertainty as they support hypothesis H6. In contrast, the more internally oriented measures might be dominated by organizational size and follow the pattern described by hypothesis H7.

The negative link between task uncertainty and specialization proposed by *hypothesis H4* receives support from the data. The two concepts' correlation coefficient of $\rho = -0.52$, the coefficient of determination of $R^2 = 0.27$ and the regression coefficient of $\beta = -0.46$ that is significant at the 1 percent level, are indications of a relationship between those concepts. The task uncertainty values are negatively related to each of the five specialization measures. The highest correlation coefficients are found for on-the-job training ($\rho_{20} = -0.63$), simultaneous projects ($\rho_{28} = -0.41$), and new hires ($\rho_{21} = -0.35$). Interestingly, none of these three measures has a meaningful positive association with size as discussed above with respect to hypothesis H2. In firms with high task uncertainty, partners are more involved in on-the-job training, consultants tend to work on one project only, and hires are mostly recent university graduates with little experience. The description is consistent with what has been said about specialization in large firms. Relatively inexperienced hires build up a strong focus during their consulting careers, for example, under close guidance of seasoned consultants on one project at a time. Taken together, the findings about hypotheses H2 and H4 suggest that task uncertainty should be higher in large firms. Otherwise a contradiction would result as outlined at the beginning of this section.

The argument is supported by the findings with respect to *hypothesis H5*. Size and task uncertainty appear to be not negatively associated with each other as claimed by the hypothesis but rather positively. Their correlation coefficient of $\rho_{33} = +0.22$ as well as the regression coefficient of $\beta = +0.11$ indicate a positive relationship. An explanation could be that small firms avoid risky projects while large firms – buffered by greater financial resources, a larger number of projects, and other characteristics – are less risk-sensitive. Size is positively associated with all measures of task uncertainty with the exception of partners' involvement in project execution. Partners in large firms are less likely to be involved in project execution ($\rho_{32} = -0.39$). In contrast, large consultancies are found to work across a wider range of industries ($\rho_{31} = +0.40$) and functional topics ($\rho_{32} = +0.32$), are less involved in implementation work ($\rho_{27} = +0.25$), and use more time-and-material type contracts ($\rho_{33} = +0.11$) than their smaller peers.

The first two aspects appear to be remarkable. The measures of industry focus and functional focus have considerable influence on the findings about hypothesis H5. Their correlation coefficients of $\rho_{31} = +0.40$ and $\rho_{32} = +0.32$, respectively, are relatively high compared to the other measures of task uncertainty. In addition, they are based on as many as 31 and 32 out of 33 possible observations⁹¹ and thus together account for 26 percent of 243 available observations on task uncertainty (Appendix V). It has been argued that task uncertainty increases when a consulting firm expands into multiple industries (section 3.2.1.10) and functional areas (section 3.2.1.11). However, work in multiple industries and on multiple functional topics might also be associated with firms' size, thus creating a direct link from size to industry focus and functional focus. The link could be equal to what is mirrored in the high correlation coefficients of $\rho_{31} = +0.40$ for size with industry focus and $\rho_{32} = +0.32$ with functional focus, respectively. Following this argument, industry focus and functional

⁹¹ The term 'observation' is used in the following to refer to a consulting firm's value for a particular measure of task uncertainty or a structural construct, i.e., to a cell in the tables presented in Appendices VI and IX through XII.

focus shall be excluded as measures of task uncertainty. The implications are as follows. The positive correlation coefficient between organizational size and task uncertainty drops from $\rho_{33} = +0.22$ to $\rho_{33} = +0.09$. At the same time, the correlation coefficient between task uncertainty and specialization (H4) decreases slightly from $\rho = -0.52$ to $\rho = -0.50$ and that between task uncertainty and formalization (H6) from $\rho = -0.13$ to $\rho = -0.09$. The magnitude of the changes is insubstantial thereby buttressing the research methodology for its robustness with regard to individual measures and observations. The overall conclusions remain unaffected, whether or not industry focus and functional focus are considered as measures of task uncertainty in management consulting. The negative relationship proposed by hypothesis H4 is supported while those claimed by hypotheses H6 and H5 are not supported as findings are too weak (H6) or indicate a positive instead of a negative association (H5).

The previous paragraphs have discussed the associations of size and task uncertainty with individual measures of organizational structure. They have also considered the relationships between size and individual measures of task uncertainty. Along these lines, the associations between the structural concepts and individual measures of task uncertainty shall be briefly reviewed as well.⁹²

The negative association between task uncertainty and specialization in support of hypothesis H4 is mirrored in negative correlation coefficients for all relationships between specialization and individual task uncertainty measures. Most notably, consulting firms with high specialization score low in task uncertainty as they are often involved in implementation work ($\rho_{27} = -0.55$),

⁹² All of the reviewed relationships are concerned with the values of individual measures on one side *but* aggregated concept values on the other. For example, values for individual task uncertainty measures are discussed with aggregated specialization values or values of individual specialization measures are discussed with aggregated task uncertainty values. The reviewed relationships are not concerned with the associations between individual task uncertainty measures *and* individual specialization measures as those relationships are based on very few observations, are not very well-founded in the data, and need to be interpreted with even greater caution than outlined earlier in this section for the reviewed relationships.

rarely experience shifts in their project topics ($\rho_{29} = -0.54$), and have a narrow functional focus ($\rho_{32} = -0.39$) and a high level of 'productization' ($\rho_{21} = -0.24$).

The findings for the associations between formalization and individual task uncertainty measures are mixed. Taken together, the results do not lend sufficient support to hypothesis H6. Consultancies with high formalization values have little senior involvement in project execution ($\rho_{32} = -0.33$) and rare shifts in their project focus ($\rho_{29} = -0.16$), both being indications of low task uncertainty. They also show signs of high task uncertainty as they rarely offer service extensions ($\rho_8 = +0.46$) and use mostly time-and-material type contracts ($\rho_{33} = +0.24$).

5.1.2 *Constructs of organizational structure*

In total, twenty different measures are identified as useful for the assessment of organizational structure in a management consulting context. Eight of these measures are related to the structural differentiation construct (section 4.2.2), five to specialization (section 4.2.4), three to centralization (section 4.2.6), and four to formalization (section 4.2.8). The measures of structural differentiation include two measures and those of formalization include one measure that emerged from the data. The large number of measures should provide a sound basis for a relatively objective description of organizational structure, given the epistemological and ontological view of this thesis (section 1.3.4). However, the research design is partly inductive and therefore data are rarely available on all consulting firms for any particular measure. Therefore, the findings for the structural constructs shall be discussed below.

For *structural differentiation*, information is available for 187 observations out of 264 possible observations representing a completion rate of 71 percent (Appendix VIII). At least four of the eight measures are used to compute each consulting firm's structural differentiation value, with the exception of one consultancy for which data is available for only two measures. On average, 5.7

observations are included in the structural differentiation values. The large number of measures together with the high completion rate seem to provide a fairly sound foundation for the computation of structural differentiation values.

All of the measures are positively associated with each other with the exception of the measures sales positions and industry practices. For example, the support units measure is highly positively related with functional practices ($\rho_{15} = +0.77$), expert positions ($\rho_{19} = +0.62$), hierarchical levels among consultants ($\rho_{29} = +0.60$), industry practices ($\rho_{17} = +0.52$). It also has a correlation coefficient of $\rho_{29} = +0.80$ with the overall structural differentiation value. Many firms score consistently high or low on a number of dimensions. As a result, the measures do not level out when they are aggregated at the level of the theoretical concept. Moreover, the resulting structural differentiation values span a wide range from 4.7 at the high end down to the theoretical minimum of 1.0 (Figure 40). Two small groups of consulting firms are found to have identical values that are close to the distribution's mean. Overall, the findings appear to support the procedure used to obtain values for the degree of structural differentiation in management consulting firms.

A similar, albeit somewhat weaker picture is obtained for *specialization*, *centralization*, and *formalization* values. All of the three distributions start at the theoretical maximum of the scale at 5.0 (Figure 46, Figure 50, and Figure 55). The lowest specialization value is at 1.5, whereas centralization and formalization values fill the entire scale down to 1.0. The positive first impression gained from the wide range of values in all three cases is put into perspective by the shape of the distributions. In contrast to task uncertainty (Figure 28) and structural differentiation (Figure 40), the three distributions are 'staircase shaped'. A limited number of different values actually occur as several consulting firms are found to score identically. At the extreme, 10 consultancies have a specialization value of 3.0. The shape of the three distributions seems to be largely caused by the relatively small number of measures for each of the three constructs, as outlined below.

The five specialization measures contain 120 observations and thus a completion rate of 73 percent (Appendix IX). On average, 3.6 observations are used to compute specialization values. Five specialization values are derived from only two data points, whereas six consultancies' specialization values are based on all five measures. The highest correlations are found between the measures simultaneous projects and on-the-job training ($\rho_{19} = +0.71$), new hires and on-the-job training ($\rho_{10} = +0.54$), and between simultaneous project and new hires ($\rho_{18} = +0.49$).

A total of 76 out of 99 observations are filled out for the centralization construct, representing a share of 77 percent (Appendix X). The average number of data points included in centralization values amounts to 2.3. Five consulting firms' centralization values are based on only a single data point. 15 values are well-founded in all measures of centralization. The measures are found to be highly correlated with each other as all of their correlation coefficients are above 0.50.

Finally, the table of the four formalization measures is almost completely filled out at 92 percent or 121 out of 132 observations (Appendix XI). Twenty three consulting firms' formalization values are based on all four measures, one firm's value is derived from only two measures, while on average 3.7 observations are included in the formalization values. The most substantial correlations are positive and found between the measures of client contract and knowledge management ($\rho_{24} = +0.37$) on the one hand and between mentorship and the emerging measure containing up-or-out on the other ($\rho_{32} = +0.35$). The absolute values of all other correlations are smaller than 0.15. The finding is consistent with the argument that the measures seem to fall into two groups with the more externally oriented measures being driven by task uncertainty whereas more internally oriented measures are dominated by size (section 5.1.1)

The completion rates for specialization, centralization, and formalization at 73 percent, 77 percent, and 92 percent respectively, are all higher than that of structural differentiation at 71 percent. However, the average number of obser-

vations is considerably lower for each construct. While the figure for structural differentiation is at 5.7, on average 3.6, 2.3, and 3.7 observations are included for specialization, centralization, and formalization, respectively. The average number of data points is the product of the completion rate and the number of measures identified. Eight measures are identified for structural differentiation, five for specialization, three for centralization, and four for formalization. As completion rates are somewhat higher than for structural differentiation but the number of measures is lower, the average number of observations is lower as well. Therefore, it is not surprising that a number of firms are found to have identical values and the distributions of specialization values (Figure 46), centralization (Figure 50), and formalization values (Figure 55) are 'staircase shaped'.

A comparison with other research studies alleviates the critical notion provided above. Many studies that assess organizational structure with the help of structural differentiation, specialization, centralization, formalization, and similar constructs use only one or very few measures for each. The studies primarily use a deductive approach. As they investigate organizations in well-researched industries, the concepts can be operationalized before data collection and completion rates of 100 percent can be obtained. As a result, the studies' assessments are based on data for 1.0 or 2.0 observations per concept similar to the measurement of size in this thesis (Table 12). The figures of this thesis being as large as 5.7 are substantially higher. Even the lowest average of 2.3 observations for centralization appears to provide a strong basis for the assessment of organizational structure compared to many other research studies. Moreover, H7 being the hypothesis that is concerned with centralization and thus the lowest average number of observations yields one of the most unambiguous results of this thesis (section 5.1.1).

Structural construct	No. of measures	Completion rate	No. of observations (for no. of firms)			Distribution of construct values		
			Avg.	High	Low	High	Low	Shape
Structural differentiation	8	71%	5.7	8 (2)	2 (1)	4.7	1.0	linear
Specialization	5	73%	3.6	5 (6)	2 (5)	5.0	1.5	'stair-case'
Centralization	3	77%	2.3	3 (15)	1 (5)	5.0	1.0	'stair-case'
Formalization	4	92%	3.7	4 (23)	2 (1)	5.0	1.0	'stair-case'

Table 11: Assessment of organizational structure constructs

The assessment of the four constructs of organizational structure is summarized in Table 11. The results find substantial variations between consulting firms' organizational structures with regard to their degree of structural differentiation, specialization, centralization, and formalization. The consultancies' values for these constructs present an overall tendency that is obtained with the average of different measures that seem to widely reinforce each other. The overall assessment of organizational structure can be considered to be relatively objective in the framework of this thesis (section 1.3.4) as it is based on a large number of observations that are obtained on a total of 20 different measures of organizational structure.

5.1.3 Contingency factors

The measurement of *task uncertainty* in this thesis is based on a total of nine different measures (section 4.1.1). Seven of these measures are based on topics specified upfront, whereas two measures emerged from the data. Accounting for missing information, observations for at least five measures and on average 7.4 observations are included in the computation of task uncertainty values for each consultancy (Appendix V). The figure is considerably higher

than for any of the structural constructs (section 5.1.2). It should provide an even more sound basis for the computation of task uncertainty values. Information is available for 243 or 82 percent out of 297 observations in total. The task uncertainty values range from 4.6 to 1.7 (Figure 28). They use much of the scale albeit less than the distributions of structural constructs. Their distribution is close to linear. No more than two firms are found to have the same task uncertainty value. As summarized for structural differentiation, these findings, too, seem to support the way the task uncertainty values are computed and their use in hypotheses testing. Table 12 summarizes the assessment of task uncertainty and organizational size.

Contingency factor	No. of measures	Completion rate	No. of observations (for no. of firms)			Distribution of contingency values		
			Avg.	High	Low	High	Low	Shape
Task uncertainty	9	82%	7.4	9 (2)	5 (2)	4.6	1.7	linear
Organizational size	1	100%	1.0	1 (33)	1 (33)	835	1	skewed

Table 12: Assessment of contingency factors

The consulting services provided by various consultancies are found to exhibit different levels of task uncertainty. It has also been argued that these consulting services can be grouped into different categories (e.g., Maister, 1997a: 4-6; Nees & Greiner, 1985: 71-76; Obolensky, 2001b: 318-319; Payne, 1986: 44; Payne & Lumsden, 1987: 58-60; Schein, 1988: 5-11; Sommerlatte, 2004: 2-3; Turner, 1982: 120-121).⁹³ The distinctions go beyond those that classify consulting by client industries or functional areas (e.g., Kubr, 2002: 261-586;

⁹³ Some of the authors address not only management consulting but the professional services in general. Examples of other professional services have been provided in section 1.1.1.

Niedereichholz, 2001: 65-68; Payne, 1986: 46-49; Ringlstetter & Bürger, 2004: 288-289; Scott, 1998: 42-43, 90-92).

For example, Schein distinguishes three types of services that he calls "models of consultation" (Schein, 1988: 5-11). In the 'purchase of expertise' model the consultants mostly serve as providers of expert information or service. They act as 'doctors' who diagnose problems and prescribe remedies in the 'doctor-patient' model. Finally, in 'process consultation' the consultants help the client "to remain pro-active in the sense of retaining both the diagnostic and remedial initiative" (Schein, 1988: 11).

Maister (1997a: 4-6) identifies three classes of professional services. Broadly speaking, 'brain work' is concerned with the generation of new solutions to unique problems, 'grey-hair work' is based on experience and implies the customization of solutions to familiar problems, and 'efficiency work' revolves around the efficient application of proven solutions to routine problems.

Nees & Greiner (1985: 71-76) distinguish five types of management consultants based on the value created for the buyers of the consulting services and the manner in which consultancies carry out their projects among other aspects. The authors label their categories 'mental adventurer', 'strategic navigator', 'management physician', 'system architect', and 'friendly co-pilot'. The terms reveal similarities with the other two classifications, for example between the 'management physician' and Schein's 'doctor-patient' model. Similarly, the 'mental adventurer', Schein's 'purchase of expertise' model, and Maister's 'brain work' are all associated with the tackling of difficult issues and the solving of perplexing problems.

The three classifications are for the most part based on casual evidence. Each of them seems to reflect the task uncertainty concept. Maister's (1997a: 4-6) 'brain work' – 'grey-hair work' – 'efficiency work' distinction provides perhaps the most obvious link. 'Brain work' is inherently associated with high levels of task uncertainty, 'efficiency work' with low levels, and 'grey-hair' work is

somewhere in between the two extremes. The results of this thesis, however, do not suggest that distinct classes of consulting services with different levels of task uncertainty may exist. The distribution of task uncertainty values is close to linear (Figure 28). Not more than two consultancies are found to have the same value. The distribution does not display substantial steps between groups of firms with similar values as would be expected with distinct classes of services. In fact, the largest step totaling 0.4 units is found between the two firms with the lowest task uncertainty values. Two rationales may explain the findings. First, the classifications have been developed with a number of facets. The uncertainty associated with different types of consulting services is likely to be one of them. Other distinctions, independent of task uncertainty, may include the duration of the consulting relationship as indicated, for example, by Schein's (1988: 5-11) categories. The 'purchase of expertise' might be a short, one-time contact. The 'doctor-patient relationship' hints for repeated interactions, possibly interrupted by extended phases of good 'health', while 'process consultation' is necessarily long-term. Second, the classes may exemplify ideal-types of services. They may mark specific points along a continuum similar to the mechanistic-organic distinction provided by Burns & Stalker (section 2.4.2) or Weber's organizational models (section 2.4.3).

In addition to the argument for classes of consulting services, it has been proposed that the uncertainty inherent in different types of a professional service is mirrored in fee levels (e.g., Maister, 1997a: 4-5, 36). The fee level is expected to increase with task uncertainty. Accordingly, average annual revenues per consultant as a measure of fee level could have been used as a relatively easy-to-determine alternative to the task uncertainty values. For the research sample, the task uncertainty values and average annual revenues per consultant are found to have a positive correlation of $\rho = +0.42$.⁹⁴ However, the relationships of average annual revenues per consultant with specialization

⁹⁴ The 2003 figures for average revenue per consultant range from 140,000 EUR at the low end to a maximum of 560,000 EUR. Detail information is not provided for confidentiality reasons (section 3.2.2).

(H4) and size (H5) are both weaker than between task uncertainty values and these concepts. Moreover, average annual revenues per consultant are positively related to formalization values, whereas task uncertainty values – as proposed by hypothesis H6 – are negatively related to formalization values. As a result, average annual revenues per consultant are found to be an inadequate alternative to the task uncertainty values obtained in this thesis. The latter appear to be more useful, at least from a contingency perspective.

Similarly, it has been argued that the size of an organization as a contingency factor can be replaced by its age, for example, as a determinant of formalization (e.g., Mintzberg, 1979: 227-228). Size and age have also been considered to have a positive, close to linear relationship with each other (e.g., Greiner, 1972: 41; 1998: 56-58). For the consulting firms in the sample, size in terms of number of consultants and age are nearly uncorrelated at $\rho = -0.08$. The correlation coefficient between age and formalization is found to be negative at $\rho = -0.37$. The one between size and formalization is almost equally high in absolute terms at $\rho = +0.36$, however, it is positive – as predicted by hypothesis H7.

One explanation for the low correlation between size and age might be that the offices (section 1.3.3) of some consulting firms were started 'from scratch', whereas others were set up as satellites from abroad (Dickmann et al., 2006). The latter not only received considerable financial support from their parent organizations, they could also extend established client relationships – most likely a crucial resource for initial growth in consulting. As a result, some consultancies could expand much quicker than others. Another explanation might be that profitability in professional services is widely independent of firm size (Fluri & Weibel, 1999: 175; Maister, 1997a: 16-18, 36-39). For example, some of the world's most profitable law firms are comparatively small (Anonymous, 2004; Becker et al., 2001: 51). Consultancies, too, may consciously opt to grow very slowly – if at all – and to work in an attractive but rather small niche (Kubr, 2002: 632; Lowendahl, 2000: 133; Maister, 1997a: 23-24).

For these reasons, size appears to be preferable over age as a contingency of organizational structure in management consulting. As expected, the distribution of size values as shown in Figure 30 is highly skewed. The mean of 99.2 and the median of 25.0 differ considerably. The skewness is alleviated through the logarithmic transformation of size values for regression analysis. The selection of number of consultants as a measure of organizational size is supported by its high correlations with other measures of size (Appendix VII). The size values are substantiated by plausibility checks, using the ratios annual revenues per consultant, annual revenues per employee, and consultants' share of total employment (section 3.4.3).

The mean of the total number of employees for the research sample of this thesis is 754.⁹⁵ The number is smaller than in most other empirical studies including the pioneering investigations of the size contingency (section 2.4.3). The Aston sample had a mean of 3,370 employees, the National sample of 1,542, and the sample used by Blau & Schoenherr of 1,195 (Blau & Schoenherr, 1971: 44; Child, 1972a: 167; Child & Mansfield, 1972: 373; Pugh et al., 1969b: 97). The difference can be explained with the industries of the analyzed firms. Consultancies are on average rather small (section 1.1.2). As this thesis focuses on large and medium-sized consulting firms, the mean is considerably higher than the industry average. It is still lower than the average size of banks, colleges, hospitals, manufacturing firms, newspaper publishers, and public employment agencies which have been investigated in the classical studies mentioned above and many others (Donaldson, 1986: 75-77; Miller, 1987: 316).

⁹⁵ The value of the number of employees – not consultants – is provided without normalization as outlined in section 3.2.2. The mean is discussed and not the median as the more appropriate measure, because the latter has not been presented for some of the studies used for comparison.

5.2 Methodology

Virtually all textbooks on research methodology devote a section to discuss the quality of research. They outline quality criteria such as objectivity – the degree to which research findings are independent of the inquirer, reliability – the degree to which they are accurate and can be replicated, and validity – the degree to which what is measured matches what was intended to be measured (e.g., Bortz & Döring, 2002: 192-206, 326-329; Bronner et al., 1999: 111-114; Friedrichs, 1990: 100-105; Mayer, 2002: 54-56; Mayring, 2002: 140-148; Miles & Huberman, 1994: 277-280; Neuman, 2000: 164-172). These quality criteria have been developed for traditional quantitative research (Gibbs, 2002: 13; Mayer, 2002: 54; Mayring, 2002: 140; Neuman, 2000: 170). Their applicability in qualitative research has been the subject of debate. The opposing arguments reflect different epistemological and ontological views on social science (section 1.3.4). Some scholars have argued that “terms such as credibility, transferability, dependability, and confirmability replace the usual positivist criteria of internal and external validity, reliability, and objectivity” (Denzin & Lincoln, 2000b: 21; similar arguments in Mayring, 2002: 142-148; Reichertz, 2000). Others have merely adapted the classical criteria and have added a different notion to their definitions (e.g., Bortz & Döring, 2002: 326-329; Mayer, 2002: 56; Miles & Huberman, 1994: 277-280; Neuman, 2000: 170-172). The following paragraphs discuss several aspects that are related to the ‘goodness’ of the research methodology, i.e., the degree to which the findings are “possibly or probably true, reliable, valid, dependable, reasonable, confirmable, credible, useful, compelling, significant, empowering” (Miles & Huberman, 1994: 277).

This thesis has integrated elements rooted in both the qualitative and the quantitative research tradition (section 3.1). It has made an effort to combine the advantages of inductive research with those of deductive hypotheses-testing. The approach required to take a number of trade-off decisions which, in turn, have implications on the quality of research. The most important aspects are discussed in the following.

The empirical data for this research study are obtained from a small, purposely derived sample of consulting firms (sections 3.1 and 3.4.1). To analyze organizations from a single industry greatly alleviates problems of comparability (Dess et al., 1990: 20; Hitt et al., 2001: 18; Kieser, 2002a: 184). By the same token it limits the generalizability of findings *across* different industries (Dess et al., 1990: 13), including other professional services. The structure of organizations in other professional service industries has been argued to exhibit similarities with management consulting.⁹⁶ However, different legal as well as other requirements might shape those firms' organizational structures as well. For example, the activities of the Security and Exchange Commission resulting in the 2002 passing of the Sarbanes-Oxley act in the U.S. pushed accounting firms to strictly separate their auditing and consulting operations (Lerner, 2003: 23). As a result, PricewaterhouseCoopers sold its global consulting business to IBM, while Cap Gemini acquired the one from Ernst & Young (Landriscina, 2002: 3; Lerner, 2003: 165-166, 179). Such circumstances are very likely to influence the way firms in other professional services are structured.

The generalizability of the findings *within* the consulting industry needs to be considered as well. The study is based on interviews with representatives from offices (section 1.3.3) from the German-speaking areas of Germany, Austria, and Northern Switzerland. The geographic focus allowed all interviews to be conducted in German, the interviewees' and the interviewer's mother tongue. An associated trade-off is the lack of cross-cultural evidence. Several arguments suggest that the findings should be valid elsewhere. First, almost half of the firms included in the sample have roots outside the investigated market area (Figure 15). Their analyzed offices are likely to have structures that are at least similar to those in their home market. Some of the consultancies even operate as 'one-firm firms' that strive for homogeneity throughout their entire organization (section 1.3.3). Second, research in management consulting

⁹⁶ Much of the organizational literature is on professional service firms in general and not only on consulting firms (section 1.1.3).

has been found to be valid in a cross-cultural context (Armbrüster & Barchewitz, 2004: 14). For example, studies on the Australian and New Zealand's (Page, 1998), the British (Clark, 1993; 1995), and the German (Glückler & Armbrüster, 2003) market for consulting services have arrived at very similar results.

A number of trade-off decisions had to be made with regard to data gathering. The selection of personal interviews as data generation method allowed to directly access experienced consultants, to exercise control about the interview process, and to obtain much background information (section 3.1). However, it also limited the number of interviews that could be conducted. As a result, the findings are based on a total of 33 interviews – one interview per consultancy – and three additional 'cross firm' interviews (section 3.4.2). The sample includes 16 of the 49 large consulting firms in the German-speaking area and an approximately equal number of the many medium-sized consultancies.

Another trade-off decision was concerned with the breadth, depth, and completeness of the information obtained. The semi-structured interviews allowed for coverage of a variety of predefined topics but also the impromptu probing of other interesting subjects as they arose (section 3.4.2). As a disadvantage, semi-structured interviews resulted in incomplete information on many measures (figures in sections 4.1.1, 4.2.2, 4.2.4, 4.2.6, and 4.2.8). For some of the measures that emerged during data analysis such as sales positions (section 4.2.2.7), information is available on only a fraction of the sample. Still, these measures are included in the data analysis as any additional information is valuable. At a minimum, further observations broaden the data basis for hypothesis testing of this research study. They may also provide starting points for future research. The latter point is a reason why missing data is often considered not as a failure but a central outcome of qualitative type research (Singh & Richards, 2003).

Another aspect is the interviewees' ability and willingness to provide an accurate picture of the work and organizational structure of their firms. The interviewees had a minimum of two and an average of more than six years of

work experience with their firms (section 3.4.2). Any information provided about consultancies other than the one represented by the interviewee was not used for further analysis. In addition, the interviews aimed to collect mostly simple descriptions – not interpretations or explanations – about a current situation. Therefore, the interviewees should have been able to provide accurate information. They should also have been supportive in doing so. Each of them volunteered to be interviewed and was ensured maximum confidentiality (section 3.4.2).

The data triangulation (dos Santos et al., 2003: 20; Miles & Huberman, 1994: 266) with ‘cross firm’ interviews did not reveal any contradictions that could be indicators of inaccurate information obtained during the 33 ‘regular’ interviews. Also, neither interviewee characteristics (Figure 16) nor firm attributes (Figure 15) are found to substantially influence results. For example, most of the Swiss consultancies were rather small, privately owned AGs, and were represented by an experienced, partner-level consultant with an education in business administration or economics. This pattern, albeit statistically significant, was not reflected in the consultancies’ task uncertainty or organizational structure values. The findings are consistent with the argument that self-reported and ‘objective’ measures are often highly correlated (e.g., Cagwin & Bouwman, 2002: 27; Dess & Robinson, 1984: 267-270; Schäffer & Steiners, 2004: 13; Shortell & Zajac, 1990: 828-829).

A number of aspects were consciously held constant throughout the interview series to improve the comparability of findings (section 3.4.2). Neither the interview topic list nor the hypotheses under investigation were provided to any of the interviewees. The overall structure of interview topics was kept constant in all interviews. In addition, the interviews were conducted by the same interviewer, who also prepared the final version of all transcriptions and performed all the coding (sections 3.5.2 and 3.5.3). Having one researcher executing all research steps should be advantageous regarding internal consistency. However, the repeated review and coding of texts is inherently more subjective than the statistical analysis of quantitative type data (Marshall, 2002:;

Mayer, 2002: 24, 46; Miles & Huberman, 1994: 277; Rynes & Gephart, 2004: 454). Therefore, qualitative data are often coded separately by different researchers to enhance intercoder reliability (Neuman, 2000: 165; Schnell et al., 1999: 371-372). This step was not taken here as the entire research project was performed by a single researcher in order to compose a doctoral thesis. However, the use of a software tool has been argued to improve comprehensiveness and thoroughness of data coding (section 3.5.1). In addition, the computation of average values across several measures for each theoretical concept as discussed throughout section 5.1 should help to yield results that are robust with regard to extreme values and observation errors.

The contingency theory of organizations states that organizational structure must be aligned with the values of the contingency factors for optimal performance (section 2.3.1). There are, however, relatively few studies that explicitly include performance in the analysis (section 2.3.4). This thesis is no exception to that observation. A trade-off inherent in any investigation of management consulting firms is the limited availability of appropriate data (section 1.1.3), particularly on financial performance. Profitability and growth measures are commonly used to assess organizational performance (section 2.3.4). The latter often bear little informational value in the professional service industries, as firms may consciously opt not to grow or to grow slowly (section 5.1.3). The former are simply not available. Reliable, comparable financial data in excess of total annual revenues and associated revenue growth can rarely be obtained. Even revenue figures are sometimes based on expert estimates (e.g., Lünendonk, 2004a: 28-30; Lünendonk, 2004b: 15-16).

Some researchers working in the field of management consulting and professional services circumvent this problem by including only those firms in their samples for which financial data are available (e.g., Hitt et al., 2001: 19, 25; Skaggs & Huffman, 2003: 778-779; Skaggs & Snow, 2004: 278). The choice typically limits their investigations to publicly held firms (e.g., Skaggs & Huffman, 2003; Skaggs & Snow, 2004). It appeared to be too restrictive for this thesis as only 27 percent of the consultancies from the sample are publicly held (Figure

15).⁹⁷ Even for some of these consultancies, namely those that are subsidiaries of publicly listed parent corporations, data are most likely not available. In addition, Hickson et al. (1988: 6) observed that the performance concept is included in many research studies even if it is not explicitly dealt with. The general assumption that market forces drive low-performing organizations out of business needs to be applied with some caution (Dess & Robinson, 1984: 266; Frese, 1992: 194-195). It appears to be acceptable for the consulting industry at its current stage. First, management consulting is a people-driven industry requiring little capital (section 3.2.2). It has comparatively low barriers to entry and exit (Richter et al., 2005b: 3; Scott, 1998: 27-28). Second, as competition in the industry has been intense in recent years (sections 1.1.2 and 1.1.3), poorly performing firms are likely to vanish relatively quickly. Examples of consultancies which have seen the meltdown since industry growth has come to a halt (Figure 1) include long-established players such as Arthur D. Little⁹⁸ as well as consulting firms founded during the boom years of the 1990s such as MarchFirst and Razorfish (Graubner & Richter, 2003: 43; Thayer, 2002; Wimmer et al., 2003: 62).

All data collected as part of this research study is cross-sectional and related to the situation in management consultancies as of 2003 (section 3.1). Cross-sectional data cannot capture processes or change (Cagwin & Bouwman, 2002: 28; Miller & Mintzberg, 1983: 61; Neuman, 2000: 30). The data can therefore not assess whether or not changes in the contingency factors predate and possibly cause changes in organizational structure. This type of analysis would at a minimum require that the contingencies are assessed at an earlier point in time than organizational structure. A more convincing approach would be to

⁹⁷ The sample appears to be fairly representative with respect to public ownership. Of the 50 leading consulting firms included in the Vault report (Lerner, 2003), 58 percent operate as partnerships, 18 percent are investor or founder owned, but only 24 percent are at least partially quoted on the stock market or belong to publicly listed parent companies (Richter & Lingelbach, 2004: 9-10).

⁹⁸ After filing for Chapter 11 bankruptcy in the U.S. in early 2002, most parts of Arthur D. Little were acquired by Altran Technologies, which continues to use the Arthur D. Little brand name (Thayer, 2002; Wimmer et al., 2003: 62).

assess both contingency factors and structural constructs repeatedly over time. It could reveal if changes in the contingencies – perhaps after a time lag – are mirrored in alternations of organizational structure. This type of analysis would require event studies or longitudinal research with time-series data (Bortz & Döring, 2002: 565; Cagwin & Bouwman, 2002: 28; Neuman, 2000: 30-31). Such data might be available as secondary data for firm size. To obtain reliable and comparable information about task uncertainty and organizational structure, primary qualitative data would have to be collected repeatedly – possibly over several years – which is beyond the scope of this research study. In addition, it has been argued that data can support more than one causal model such as between size, technology, and organizational structure (Heise, 1972: 59; Hilton & Aldrich, 1972: 47-48), thereby creating problems with the testing of cause-and-effect relationships even if time-series type data was available. However, the data collected in this research study can falsify the cause-and-effect relationships proposed by the research hypotheses if they do not support the expected associations. For example, as large size is not found to be positively associated with high specialization, an increase in size cannot predate and cause an increase in specialization. As a result, hypothesis H2 is not supported by the data. The same arguments hold true for the hypotheses H5 and H6.

5.3 Implications for contingency theory

The findings of this thesis are consistent with classical bureaucratic contingency theory in the sense that size is a contingency of organizational structure (section 2.4.3). The much replicated positive associations of organizational size with structural differentiation and formalization are confirmed, and so is the negative relationship between size and centralization. Task uncertainty is identified as a contingency factor in support of classical organic contingency theory (section 2.4.2). It is found to be negatively associated with specialization.

The proposed relationships between size and specialization and between task uncertainty and formalization are not supported. Similarly, Donaldson's parsimonious model of contingency theory which integrates the contingencies of size and task uncertainty (Figure 11) does not receive support from the empirical findings. As shown in Figure 63, the model disintegrates into two parts. One segment comprises organizational size, structural differentiation, centralization, and formalization, the other contains task uncertainty and specialization. All three relationships that would 'bridge' the gap between the two segments are not supported by the results.

As discussed in section 5.1.1, the findings indicate that there might be a positive relationship between size and task uncertainty, not a negative one as proposed by the model. They also point towards a negative relationship between size and specialization. Together with the supported negative linkage between specialization and task uncertainty, the relationships appear comprehensible. As size is negatively associated with specialization, and specialization is negatively associated with task uncertainty, size is positively associated with task uncertainty. This argument is in line with Donaldson's proposition that size and task uncertainty are not independent but causally linked. It contradicts his explanations, however. Jobs become wider rather than narrower in scope as organizational size increases thereby increasing task uncertainty. Two problems arise with this interpretation. First, why would jobs become wider and specialization decrease with size? Specialization has been found to increase with size across many research studies. In fact, meta-reviews found the positive correlations between size and specialization to be the highest of all correlations between size and structural constructs (section 2.4.3). Second, if size and task uncertainty are positively related and size is positively related to formalization, task uncertainty also should be positively related to formalization. This association is not indicated by the results. Moreover, a large number of studies from organic theory school have found high task uncertainty to be associated with a more organic structure, i.e., low formalization (section 2.4.2).

A more defensible interpretation would be that the two contingency factors influence organizational structure as essentially separate concepts. Their effects on structure are not integrated as in Donaldson’s model. The corresponding relationships are presented in Figure 64.

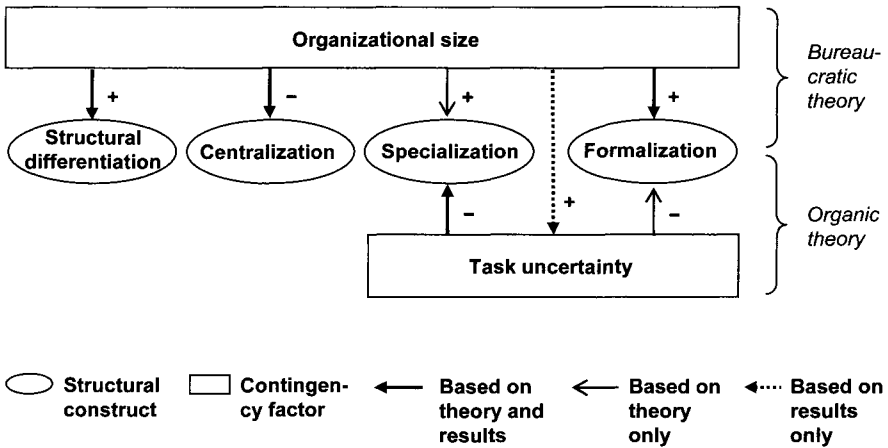


Figure 64: Relationships based on classical contingency theory and research results

As argued by bureaucratic theory, size is negatively associated with centralization and positively with structural differentiation, formalization, and specialization. The first three relationships are supported by the results of this thesis. In contrast, task uncertainty is negatively related to specialization and formalization according to organic theory. The former relationship is supported by the findings as well.

The results also suggest that there might be a positive relationship between organizational size and task uncertainty. One explanation would be that small firms are risk averse and avoid tasks associated with high uncertainty. Large firms – having more resources to buffer failures – are less risk sensitive and more inclined to undertake uncertain ventures. Along the same lines, large firms tend to serve large clients often on large projects (Greenwood & Empson, 2003: 922; von Keller & Lorentz, 1999: 364). In addition to the higher

risk typically associated with larger projects, these projects might also involve numerous organizational units with conflicting interests, located in multiple sites and countries, and influenced by different culture and language backgrounds. All of these aspects might increase the risk large consultancies have to bear – and the fees they can command (Svensson, 2000: 33). However, the relationship between size and task uncertainty is not significant and needs further investigation. It might only be apparent as average firm size in consulting is comparatively small (section 5.1.3). Many of the consulting firms having only a few employees may indeed avoid risky work. A small number of unsuccessful consulting projects may threaten their existence. Such considerations are likely to play a more subtle role or no role at all in industries with firms that are, on average, considerably larger.

This interpretation is consistent with other findings briefly discussed in section 5.1.1. First, the strongest associations are found for structural differentiation and centralization. Both concepts are solely dependent on the size contingency according to the hypotheses. The relationships between size and constructs of organizational structure are considerably weaker when the constructs are also associated with task uncertainty. While the positive association between size and formalization is marginally supported, the one between size and specialization is not supported. In contrast, the relationship between task uncertainty and specialization is supported while the one between task uncertainty and formalization is not. This result can be explained by the opposing effects of the two contingencies on organizational structure. While size dominates the degree of formalization, task uncertainty prevails in specialization. Second, there seems to be a split between different measures of formalization. Size is positively associated with all measures of formalization. The highest correlation is found with the emerging measure that contains up-or-out, training, performance evaluations, and recording of project history and the lowest with client contracts. In contrast, task uncertainty has the highest negative – as expected – correlation with client contracts and a positive one with the emerging measure. An explanation would be that size primarily effects the more internal dimensions of formalization. Size is an aspect of the consulting firm

itself, while task is directly concerned with both the consultancy and its clients. Hence, the negative influence of task uncertainty is stronger with respect to the more external dimensions such as the formalization of client contracts. These interpretations should be viewed with caution. They are tentative even for consulting. The degree to which they are generalizable within and beyond the consulting sector requires further investigation.

In summary, organizational size and task uncertainty are confirmed as being related to organizational structure. Size appears to be the dominant contingency factor having the more and stronger associations with structure. This conclusion is consistent with arguments of the pioneers of structural contingency theory research such as Hickson et al. (1969: 387-388) and Child & Mansfield (1972: 383). The results buttress classical organic and bureaucratic theory rather than Donaldson's recent model of contingency theory (Figure 11).

5.4 Findings in the light of institutional theory

Chapter 5 so far has discussed the research results in the light of structural contingency theory and also reflected back on the theory itself. Leading organization theorists have argued that a perspective using different schools of thought is beneficial for the understanding of organizational design (e.g., Roberts & Greenwood, 1997). This section compares the findings with arguments of institutional theory (section 2.2). Institutional theorists have developed a considerable body of knowledge on professional service organizations in recent years. This section aims to assess the results in a wider context as it extends beyond the contingency theory of organizations.

Broadly speaking, institutional theory proposes 'archetypes' – also labeled 'gestalts' or 'configurations' (e.g., Meyer et al., 1993: 1175-1176; Miller, 1981: 14; 1986: 236) – of internally consistent bundles of "structural elements and underpinning interpretive schemes" (Greenwood & Hinings, 1987: 563). The theory is concerned with how "pattern[s] of multiple ... variables" (Delery

& Doty, 1996: 804) are related to one another rather than individual concepts. Archetypes as introduced by Miller & Friesen (1977: 255) display such a coherent pattern in a number of organizational design elements. They also represent an embodiment of the ideas, beliefs, values, and interests underlying organizational design (Greenwood & Hinings, 1988: 295; Ranson et al., 1980: 4-7). Institutional theory has its roots in contingency theory, i.e., in the testing of relationships between contingency factors and constructs of organizational structure but grounds them in rich, multivariate descriptions (Donaldson, 2001a: 142; Meyer et al., 1993: 1177; Miller, 1981: 1-3; Miller & Friesen, 1977: 253-255; 1978: 921; 1980a: 268-269; Miller & Mintzberg, 1983: 57). In his early contribution to the field, Mintzberg (1979: 299-467) discussed five structural configurations – simple structure, machine bureaucracy, professional bureaucracy, divisionalized form, and adhocracy. Similarly, Miller (1986: 241-248) proposed four archetypes – simple niche marketer, mechanistic cost leader, innovating adhocracy, and divisionalized conglomerate – while Doty et al. (1993: 1203-1204) postulated a large number of hybrid types as mixed forms of the ideal type configurations.

Institutional theory and the concept of archetypes have been extensively applied in the professional services by a group of scholars around Hinings and Greenwood since the early 1990s (e.g., Brock et al., 1999a; Cooper et al., 1996; Greenwood et al., 1990; Greenwood et al., 2002; Hinings et al., 1991; Hinings et al., 1999; Powell et al., 1999; Rose & Hinings, 1999). Others such as Lowendahl (2000: 102-132) and Morgan & Quack (2004: 7-23) have introduced generic types of PSFs in their wake. Greenwood et al. (1990) defined the ‘professional partnership’ or P²-form. Their aim was to discover the archetype prevalent in the hitherto much neglected field of professional services and to distinguish it from Williamson’s (1970: 133-167; 1975: 132-154; 1985: 279-285) multidivisional M-form and the holding company or H-form (Greenwood et al., 1990: 725-726). Several years later, the researchers identified another archetype that they

labeled 'managerial professional business'⁹⁹ or MPB-form (Cooper et al., 1996: 629-635). The structural characteristics¹⁰⁰ of the P²- and the MPB-form are summarized in Table 13.

	Professional partnership – P²	Managerial professional business – MPB
Structural differentiation	<ul style="list-style-type: none"> • Minimum hierarchy • Minimal investment in systems of management 	<ul style="list-style-type: none"> • Specialist groups • Planning, marketing, HR-functions • Management
Specialization	<ul style="list-style-type: none"> • Low, based on professional divisions and personal interest 	<ul style="list-style-type: none"> • Medium, based on professional divisions and functional difference
Centralization	<ul style="list-style-type: none"> • Decentralized • More consensus decision-making 	<ul style="list-style-type: none"> • More centralization • More directive decision-making
Formalization	<ul style="list-style-type: none"> • Low use of rules and procedures • Partner compensation based on seniority 	<ul style="list-style-type: none"> • Generally more rules • Formalized partner compensation systems

Table 13: Structural characteristics of the P²- and the MPB-archetype (based on Cooper et al., 1996: 626-635; Hinings et al., 1999: 134)

Most of the empirical research on which the development of archetypes is based has been conducted in accounting (Cooper et al., 1996: 631, 645; Dirsmith et al., 1997: 5; Greenwood et al., 1990: 729-730; Hinings et al., 1999: 152). Initially, Greenwood et al. (1990: 750-752) questioned whether their findings could be replicated in other industries with similar characteristics such as engineering, real estate, or management consulting. They expected, for example, that "management consultants' views and beliefs about how professional services should be organized differ from those of accountants" (Greenwood et

⁹⁹ The MPB-form has later also been termed '*managed* professional business' (e.g., Hinings et al., 1999: 140; Powell et al., 1999: 8).

¹⁰⁰ Other characteristics such as the interpretative scheme and the systems associated with each archetype are presented elsewhere (e.g., Cooper et al., 1996: 626, 630; Hinings et al., 1999: 134).

al., 1990: 752). Several researchers, however, have identified both the P²-form and to a lesser degree the MPB-form in other professional services including law and health care (e.g., Cooper et al., 1996: 635-643; Flood, 1999: 180; Gray, 1999: 96-99; Morris & Pinnington, 1998: 85; 1999: 213; Pinnington & Morris, 2003: 95-97). Others, including the author of this thesis, have recently suggested that they might be prevalent in management consulting as well (Dickmann et al., 2006; Richter, 2004: 122-123; Richter et al., 2005a; Richter et al., 2005b: 3-6).

According to institutional theory, consulting firms that follow the P²-form should exhibit low levels of structural differentiation, specialization, centralization, and formalization (Table 13). In contrast, MPB-type consultancies tend to score high in each of the structural constructs. This overall assessment corresponds with the sum of the values obtained for each construct in section 4.2. The corresponding overall structural values are presented in Figure 65.

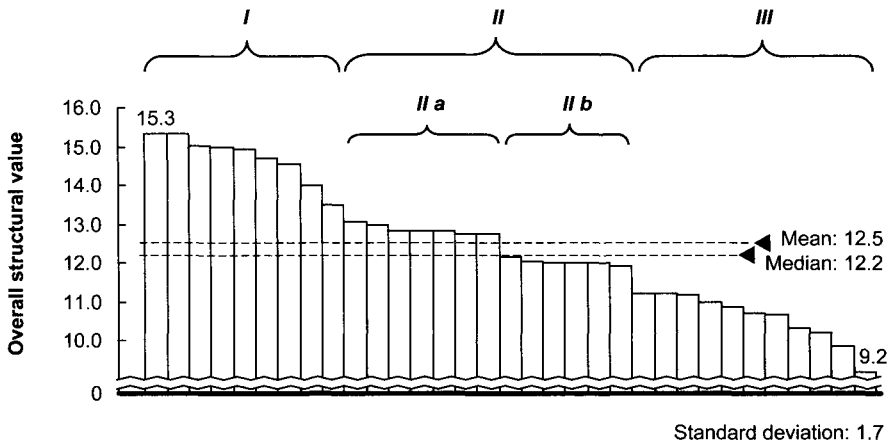


Figure 65: Overall structural values of 33 consulting firms

The distribution shows substantial differences between consulting firms. The highest overall structural values are at 15.3, while the lowest value is at 9.2. The distribution's standard deviation is 1.7, its mean is at 12.5 and close to the median at 12.2. Arguably, three different groups of firms can be identified. Group I has high overall structural values that are for the most part substan-

tially above the distribution's mean. It is comprised of 9 consultancies. The 13 firms in group II, being the largest group, have values around the mean. Perhaps this group could be divided into two sub-groups, each with very similar overall structural values just above and below the mean, respectively. While there is no clear borderline between group I and II, the third group is separated by a step of more than 0.7 in overall structural values equalling almost half a standard deviation. Group III consists of the 11 consulting firms with the lowest overall structural values.

Overall, the impression gained from the empirical evidence does not support a clear bifurcation between two archetypes. However, it provides some indications pointing in that direction. One could argue that group I contains consulting firms that are related to the MPB-form, while group III having substantially lower values resembles the P²-form. In between are one or perhaps two groups of mixed forms. The fact that Figure 65 does not display two distinct groups of consulting firms with very similar overall structural values in each is not surprising for several reasons.

First, the pure forms of the archetypes are not exhaustive for the description of organizational structures. There might be mixed forms with an overlap in characteristics typically associated with one archetype or the other (Morris & Pinnington, 1999: 210-213; Pinnington & Morris, 2003: 95-97; Richter et al., 2005b: 6). The proponents of the two archetypes themselves have employed the metaphor "sedimentation" (Cooper et al., 1996) to delineate a phenomenon characterized by "a more layered, dialectical pattern" (Caronna & Scott, 1999: 69).

Second, the idea behind archetypes is to describe commonalities and tendencies in organizational design rather than uniformity. So there is "latitude for variation" (Miller & Friesen, 1980a: 281) in the archetypes themselves.

Third, organizational change is a central topic in the institutional theory literature (e.g., Denis et al., 1999: 106-108; Greenwood & Hinings, 1988: 295; Greenwood & Lachman, 1996: 568-569; Kondra & Hinings, 1998: 743; Miller &

Friesen, 1980a: 269-270; 1980b: 592-594). Many authors have argued that there is a general tendency for PSFs to move from the P²-form towards the MPB-form (e.g., Gray, 1999: 97, 99; Gray & Clegg, 2004: 18; Morris & Pinnington, 1999: 213; Rose & Hinings, 1999: 51). Given that the move from one archetype to another is a gradual change process rather than a quantum leap¹⁰¹, there are necessarily – at least for the interim – mixed forms as described above. Moreover, some firms might not adopt the MPB-form in its entirety but adopt several of its characteristics while primarily maintaining the P²-form. The resulting mixed forms then would not only be adapted temporarily but for longer periods of time. This notion has been bolstered by the empirical findings of a large scale interview survey of British law firms (Morris & Pinnington, 1999: 95-97; Pinnington & Morris, 2003: 210-213).

In summary, the empirical findings of this thesis find some indications for the prevalence of the P²- and the MPB-form in management consulting. They do not, however, support the idea of a bifurcation of organizational designs between these two archetypes. More research is needed to assess, for example, whether there is a general move for consulting firms, too, away from the P²-form and towards the MPB-form. The results of this thesis suggest that the two archetypes are – at a minimum – organizational typologies that span a continuum of valid organizational designs, similar to the typologies proposed by Burns & Stalker (section 2.4.2), Weber (section 2.4.3) and others. The more valid configurations exist, one may conclude in reference to the guiding theory of this thesis, the more closely related is the institutional approach to the contingency theory of organizations (Donaldson, 2001a: 144).

¹⁰¹ While some contributions provided an image tantamount to radical, quick, quantum leap change (e.g., Meyer et al., 1993: 1177-1178; Miller, 1986: 236; Miller & Friesen, 1980b: 593-594), most authors argued in favor of more gradual, ongoing, incremental change processes (e.g., Cooper et al., 1996: 624; Denis et al., 1996: 679-682; Gray & Clegg, 2004: 6-9; Hinings et al., 1999: 143-151; Pinnington & Morris, 2003: 97; Powell et al., 1999: 8-16).

5.5 Revisit of the objectives and the research question

This thesis has pursued a twofold objective (section 1.4). First and foremost, it aimed to answer the research question:

Which factors account for the diversity in the organizational structure of management consulting firms?

The results of this thesis have shown that size and task uncertainty are associated with the organizational structure of management consulting firms (section 4.4). One interpretation could be that size and task uncertainty are factors that exert considerable influence on different constructs of structure. Along these lines, proponents of structural contingency theory would claim that the contingencies size and task uncertainty determine organizational structure. They could argue that some of the relationships, for example, between size and structural differentiation, task uncertainty and specialization, and between size and centralization are so strong, that there remains little room for other factors to intervene. However, the advocates' view needs to be put in perspective. While the findings point in this direction and support their arguments, claims about cause and effect, strictly speaking, cannot be derived from the findings of this thesis (section 5.2).

Second, this thesis has not only addressed the important, yet relatively under-researched field of organizational structure in management consulting. It has also tested the new, parsimonious model of structural contingency theory empirically. The findings do not lend support to the model but rather to classical contingency theory of organizations. This thesis has thus provided a contribution to organization theory in general and contingency theory of organizations in particular. In addition, its findings have implications for practitioners as outlined in the next section.

5.6 Practical implications of the findings

This thesis has found strong associations between organizational size and to a lesser degree task uncertainty with constructs of organizational structure in management consulting firms. In particular the first aspect holds interesting implications for practitioners.

It has been mentioned in section 5.1.3 that the profitability of management consulting firms is widely independent of their size. Consultancies may consciously opt to remain rather small and to work in an attractive niche. Yet, many of the consulting firms have proclaimed growth in size as one of the major goals they strive for (e.g., Kubr, 2002: 633-634; von Keller & Lorentz, 1999: 370). Among their reasons might have been the perceived firm attractiveness to new recruits. A growing firm promises more career options, a better working climate, and more diversified work assignments, and these characteristics attract talent. In addition, revenue growth is commonly monitored to gauge consultancies' success (e.g., Kennedy, 2004: 155-156; Lerner, 2003; Lünendonk, 2004a: 17-26; 2004b: 21-30). Practitioners and scholars alike have argued that consulting firms prosper through continuous and aggressive growth (e.g., Cooper et al., 1997: 31; Schwenker, 2004: 69).

Growth is no panacea, however. There are several problems directly associated with the growth of a consulting firm including, for example, the control of increasing heterogeneity (Müller-Stewens et al., 1999: 81-82) and effective knowledge management (Galunic & Weeks, 1999: 4). Additional and more indirect problems follow from the results of this thesis.

Consultancies most likely have to adjust their organizational structure as they grow in size. There seems to be, at a minimum, a strong link between size and structure, if not an imperative of the former on the latter. The levels of structural differentiation and formalization tend to increase, while centralization decreases with size. It appears doubtful that consulting firms can escape this general pattern. Higher leverage ratios, more support units, more functional practices, and more levels of consultants appear particularly likely with

an increase in size. Consultants need to be prepared for more formalized processes and procedures. They will have to delegate more decisions further down the hierarchy, for example, with regard to staffing, promotions, and recruiting. One may speculate that the observed trend from the P²- towards the MPB-archetype (section 5.4) is largely driven by firms' growth. While a P²- type structure has served them well in the early stages of their development, a MPB-type structure may facilitate the management of larger ventures. Overall, consultants need to anticipate the changes in organizational structure that will very likely become necessary as their firms grow in size.

While such adjustments are a challenge in their own, they only represent an intermediate step. More bureaucratic structures with higher formalization and lower centralization have been found to negatively impact job satisfaction and firm commitment of professionals such as medical doctors (e.g., Haywood-Farmer & Stuart, 1990: 346). Similar effects are likely to occur in management consulting as well. Moreover, an organizational structure characterized by higher leverage ratios, more levels of consultants, and more formalized processes, among other aspects, may not work well for the type of consulting service traditionally provided by a consultancy. The firm may need to be small to provide a particular consulting service effectively and efficiently. As it grows in size, a consultancy's ability to compete for this type of service could be diminished in favor of smaller competitors. This argument is in line with the recommendations of Maister (1982: 16-17, 26; 1997a: 4-5) and others who in his wake have proposed a match between a consulting firm's organizational structure and the type of service it provides. It may be one reason why some of the large consultancies have entered others businesses such as outsourcing and venture capital (Riemensperger, 2004: 86-93; Wohlgemuth, 2003). As a result, practitioners not only need to meet the demands for changes in the organizational structure of their firms, they also have to consider other challenges in their aftermath.

This is not to argue against growth in general. Many consulting firms have provided success stories of growth and prosperity. However, lesser

known reports describe how consultancies struggled with growth or even vanished as they failed to cope with its effects (e.g., Frigo & Litman, 2004; Peyus, 1999; Williamson & Yoshino, 1994). Even very successful consulting firms, such as Bain & Co., at some point in time were seriously threatened by a mismatch between organizational structure and increased size. Bain's former Chief Executive Tierney described the situation of his firm in late 1980s as follows: "Bain had outgrown its organization [structure]. Although there were more than fifty 'vice presidents', nominally a partner-level title, the ownership was concentrated in the hands of seven founders. Vice presidents were largely excluded from strategic decisions and often barely informed after the fact. Four layers separated the CEO from a new vice president, who had no formal way to participate effectively in firm governance." (Lorsch & Tierney, 2002: 136). This thesis has provided some insights on why consulting firms may have struggled with growth and what they might have done to succeed.

6 Conclusion

6.1 Summary of the research study and its findings

This thesis has been concerned with the diversity in the organizational structure of management consulting firms. The diversity has evolved as an outcome of two decades of dramatic expansion of the consulting industry and its stagnation since 2001 (section 1.1.1). The way in which consultancies are structured has far reaching implications regarding their overall business and employment models (section 1.1.2). In addition, the organizational structure of consultancies has been outside the focus of traditional organization theory research. Little explanation has been offered for the phenomenon of organizational diversity in consulting (section 1.1.3). Therefore, this thesis has investigated the factors accounting for the diversity in the organizational structure of management consulting firms.

The contingency theory of organizations as one of the classical schools of thought in organization theory (section 2.2) was selected as guiding theory of the research study. Broadly speaking, contingency theory argues that organizational structure needs to be adapted to the values of contingency factors (section 2.3). The recently developed parsimonious model of the theory links the contingencies of organizational size and task with structural differentiation, specialization, centralization, and formalization as constructs of organizational structure (section 2.5). It represents an expansion of the classical structural contingency theory as it integrates contingency factors that for the most part have been considered separately (section 2.4). The model was used to derive seven hypotheses about relationships between size, task uncertainty, and the structural constructs (section 2.7). The hypotheses were then tested empirically in a management consulting context.

Cross-sectional data was collected for a sample of 33 large and medium-sized, non-in-house consulting firms. The consultancies varied with regard to their age, legal form, national origin, ownership, service offering, and size (sec-

tion 3.4.1). Primary, qualitative data on task uncertainty and organizational structure were gathered during a series of personal interviews (section 3.4.2). Secondary, quantitative data on firm size were mostly taken from industry reports and firm publications (section 3.4.3). Over 90 percent of the interviewees were experienced consultants, more than one third held CEO, board member, or partner-level positions. They represented offices (section 1.3.3) from the German-speaking market of Germany, Austria, and Northern Switzerland. The interviews were taped and transcribed before they could be analyzed with QDA software NVivo. More than 870 pages of interview transcripts were repeatedly reviewed and manually coded by subject matter. Subjects were organized in a tree structure below the two parent level nodes for task uncertainty and organizational structure (section 3.5).

The analysis of qualitative data yielded 9 measures of task uncertainty that were useful in the sense that different categories of consulting firms could be identified (section 4.1.1). In total 20 measures were found for organizational structure (section 4.2). Some of the measures corresponded with topics identified before the interviews (sections 3.2.1 and 3.3), while others emerged during data collection and analysis. The number of consultants was selected as the appropriate measure of organizational size (sections 3.2.2 and 4.1.4). Based on these measures, for each consulting firm a value was obtained for task uncertainty, organizational size, structural differentiation, specialization, centralization, and formalization (sections 3.6, 4.1.2, 4.1.4, and 4.2). The consultancies' values for these concepts were plotted in scattergrams and used for statistical analysis including regression in order to test the hypotheses (sections 3.7 and 4.3).

The findings lent support to four of the seven hypotheses, whereas three hypotheses were not supported (sections 4.3 and 4.4). Significant positive associations could be identified between size and structural differentiation (H1), specialization and task uncertainty (H4), and between size and formalization (H7). A negative relationship has been found between size and centralization (H3). The proposed associations between size and specialization (H2), size and

task uncertainty (H5), and between task uncertainty and formalization (H6) did not receive support from the data.

Overall, the results did not uphold the recent parsimonious model but rather classical contingency theory of organizations (section 5.3). Size and to a lesser degree task uncertainty were found to be closely associated with the organizational structure of management consulting firms. The two contingency factors might be determinants of structure, although conclusions about cause and effect cannot be drawn from this research study (section 5.2). In addition to classical structural contingency theory, the findings on organizational structure have also been found to be consistent with the notion of the P²- and the MPB-archetype identified by institutional theorists in accounting, law, and other professional services (section 5.4).

6.2 Options for future research

Section 5.2 has listed a number of choices and trade-off decisions that had to be made with regard to the design and execution of the research project. As Miles & Huberman (1994: 27) pointed out "as much as you want to, you cannot study everyone everywhere doing everything". The choices and similarly some of the results provide starting points for future research. In addition, completely different approaches may be taken to study the organizational structure of management consulting firms.

The research design required the definition a non-random sample in accordance with several sampling criteria. Further research may refine these criteria. For example, this thesis has focused on the German-speaking areas of Germany, Austria, and Northern Switzerland. It could be replicated with different geographic foci. While it has been argued that consulting markets in different regions are similar to each other (section 5.2), future research could investigate whether or not this holds true for the organizational structures of management consultancies as well. In particular a comparison of this study's

findings with those of research in a completely different cultural background should provide rich insights on organizational structure similar to the study by Donaldson (1986) in Western and East Asian economies.

Future research studies should not only alter sampling criteria. They might also attempt to include organizational performance more explicitly. Perhaps elsewhere national laws require consulting firms to publish financial data so that these are available for scientific analysis. In addition, longitudinal research with repeated data collections could provide valuable findings on how the organizational structures of consulting firms develop and change over time. It could also help to better understand whether or not changes in the contingencies predate and possibly cause changes in structure (section 5.2).

The results of this thesis show considerable associations of organizational size with structural differentiation and centralization. There also seems to be a positive relationship between size and formalization, however, to a lesser degree than in the other two cases. In contrast, many research studies have identified very strong positive relationships between size and formalization. The deviation could be due to peculiarities of the management consulting industry. It could also be caused by the design of this research study or the particular selection of consultancies included in its sample. Closely related is the discovered split in formalization measures. While the more externally oriented measures seem to be closely related to task uncertainty, the more internally oriented measures appear to be more associated with size. This phenomenon as well as whether or not the relationship between size and formalization in consulting is different than in other industries should be analyzed in future research.

The results also indicate a positive relationship between size and task uncertainty in management consulting. The proposed linkage between the size of a consultancy and its risk adversity as a determinant of task uncertainty discussed in section 5.3 requires further investigation.

Similarly, it has been argued that small firms tend to have small projects while large firms tend to have large projects (section 5.1.1). The claim should be put to test. If it is supported, the number of simultaneous projects consultants work on is seriously challenged as a measure of specialization. As a result, the assessment of specialization could be sharpened and so then could the picture about the relationship between size and specialization. In addition, there has been a split in specialization measures similar to the one described above for formalization. Some measures have been found to be positively related, others negatively, and still others unrelated to size. The overall findings hinted a negative relationship between size and specialization. Again, the phenomenon could be caused by peculiarities of the consulting industry, the design of the research study, or the particular selection of consultancies.

Another result of this thesis is the identification of measures of task uncertainty, structural differentiation, specialization, centralization, and formalization in a management consulting context. Future research may employ these measures for deductive, hypothesis testing on a much larger sample of consultancies. It may, for example, use a questionnaire for a mail or online survey. This data collection technique would allow to contact several hundred consulting firms simultaneously.

Section 2.2 has listed several organization theories apart from the contingency theory of organizations. Some of the theories such as institutional theory (section 5.4) might be applied to better understand the phenomenon of differing organizational structures of management consulting firms. Some theories such as constructivist approaches (Table 1) propose a more subjectivist view to the study of organizations which might prove fruitful and yield rich insights. Klein (2002) in his investigation of in-house consultancies has provided a starting point for this type of research. The different theories might investigate factors other than size and task as drivers of organizational structure. They might also conceptualize structure by concepts other than structural contingency theory.

This thesis has provided a basis that allows for more deductive research on organizational structure in management consulting as briefly outlined

above. However, many more aspects need to be explored in an inductive, qualitative way. Other researchers should feel encouraged to conduct qualitative research to study professional service firms in general and management consultancies in particular, despite its inherent arduousness and challenges. The editors of the *Academy of Management Journal* – and their view shall be strongly affirmed at this point in time – have summarized that “Good qualitative research is difficult and challenging to undertake. Many scholars believe good qualitative research is more difficult and time consuming to create than good quantitative research. Qualitative research often involves fieldwork, and the word ‘work’ is important here.” (Rynes & Gephart, 2004: 460-461).

Appendix

Appendix I – Interview topic list¹⁰²

I. Consulting service

- 1) Market
 - a) Service offering
 - Industries
 - Functional areas
 - b) Customers
 - Customer size (employees, revenues)
 - Private companies/public sector
- 2) Typical project
 - a) Marketing approach
 - Personal and individual/standardized
 - Target of initiative (single company/group of firms)
 - Advertisement
 - Invitation for tender
 - Repeat business
 - b) Contract negotiation and closure
 - Binding, written/oral contract
 - Standard/individual contract
 - Process and duration of negotiations
 - Ex ante determination of success or performance measures
 - Compensation model (time and expenses, fixed price, success-based)

¹⁰² Translation of the German original that was used for interviews.

- c) Start of project
 - Structure of project team
 - Composition of project team
 - Level of project planning (definition of project goals and tasks, Gantt-charts, risk analyses, network plans)
 - Teambuilding activities
- d) Project execution
 - Coordination/readjustment of project focus
 - Share of time working with clients
 - Knowledge database (detailed descriptions of project set-up, solutions)
 - Use of experts
 - Testing and adjusting of recommendations with clients
 - Number of simultaneous projects (senior consultants, managers, junior consultants)
 - Exchange of team members
 - Involvement in implementation
 - Planned return for critical phases
- e) Project conclusion
 - Success measurement
 - Client feedback
- f) Duration of phases/overall project
- g) Participation in all phases (senior consultants, managers, junior consultants)

II. Organizational structure

- 1) Hierarchical levels and their responsibilities
 - a) Senior consultants
 - Country manager (office complex, firm governance)

-
- Senior Partners (business unit, firm governance, CRM with important clients)
 - Partners (numerous projects, CRM)
- b) Managers
- Multi-project manager
 - Project manager
- c) Junior consultants
- Experienced consultant (multiple project segments)
 - Consultant (single project segment)
 - Business analyst (specific problem within a project segment)
- 2) Leverage
- a) Actual
- Number of senior consultants
 - Number of managers
 - Number of junior consultants
- b) Optimal leverage
- 3) Industry/functional practice groups
- 4) Existence/responsibility/size/importance of support units (non-consulting staff)
- a) Client marketing
- b) Finance/accounting
- c) IT
- d) Graphic design
- e) Research
- f) Personnel management (recruiting, staffing, promotions/compensation/terminations, training/mentoring)
- 5) Personnel development
- a) Training (on-the-job, off-the-job)
- b) Mentoring
- c) Focusing of consultants/new hires

III. Background information

- 1) Consultancy
 - a) Foundation year of overall firm/local office
 - b) Legal form of local office
 - c) De facto management of local office
 - d) National origin
 - e) Firm ownership
 - f) Local office representative (size, service offering, organizational structure)
- 2) Interviewee
 - a) Job position
 - b) Tenure (firm, consulting industry)
 - c) Age
 - d) Educational background
- 3) Interview
 - a) Date
 - b) Time
 - c) Location

Appendix II – Example of manual coding in NVivo

13 Interview final - Document Browser

Browser: Document Edit View Format Links Coding

13 Interview final

Normal Times New Roman 12 Black

großen Wettbewerber. Da müssen wir uns einfach auch differenzieren und Kompetenzen aufbauen. Also das ist einmal die Marktfokussierung, bezogen auf Branchen sind wir relativ breit aufgestellt. Das geht von Lebensreise als großer Bereich über Telekommunikation, Tourismus, Logistikanbieter bis in einen großen Bereich, Uthales, Energieversorgung, Technology, Chemie, Bauwirtschaft. Im Prinzip können Sie alle großen deutschen Industrien nehmen. Da sind wir vertreten. Man kann es auch so zusammenfassen: Immer dort, wo es sich um erklärungsbedürftige Produkte handelt, sind wir sehr stark. Wenn Sie auf die Bereiche gehen, wie fast-moving Consumer Goods, da sind wir auch, aber nicht so stark, wie in den anderen Bereichen. Was hatten Sie noch gefragt?

Welche Kunden, sind es Kleinunternehmen? Sind es immer Privatunternehmen?

Also hauptsächlich Privatunternehmen, haben Kunden. Quasi keine kleinen Unternehmen. Kleinunternehmen nicht aufgebracht werden, großordnungsgemäß. Aber hauptsächlich

Haben Sie auch Projekte mit der Öffentlichkeit? Haben wir auch gemacht, ja.

Wenn wir uns ein Projekt anschauen von typischerweise in Kontakt mit den Kunden. Liefert das Ganze auf personeller Ebene, weil man sich kennt? Sind es Gruppen von Unternehmen, die alle z. B. irgendein Problem haben, weil die Regulierung oder so etwas wo Sie sagen das ist dann unser Fokus? Mäcken Sie

Industrie +
Product +
Kunde 33
Kunde 33
Kunde 33
Länge +
Kunde 33
Länge +, Small to medium +,
Public sector +
First contact, Repeat business +, Section 11
All Nodes Displayed

13 Interview final - Codes

Show: 13 Interview final - Codes
Scope of coding: Document

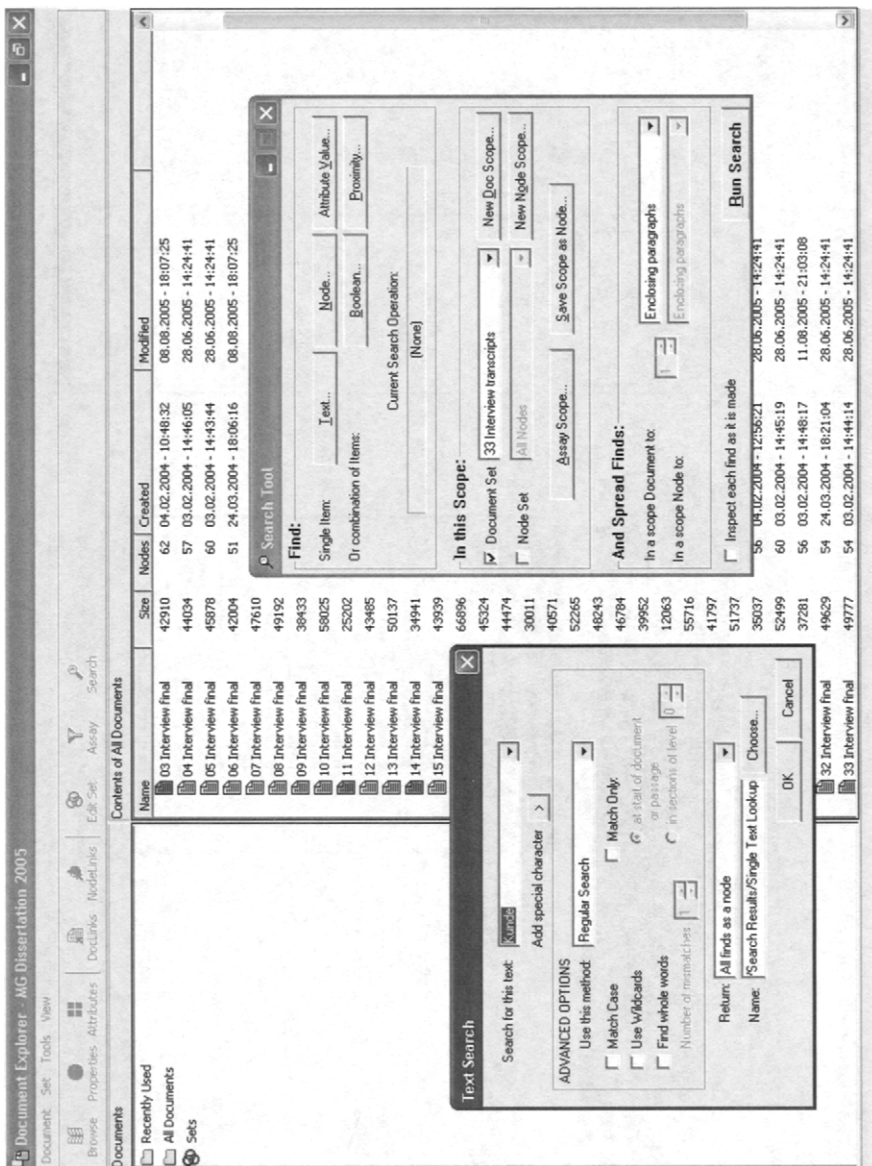
- Execution
- Project focus +
- Partner involvement +
- Implementation work +
- Industry focus
- Industries +
- Public sector +
- Functional focus +
- Repeat business -

Code: Fred
URCode

Working Set
Add Node(s)
Remove All

In-Vivo / Ask uncertainty
Section: 0 Paragraph: 3 Coding:

Appendix III – NVivo document explorer and search tool



Appendix IV – Node trees in NVivo

a) Task uncertainty

The screenshot displays the NVivo interface for a node tree titled 'Task uncertainty'. The left pane shows a hierarchical tree structure with nodes such as 'Free (1)', 'Trees (95)', 'Search Results', 'Task uncertainty', 'First contact', 'Client approach +', 'Invitation for tender -', 'Contract', 'Compensation', 'Time + expenses +', 'Fixed price +', 'Success fee +', 'Duration of negotiations -', 'Start of project -', 'Level of detail planning -', 'Execution', 'Project focus +', 'Partner involvement +', 'Implementation work +', 'Industry focus', 'Industries +', 'Public sector +', 'Functional focus +', 'Repeat business -', 'Service extensions +', 'Production', 'Product +', 'Similar to product +', 'Service-Dienstl-Berat-Angeb -', and 'Organisational structure'. The right pane shows a table with columns for Title, No., Passages, Created, and Modified.

Title	No.	Passages	Created	Modified
🔍 First contact	10	43	11.02.2004 - 10:03:39	19.02.2005 - 16:16:53
🔍 Contract	20	50	11.02.2004 - 10:02:57	07.09.2004 - 11:23:02
🔍 Start of project -	25	49	16.02.2004 - 19:07:08	27.06.2005 - 23:03:39
🔍 Execution	30	47	11.02.2004 - 10:05:03	08.08.2005 - 17:56:03
🔍 Industry focus	100	0	09.02.2004 - 16:44:48	08.02.2005 - 19:04:03
🔍 Functional focus +	110	41	18.02.2004 - 17:27:28	19.02.2005 - 16:59:29
🔍 Repeat business -	120	43	11.02.2004 - 10:03:39	28.06.2005 - 14:04:04
🔍 Service extensions +	220	11	25.02.2004 - 10:16:27	11.08.2005 - 21:03:08
🔍 Production	230	0	16.02.2004 - 19:31:03	28.06.2005 - 14:08:31

Below the table, the text reads: 'No coding Children: 9 (No description)'. At the bottom of the interface, the status bar shows 'Tree Node - (3) / Task uncertainty'.

b) Organizational structure

The screenshot displays the 'Node Explorer' interface for 'AMG Dissertation 2005'. The main area shows a tree view of nodes under 'Nodes in /Organizational structure'. The nodes include:

- Task uncertainty
- Organizational structure
 - Structural differentiation
 - Consultant levels and leverage +
 - Support units +
 - Industry practices +
 - Functional practices +
 - Expert positions +
 - Sales positions +
 - Admin partners +
 - Specialization
 - Consultant focusing
 - As consultant +
 - New hires +
 - Simultaneous projects +
 - Exchange of consultants -
 - Firm management -
 - People management
 - Centralization
 - Client contracts -
 - Corp governance +
 - Recruitment +
 - Staffing +
 - Prom-Comp-Termin +
 - Formalization
 - Client contracts +
 - Customer feedback -
 - Knowledge management +
 - Mentorship +
 - Up-or-out and similar -
 - Background info
 - Firm + interviewer +

At the bottom right, a text box contains: "No coding. Children: 4 (no description)".

Title	No.	Passages	Created	Modified
Structural differentia...	50	0	29.07.2004 - 11:34:23	28.06.2005 ...
Specialization	60	0	04.08.2004 - 11:24:00	28.06.2005 ...
Centralization	70	0	29.07.2004 - 11:34:59	28.06.2005 ...
Formalization	80	0	04.08.2004 - 11:23:10	28.06.2005 ...

Appendix V – Task uncertainty values

Cate- gories	A ...											
	A ... E	A ... C	A ... C	A ... E	A ... D	A ... E	A ... C	A ... C	A ... C	A ... C		
Measure	Marketing approach	Compensation	Shift of project focus	Partner involvement in project execution	Consultancy involvement in implementation	Industry focus	Functional focus	Service extensions	Productization			
	Sec- tion	Firm	4.1.1.2	4.1.1.4	4.1.1.7	4.1.1.8	4.1.1.9	4.1.1.10	4.1.1.11	4.1.1.13	4.1.1.14	Task uncer- tainty value
1	B	A	A	A	A	D	A					4.4
2	A	C	C		D	D	C			C		1.7
3	D	A	A	B	B	E	B			B		3.3
4	C	A	C	D	C	A	B			C		2.8
5	D	B	B	C	D	D	C	C		B		2.1
6	C	B	C	B		D	A					3.0
7		B	C	C	D	B	A	C		B		2.6
8	A	A	B	C	A	B	A					4.3
9	C	B		B	C	A	B			A		3.6
10	E	B	C	D	D	B	B			B		2.3
11	D	B		B	D	D	C	B		C		2.1
12	C	B	B	D	C					B		2.7
13	D	C	A	C	B	B	C					2.8
14	C	B	A	A	C		A			C		3.5
15	B	A	B	A		B	B			C		3.6
16	D	B	C	B	D	D	C			B		2.1
17	E	B	A	E	D	B	C	C		B		2.2
18	B	B	A	D		A	C			B		3.3

Cate- gories	A ... E	A ... C	A ... C	A ... E	A ... D	A ... E	A ... C	A ... C	A ... C	A ... C	Measure	Sec- tion	Firm	Task uncer- tainty value
												4.1.1.2	4.1.1.4	
											Marketing approach			
											Compensation			
											Shift of project focus			
											Partner involvement in project execution			
											Consultancy involvement in implementation			
											Industry focus			
											Functional focus			
											Service extensions			
											Productization			
19	C	A	A	A	C	E	B					A		3.7
20	C	A	B	E			B	B	C			B		2.9
21		A		D			C	C				C		2.4
22	C	A	B	C	C		B	B						3.3
23	B	A	A	A	B		B	B	B					4.1
24	B	B	A	B	B		B	A						4.1
25		C	C	B	C		D	B	B			C		2.2
26	B	B	A	B	B		B	B						3.8
27	C	B	B	E	C		C	A						2.9
28	B	C	B	B	B		C	A				C		3.1
29	D	A	C	B	C		E	C				C		2.2
30	C	A	C	D	D		D	B				B		2.5
31	B	A	A	B	A		B	A	A					4.6
32	C	C		A			D	B						2.8
33	B	A	A	B	A		C	A						4.4

- 243 out of 297 observations available
- 82 percent completion rate
- 7.4 observations on average

Appendix VI – Expressions used by the interviewees for the buyers of consulting services

Firm	Total words	Number of uses of ...			Share of ...		
		'Kunde' ¹⁰³	'Klient' ¹⁰⁴	'Mandant' ¹⁰⁵	'Kunde'	'Klient'	'Mand.'
1	7,028	23	0	0	100%	-	-
2	9,236	38	2	0	95%	5%	-
3	6,747	30	5	0	86%	14%	-
4	6,744	14	0	0	100%	-	-
5	7,504	34	0	0	100%	-	-
6	6,562	44	0	0	100%	-	-
7	7,786	36	0	1	97%	-	3%
8	7,699	34	2	0	94%	6%	-
9	5,786	32	0	2	94%	-	6%
10	8,878	44	0	0	100%	-	-
11	3,693	8	1	0	89%	11%	-
12	7,162	29	5	0	85%	15%	-
13	7,877	35	0	0	100%	-	-
14	5,243	21	0	0	100%	-	-
15	6,754	24	0	0	100%	-	-
16	10,301	46	0	0	100%	-	-
17	7,207	63	0	0	100%	-	-

¹⁰³ The numbers include all uses of the German expression 'Kunde' as well as the English equivalent 'customer'. They exclude meanings other than the buyers of consulting services, for example, a bank's customer relationship management as the subject of a consulting project conducted in a bank.

¹⁰⁴ The numbers include all uses of the German expression 'Klient' as well as the English equivalent 'client'. They exclude meanings other than the buyers of consulting services, for example, the clients of a bank that is served by a consultancy.

¹⁰⁵ The Oxford dictionary translates both 'Mandant' and 'Klient' as client. The German term 'Mandant' is often used in a legal context.

Firm	Total words	Number of uses of ...			Share of ...		
		'Kunde' ¹⁰³	'Klient' ¹⁰⁴	'Mandant' ¹⁰⁵	'Kunde'	'Klient'	'Mand.'
18	7,459	57	0	0	100%	-	-
19	4,573	4	3	0	57%	43%	-
20	6,223	31	0	0	100%	-	-
21	8,332	12	0	10	55%	-	45%
22	7,763	55	0	0	100%	-	-
23	7,404	32	1	0	97%	3%	-
24	6,083	20	3	0	87%	13%	-
25 ¹⁰⁶	NA	NA	NA	NA	NA	NA	NA
26	8,677	8	45	0	15%	85%	-
27	6,669	15	8	0	65%	35%	-
28	8,362	49	2	0	96%	4%	-
29	5,278	16	2	0	89%	11%	-
30	8,591	29	4	0	88%	12%	-
31	5,468	3	30	0	9%	91%	-
32	8,307	35	0	0	100%	-	-
33	7,697	10	35	0	22%	78%	-

¹⁰⁶ Interview 25 was not recorded on audio tape but captured through extensive written notes as outlined in section 3.4.2. Accordingly, the language used during interviews can be analyzed for only 32 out of the 33 interviews.

Appendix VII – Organizational size values for different measures¹⁰⁷

Firm	Size value for number of consultants	Size value for number of employees	Size value for annual consulting revenues
1	56	59	74
2	1	1	1
3	16	18	16
4	24	23	17
5	18	15	11
6	10	9	6
7	390	350	221
8	91	131	124
9	6	5	3
10	112	101	57
11	6	5	8
12	501	450	308
13	20	20	16
14	17	14	9
15	3	3	2
16	9	9	5
17	10	9	6
18	501	450	222
19	3	3	2

Firm	Size value for number of consultants	Size value for number of employees	Size value for annual consulting revenues
20	38	35	17
21	25	23	19
22	835	750	484
23	4	4	3
24	116	122	167
25	40	35	59
26	53	51	92
27	56	61	95
28	32	35	39
29	39	38	25
30	14	12	10
31	183	225	311
32	10	9	9
33	37	36	65

Correlation coefficients: (as defined in section 3.7)	$\rho = 0.997$
	$\rho = 0.920$

¹⁰⁷ For confidentiality reasons, size values being normalized actual figures are presented (section 3.2.2). The normalization does not affect the results of this thesis.

Appendix VIII – Structural differentiation values

Measure	Hierarchical levels among consultants	Leverage ratio	Support units	Industry practices	Functional practices	Expert positions	Sales positions	Administrative partners	Structural differentiation value
	Section	4.2.2.1	4.2.2.2	4.2.2.3	4.2.2.4	4.2.2.5	4.2.2.6	4.2.2.7	
Firm	4.2.2.1	4.2.2.2	4.2.2.3	4.2.2.4	4.2.2.5	4.2.2.6	4.2.2.7	4.2.2.8	Structural differentiation value
1	A	B	A	A	A	B		C	3.9
2	C	C	C	C	C	B			1.3
3	B	B	B		A		C	C	2.7
4	B	A	B	B	A		C	C	3.0
5	C	A	B		A			A	3.8
6	B	C	B	A	B		C	C	2.4
7	A	A	A	A	A	B		A	4.7
8	B	B	A			A		A	4.2
9	B	C							2.0
10	A	A	A	A	A	B	A	C	4.3
11	B	C	A	A		A		A	4.0
12	A	A	A	A	A		C	A	4.4
13	B	B	B	A		C			3.0
14	B	B	B					A	3.5
15	C	C	C			C	C		1.0
16	B	B	C				A	B	3.0
17	A	B	B	B		B	B		3.3
18	B			A		B	A		4.0
19	C	C	C			C		C	1.0
20	C		B	B		B	A		3.0
21	B	B	A	B		B	A	B	3.6

Section	Measure	Hierarchical levels among consultants	Leverage ratio	Support units	Industry practices	Functional practices	Expert positions	Sales positions	Administrative partners	Structural differentiation value
	Firm	4.2.2.1	4.2.2.2	4.2.2.3	4.2.2.4	4.2.2.5	4.2.2.6	4.2.2.7	4.2.2.8	
22	B	B	A	A	A	B	B	C		3.5
23	C	C	B				C			1.5
24	A	A	A	A	A	B		A		4.7
25	B	B	A					B		3.5
26	B	B		A	B	B	C	C		2.7
27	B		A	A	A	B		C		3.7
28	B	B	A	A	A	B	C			3.6
29	B	B	A	C	A	B				3.3
30	B	A	A		A			B		4.2
31	B		A			A		C		3.5
32	C	B		B	A			C		2.6
33	B	B	A			B		C		3.0

- 187 out of 264 observations available
- 71 percent completion rate
- 5.7 observations on average

Appendix IX – Specialization values

Firm	Measure		Specialization value
	4.2.4.1	4.2.4.2	
1	C	C	1.5
2	A	A	5.0
3	A	B	3.0
4		B	3.0
5	A	B	4.2
6	B	B	3.5
7		B	4.3
8	B	C	3.0
9	B	B	2.5
10	B	B	3.8
11	B	B	2.3
12			3.0
13	B	C	2.2
14		C	2.3
15		A	5.0
16		B	4.0
17		B	3.5
18	A		3.5
19	C	B	2.2
20		A	4.0

Firm	Measure		Specialization value
	4.2.4.1	4.2.4.2	
21	A	B	3.0
22	A		3.0
23	B		3.5
24	A		3.0
25	B	B	3.0
26		B	3.0
27	B		2.5
28	A	B	3.0
29	A		5.0
30		C	2.5
31	B		2.0
32		A	4.3
33	B	C	2.0

- 120 out of 165 observations available
- 73 percent completion rate
- 3.6 observations on average

Appendix X – Centralization values

Measure	Recruitment	Staffing	Performance-related decisions	Centralization value
Firm	4.2.6.3	4.2.6.4	4.2.6.5	
1	C	B	C	1.7
2	B	A		4.0
3		C		1.0
4	B	B		3.0
5	B	B	B	3.0
6	A		A	5.0
7	C	C		1.0
8	C	C	C	1.0
9	A	A	A	5.0
10		B		3.0
11	A	A		5.0
12		C		1.0
13	A	A		5.0
14	B	B	B	3.0
15	A	B	A	4.3
16	A	B	A	4.3
17	C	B	C	1.7
18	C			1.0
19	B	A		4.0
20	B	C		2.0
21	C	B	C	1.7

Measure	Recruitment	Staffing	Performance-related decisions	Centralization value
Firm	4.2.6.3	4.2.6.4	4.2.6.5	
22	B	C		2.0
23	B	B		3.0
24		B		3.0
25	B	C		2.0
26	C	C	B	1.7
27	C	C	C	1.0
28	B	B	B	3.0
29	B	B		3.0
30	B	A		4.0
31	C	C	B	1.7
32	A	A	A	5.0
33	B	C	B	2.3

- }
- 76 out of 99 observations available
 - 77 percent completion rate
 - 2.3 observations on average

Appendix XI – Formalization values

Section	Firm	Measure	Client contract	Knowledge management	Mentorship	Up-or-out – training – performance evaluations – recording of project history	Formalization value
		4.2.8.1	4.2.8.3	4.2.8.4	4.2.8.5		
1			B	A	B	3.7	
2	A	B	C	C	2.5		
3	B	B	B	C	2.5		
4	A	A	A	C	4.0		
5	A	C	A	C	3.0		
6			C	C	1.0		
7	B	C	B	C	2.0		
8	C	B	A	B	3.0		
9	B	B	B	C	2.5		
10	B	A	B	B	3.5		
11	A		A	C	3.7		
12	A	A		B	4.3		
13	C		C	C	1.0		
14	C		C	C	1.0		
15	B	B	C	B	2.5		
16	A	A	A	C	4.0		
17	A		B	B	3.7		
18	A	A	C	B	3.5		
19	C	B	A	B	3.0		
20	A	B	C	B	3.0		

Section	Firm	Measure	Client contract	Knowledge management	Mentorship	Up-or-out – training – performance evaluations – recording of project history	Formalization value
		4.2.8.1	4.2.8.3	4.2.8.4	4.2.8.5		
21	A	A	A	B	4.5		
22	A	A	A	A	5.0		
23	B	C	A	B	3.0		
24	B	B	A	A	4.0		
25	A		A	B	4.3		
26	C	B	A	A	3.5		
27	B	B	A	A	4.0		
28	B	B	A	B	3.5		
29	A	B	B	A	4.0		
30	A		A	B	4.3		
31	B	B	A	B	3.5		
32	C		A	B	3.0		
33	C	B	A	B	3.0		

- }
- 121 out of 132 observations available
 - 92 percent completion rate
 - 3.7 observations on average

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