The impact of complementarities between organization and strategy on the performance of law firms

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Introduction

The topic of interaction among activity choices and the respective effect on the performance of firms has received increased attention in recent years (Porter & Siggelkow, 2008). Several streams of research have evolved in this area of interest. For example, approaches of configurations (Miller, 1986) and contingency as well as interactions studies sought to explain the relationship between organizational design and performance. However, the results of these approaches failed to unambiguously link patterns of design choices to firm performance (Short, Payne, & Ketchen, 2008).

On the one hand, configurations tried to explain performance effects of organizational design from a macro-perspective as the whole system of organizational, strategic and environmental elements are investigated. These studies commonly propose that strategy and organization are shaped by a central goal or guiding principle (Miller, 1996; Meyer, Tsui, & Hinings, 1993; Miles, Snow, Meyer, & Coleman, 1978). On the other hand, micro-level interactions of individual design choices are linked to performance. Macro- as well as micro-level approaches revealed inconclusive results. Ketchen and his co-authors (Ferguson & Ketchen, 1999; Short, Payne, & Ketchen, 2008) show that a performance effect of configurations cannot be neglected but their predictive power is limited as the interdependencies of system elements have not been sufficiently investigated (Short, Payne, & Ketchen, 2008). The focus of micro-level approaches, on the contrary, is too narrow and might overlook important interrelationships with other organizational elements (Cappelli & Sherer, 1991). Consequently, a mid-range phenomenon that provides the possibility to investigate systems of individual elements interactions might be able to bridge the described weaknesses of macro- and micro-level approaches (Hitt, Beamish, Jackson, & Mathieu, 2007).

Such a meso-level phenomenon is the notion of complementarity. In its most general form, complementarity denotes a beneficial interplay of the design elements of a system (Milgrom & Roberts, Complementarities and systems: Understanding Japanese economic organization, 1994). With the aid of the complementarity perspective organizations can be modelled as systems of individual organizational and strategic elements and the effect of interdependencies between individual elements can be linked to the overall performance of the system (Roberts, 2004). Consequently, it appears suggestive that performance implications of organizational design reveal ties to systems of complementary interactions between organizational elements. In the light of existing research, the question arises which principle provides higher explanatory power for firm performance: An overarching principle such as a central firm goals or systemic effects of micro-level adjustments? As many studies on the topic of macro-level approaches have already been done (Ketchen, et al., 1997), I will focus the study on the second aspect as it reflects the idea of the notion of complementarity.

In a systematic review, Ennen and Richter show that most research on complementarity has been conducted between internal resource elements or between elements of organizational structures and policies. Interestingly, there is only limited research on complementarities between strategy and structure in the empirical management literature (Ennen & Richter, 2009) although many scholars accentuate the importance of a fit between strategy and structure (Chandler, 1962) .To address this gap of research, it is the paper's objective to apply the concept of complementarity to investigate interdependencies between organizational and strategic elements.

The notion of complementarity is strongly influenced by contextual factors (Porter & Siggelkow, 2008). Within industry application seeks to limit unobserved heterogeneity. Consequently, the paper will focus on a particular industry, namely the legal profession. In particular, US based law firms provide an interesting area of research for three reasons. First, “half the battle” (Short, Payne, & Ketchen, 2008) in organizational studies is that conceptual assumptions in law firms can be deducted from existing research (Greenwood & Hinings, 1993). Second, data on US law firms is available from professional data providers (Hitt M. A., Bierman, Shimizu, & Kochar, 2001; Hitt M. A., Bierman, Uhlenbruck, & Shimizu, 2006). Third, recent developments in the environment exert supply and demand side pressures on law firms. The result is an increase in the importance of strategic and organizational considerations to stay competitive (Pinnigton & Morris, 2003).

Accordingly, the research question addressed by this paper is:

Does the notion of complementarity help explain performance differences of law firms?

In order to answer this question I take the following approach:

First, I conceptualize the notion of complementarity in the context of law firms which lead to the main proposition. Second, I develop a set of propositions in a deductive way which describe potential interactions between organization and strategy to classify law firms and their respective organizational strategic characteristics. Third, I outline a potential approach to classify law firms according to their organizational and strategic elements and to analyze the respective performance effects of complementarity between these elements.

The notion of complementarity as an explanatory element of firm performance

The concept of complementarities was first introduced by Edgeworth (1881). Milgrom and Roberts define activities as complements if “doing (more of) any one of them increases the returns to doing (more of) the others” (Milgrom & Roberts, 1995a, p. 15). In their seminal contributions on complementarity they propose that the clustering of characteristics in manufacturing firms is a result of the adoption of a coherent business strategy that exploits complementarities (Milgrom & Roberts, 1990a). In general, activities are considered as complements if the implementation of one practice increases the marginal returns to the other practice (Schmiedeberg, 2008; Schultze & Orlikowski, 2004). The notion of complementarity provides a way to capture the intuitive ideas of synergies and systems effects, that is “the whole is more than the sum of its parts” (Milgrom, Qian, & Roberts, 1991; Milgrom & Roberts, 1995a). It implies that the return of a single input variable does not only depend on the variable itself, but also on other inputs (Guidetti & Mazzanti, 2007). Complementarity thinking follows contingency theory in seeing performance as dependent on “fit” between key organizational variables (Whittington, Pettigrew, Peck, Fenton, & Conyon, 1999). While contingency theory refers to one-to-one comparisons, complementarity theory goes beyond that. It comes close to configuration theory, with its system thinking as it implies that the effect of full systems of practices is larger than the sum of the marginal effects from adopting each practices individually (Whittington, Pettigrew, Peck, Fenton, & Conyon, 1999; Ennen & Richter, 2009). Porter and Siggelkow (2008, p. 44) extend the understanding of complementary relationships as they define two activities as complements if and only if three conditions hold:

1. The marginal benefit of A has to increase with the level of B, and vice versa.
2. Relationship 1 has to hold for all levels of A and B.
3. Relationship 1 has to hold regardless of how a firm configures its remaining activities.

A whole body of literature has developed on the topic of complementarity (Ennen & Richter, 2009). Most studies investigate the relationship between resources, structures and strategies of organizations. In order to focus the description of empirical results on complementarity, I will limit the review of complementarity related studies to those that involve at least one element of organizational structures or strategy.

Interestingly, only few studies find universally positive complementary effects between organizational elements considered and other elements namely, particular resources (Bendoly, Citurs, & Konsynski, 2007; Bresnahan, Brynjolfsson, & Hitt, 2002; Carmeli & Tishler, 2004; Colombo & Mosconi, 1995; Ichniowski, Shaw, & Prennushi, 1997; Laursen & Foss, 2003;

Milgrom & Roberts, 1995a). In contrast, many studies involving at least one organizational element provide mixed results; i.e., they find substitution effects or no effects in addition to any complementary effects among the factors considered. Therefore, the use of organizational practices or structures per se does not appear to result in complementary effects; rather, the emergence of complementarities depends on the specific practices and structures in place and whether they match with other factors. Many studies related to organizational elements investigated relationships among individual workplace and other HR-related practices, such as job rotation, training, incentive schemes and/or profit sharing programs, and decentralized decision-making. Their general finding is that one-on-one relationships between individual practices are often not complementary, but rather additive (Black & Lynch, 2001; Bocquet, Brossard, & Sabatier, 2007; Capelli & Neumark, 2001; Delaney & Huselid, 1996; Macky & Boxall, 2007). These findings do not negate the possibility of complementary effects in high-performance work systems (Laursen & Foss, 2003) rather, they suggest that such complementarities may only emerge once a full set of workplace practices are taken into account. In sum, the empirical literature supports Milgrom and Roberts' assertion that dependent on a fit of the elements the joint contribution of elements of a system taken together is higher than their individual effect. In the following, I will elaborate on this idea by linking interactions of organizational and strategic elements to the performance of law firms.

Complementarity between organizational and strategic elements of law firms

Taken from a timely perspective, the notion of complementarity reveals close connections to the idea of adjustment processes within configurations where the "right" elements are selected in and all other elements are expelled from the system (Miller, 1986). These selection processes can be characterized by micro-level adjustments of the elements of the firm. If the interaction between elements reveals a complementary relationship, the element will be included into the system while elements with substitutive interaction effects are dismissed (Grandori & Furnari, 2008). Firms adjust their strategies, structures and practices and add activities that complement the existing ones. Consequently, firms evolve towards patterns of strategy and organization that are marked by a high degree of complementary elements (Roberts, 2004). Thus, the notion of complementarity is rather focused on clustered sets of interlinked system elements. Milgrom and Roberts (1995a) examined the transition from mass production to modern manufacturing in deeper detail and created a list of attributes that are central to each approach. These elements and their respective interactions are helpful to understand the true complexity of complementarity in practice. All listed attributes have to be taken into consideration when planning to change from one form to the other. According to findings on the notion of complementarity, only a holistic change can effectively transfer all inter-dependencies and guarantee a functioning complementary environment (Whittington, Pettigrew, Peck, Fenton, & Conyon, 1999). If some elements were not transferred, the system would not be able to reap the full benefits of all complementary interconnections and would, hence, face the risk of significant underperformance (Choi, Poon, & Davis, 2008).

The paper will follow up on the approach of Milgrom and Roberts. I argue that within the legal profession coherent patterns of organization and strategy have emerged. But, in recent years, law firms have undergone significant changes or are still in transition (Hitt, Bierman, & Collins, 2007). The legal profession has been viewed as a human profession in which lawyers serve and support the client on legal matters to the best of their knowledge and from a neutral point of view. Compensation is not subject to negotiation as it is based on preassigned rates according to the complexity of the legal matter (Linowitz, 1994). However, some authors claim that law firms have moved away from this professional ethos. Profit orientation, corporate structures and a businesslike behaviour have been incorporated by most large law firms (Linowitz, 1994; Cooper, Greenwood, Hinings, & Brown, 1996). One reason for this development in the business model of law firms can be attributed to changes of the environmental conditions, i.e. law firms are forced to adapt their internal structures and processes to new challenges resulting from their business environment (Cooper, Greenwood, Hinings, & Brown, 1996). This leads to the fact that traditional structures and strategies of law firms, i.e. the professional orientation of law firms, might cause some challenges or problems in satisfying all the respective stakeholders (Pinnigton & Morris, 2003). For example, the war for talent and more demanding clients lead to different hiring policies and project based approaches. In order to attract talent, law firms have to provide career opportunities and interesting projects or cases. This can only be realized by sustainably serving interesting clients. On the other hand, clients demand concrete results when they hire a law firm. Large companies, in particular, negotiate performance related payments for example. Consequently, law firms adapt their internal structures to cope with the challenges resulting from the business environment of the legal profession (Pinnigton & Morris, 2003; Hanlon, 1997).

Taking this development into account, I propose that more than one pattern of organizational and strategic elements (the classical professional model) exists in the legal profession. These patterns consist of coherent sets of complementary elements which are related to the performance of the law firm. Consequently, the main proposition of the paper is:

Main Proposition: If a law firm comprises of a coherent set of complementary design choices indicated by a strong affiliation to a pattern of organizational and strategic elements, it will reveal a comparably higher performance than a law firm that shows a lower degree of affiliation to such a cluster.

The latter case results from two main assumptions. First, organizational design choices are not discrete choices (Miller, 1996). Therefore, law firms can show a continously higher or lower degree of affiliation to a pattern. Second, law firms rarely change their entire organization by transferring all elements to the new form of organization (Cooper, Greenwood, Hinings, &

Brown, 1996). Thus, these firms in transition might consist of mixed organizational elements. The degree of complementarity within the mixed organizational system might be lower and consequently the performance will suffer from that.

I would like to refer to the change in the legal profession, but it is important to note that change is not the construct that I intend to explain. I plan to use the situation of the legal profession in transition as a vehicle to show how differences between law firms' organizational and strategic design choices affect firm performance. Therefore I switch the perspective from a view over time (change) to a cross-sectional perspective. As not every firm will perform quantum-leaps from one complementary pattern to the next (Cooper, Greenwood, Hinings, & Brown, 1996), I assume that in the cross-sectional perspective there will be some law firms in transition. This means that some law firms are not clearly dedicated to a coherent pattern of design choices and reveals a comparably lower firm performance.

To effectively address the systemic idea of complementarity an understanding of relevant organizational and strategic elements of law firms is necessary. As mentioned in the introductory paragraph much research has been conducted in the legal profession (Greenwood & Hinings, 1993; Cooper, Greenwood, Hinings, & Brown, 1996; Sherer, 1995; Pinnington & Morris, 2003). I will draw on these studies as they provide the baseline elements for the paper. However, the concepts of strategy and organization are so complex that studies have to focus on a representative set of elements to characterize them (Miller, 1996). I will do so tentatively in the light of existing research. The difference between my approach and the existing studies is that I will elaborate on the interactions between these elements and the systemic effect of the interactions (Grandori & Furnari, 2008) on the performance of law firms as mentioned above. As a first step I provide a brief description of organizational and strategic elements of the study followed by a explanation of potential interactions between the elements.

Organization of law firms

One of the main organizational characteristics that represent the particularities of law firms is a low level of separation of ownership and control (Greenwood & Hinings, 1993; Coffee, 2001). Partners of the law firm incorporate the main responsibility for the management of the law firm. Simultaneously, they are the shareholders of the law firm. Therefore, ownership and control of the law firm lie in the hands of the same people, namely the partners (Rebitzer & Taylor, 2007). Every partner in the law firm more or less runs his own business as he specializes in a certain legal field. Decisions regarding new clients, resources and firm development are taken by the partner except for decisions that affect the whole firm. In this case decisions are taken by the circle of equity partners (Pinnington, 2003). This description highlights the independency of partners within the law firms. One clear strength of the high degree of independency is that the firm is very responsive and flexible to clients demands. The organization of law firms reflects this advantage by *decentralized organization structures* (Rebitzer & Taylor, 2007).

The partners of a law firm play a major role in determining the structure and performance of the firm. Law firms in general have lawyers in two distinct capacities with distinct financial claims on their firms' income: (1) partners, who are the source or repository of firm knowledge, and (2) associates, employees who are acquiring knowledge and performing work for partners (Sherer, 1995). Firm performance can be enhanced by the way in which firms use resources in the development and implementation of their strategies (Wright et al.,1995). In particular, knowledge-based resources are used to transform other inputs. In professional service firms, knowledge-based resources are often applied directly to serve clients. However, these resources must be integrated and managed to create value (Galunic & Rodan, 1988). This idea of managing resources is reflected in the *structure of human capital*. Partners' knowledge of current markets and clients can be leveraged to offer the services as most work in law firms is accomplished using teams of professionals (several associates, with partners as the team leaders and primary contacts with the client (Hitt M. A., Bierman, Uhlenbruck, & Shimizu, 2006; Sherer, 1995).

For a firm whose dominant input is human capital, the selection, training, evaluation, and retention of new employees is critical (Gilson & Mnookin, 1989). Coordination of professional work is achieved by the standardization of inputs rather than processes with extended training creating the appropriate skills and attitudes (Pinnigton & Morris, 2003). This means that law firms follow strict criteria in recruiting new associates to ensure, that the new lawyer brings the right skills and the right mindset to work in the firm. Furthermore, the firm aims at “standardizing” the skills and attitudes by close supervision of and cooperation with partners. Consequently, high emphasis is placed on internal labor markets to select new partners. One very frequently applied selection process is the up-or-out-principle (Gilson & Mnookin, 1989). However, recent developments reveal a higher inflow of lawyers through hiring from the external labor market. Professionals with skills in special fields or in particular lawyers who are good at acquiring new clients, the so called rainmakers, are often hired from outside the law firm (Pinnigton & Morris, 2003). This recruiting practice comes with a variety of different backgrounds of lawyers. Consequently, the degree of *diversity of human capital* is considered to be one decisive element in the organization of law firms.

The work of lawyers is unprogrammed and evaluation of performance is difficult. Law firms developed special *profit sharing arrangements* to account for these conditions (Leblebici, 2007). Three types of compensation schemes can be observed. The lock-step system represents the main principle of compensation in US law firms. In this system, partners increase their share of equity and profits over time, regardless of their contribution to the profit of the firm or marginal productivity. The scheme of equal shares involves all equity partners of the firm and profits of the firm are distributed among the equity partners. Consistent of the development of a more businesslike orientation of law firms the ‘eat what you kill'-formula has been developed. This profit sharing arrangement places emphasis on individual performance and tolerates greater inequalities in partner profit shares (Morris & Pinnington, 1998). The system of equal shares or the lockstep system often has been criticized for their lack of incentives and possibilities for free-riding behavior as partners can claim the right to shares of profits which exceed their individual contributions. Mutual monitoring amongst equity partners is said to be an implicit and normative control mechanism that regulates the respective performance of the partners in terms of profits and in terms of professional norms. Therefore, the lock-step system has proved its effectiveness to provide incentives to partners in law firms with a high emphasis on professionalism (Leblebici, 2007; Morris & Pinnington, 1998).

Strategy of law firms

The topic of strategy in law firms is a heavily discussed area. Some authors argue that strategy in law firms does not exist. The strategy of the firm can be seen as an aggregate of partners' individual interests (Pinnigton & Morris, 2003). This is due to the fact that partners of the law firms work on an autonomous basis and decide about their own business according to their field of interest . However, differences between law firms can be observed. One main difference is that some firms place significantly higher emphasis on advising clients in the case of transactions (Gilson & Mnookin, 1989; Hitt M. A., Bierman, Uhlenbruck, & Shimizu, 2006). This strategic orientation carries some advantages for the firm. First, the size of the project is comparably high. Thus, acquisition costs of such projects are lower compared to the costs of a greater number of small projects. Second, the tasks within transaction based projects are more standardized (Lawrence, 1999). For example, a merger between two property rental companies includes a mutual appraisal of contracts with existing hirers. This kind of work is highly standardized and does not require the costly work of partners. Such an emphasis on certain areas of legal advisory is increasingly observed. Consequently, *Strategy* is one justifiable element to affect the performance of law firms.

Complementary interactions between elements of organization and strategy

To begin, I will describe interactions between organizational elements in law firms. I suggest that the interaction between separation of ownership and control and decentralized decision making structures is a complementary relationship with respect to performance. Partners in a law firm work on an autonomous basis (Greenwood, Hinings, & Brown, 1990) which means they run their own business within the law firm. Therefore, they manage and control their business and are the residual claimants to the surplus produced by the enterprise (Sherer, 1995) resulting from their ownership stake. Taking this into account, centralized structures will not support this kind of organization (Rebitzer & Taylor, 2007). A decentralized organization is one alternative that reveals the highest potential to interact in a complementary way with ownership and control in one entity. At this point, different levels of the design elements can be illustrated. As mentioned before, a low level of separation of ownership and control and decentralized organizational structures are to act in a complementary way. Taking the change to more consciously managed structures and the resulting higher degree of centralization into account, a stronger separation of ownership and control appears to be the consequence if a complementary relationship between the elements should be maintained. Lawyers are controlled by non-lawyer-managers and their freedom of taking decision and the influence on the business is fairly limited (Brock, 2006). Therefore, an ownership-stake that can only be influenced by the owner appears to be counterintuitive. However, it is important to note that this description does not reflect the reality in the legal profession as separation of ownership and control in law firms is a very scarcely observed phenomenon. But, a beginning of this development can be observed (Coffee, 2001). For example, the Australian law firm Slater & Gordon is the first to be publicly listed at the Australian Stock exchange. Public listing is one of the strongest separations of ownership and control as the shareholders are outside the firm and only have very limited opportunities to influence the management (Coffee, 2001). Due to this fact, the interests of the owners have to be administered by the management. Partners no longer work on their own basis but have to adhere to the overall objective of the firm. A greater share of managerial tasks is fulfilled by non-lawyer managers (Pinnigton & Morris, 2003; Brock, 2006). Consequently, instructions and directives replace the freedom to decide. Therefore, it becomes apparent that high levels of separation of ownership and control and highly centralized structures also interact in a complementary way. Consequently, the first proposition is as follows:

Proposition 1: Depending on the level of each element, separation of ownership and control and centralized organization structures reveal a complementary relationship. Low/high levels of separation of ownership and control and low/high levels of centralization have a complementary effect on law firm performance.

A tight connection to the independency of partners resulting from the separation of ownership and control is the interaction between the diversity of human capital and decentralized organization structures.

Partners' work is charakterized by a high degree of independency. However, law firms pursue certain objectives and policies such as professionalism. To ensure that partners follow these objectives although they act on an independent basis, law firms have introduced certain processes of socialization (Greenwood, Hinings, & Brown, 1990). Besides training activities and promotion procedures according to certain standards (up-or-out) specific recruiting schemes are applied to select new associates (Nelson, 1983). The criteria of the recruiting schemes aim at selecting new lawyers with a specific mindset. This mindset should reflect the values of the firm and provide the basis for further "standardization" and development of potential partners (Pinnigton & Morris, 2003). Usually, only the top graduates of renowned law schools match these criteria. Law firms consequently put huge effort in recruiting new lawyers to achieve a low level of human capital diversity (Greenwood, Hinings, & Brown, 1990).

Psychological and sociological literature suggests that values of the firm are transferred to the associates by implicit and explicit communication with the carriers of the values (Chong, 2007), the partners. Therefore, flat hierarchies and direct interaction between partners and associates is a necessary condition for the desired development of associates (Rebitzer & Taylor, 2007). A decentralized organization which usually includes flat hierarchies is one alternative that reveals the highest potential to interact in a complementary way with a low diversity of human capital. Different levels of the design elements have an influence on this relationship, too. Low diversity of human capital and a low level of centralized organizational structures are to act in a complementary way as the “standardization” of basic human capital (“right mindset”) is supported by the organization. Taking the change to more consciously managed structures and the resulting higher degree of centralization (Brock, 2006) into account, a higher degree of human capital diversity appears to be the consequence if a complementary relationship between the elements should be achieved. The importance and the huge effort (costs) of finding and recruiting people according to very strict criteria can be lowered as centralized structures provide the possibility to not only “standardize” but to develop the skills and the knowledge of new associates. Individual and costly assessments of potential lawyers are replaced by centrally provided training of hired associates which is based on larger groups and more standardized approaches. Consequently, the second proposition reads:

Proposition 2: Depending on the level of each element, diversity of human capital and centralized organization structures reveal a complementary relationship. Low/high levels of diversity of human capital and low/high levels of centralization have a complementary effect on law firm performance.

In order to influence individual performance partners have to be able to take decisions regarding their own business. Consequently, decentralized organization structures support the mechanism of lock-step and equal shares-profit-sharing arrangements. On the other hand, centralized structures require a compensation scheme that is based on individual performance (Morris & Pinnington, 1998). Strategic directions and the respective goals are provided by centralized management. To control for these objectives, performance evaluation measures are frequently used (Brock, 2006; Hitt, Bierman, & Collins, 2007). Consequently, the freedom of decision as well as the freedom to act is clearly limited and the partner has to orient his professional activities according to the objectives of the firm. The mechanism of mutual monitoring as an outcome of lock-step compensation (Leblebici, 2007) is not an effective means as the defined objectives represent the respective basis to control for the performance of the lawyer (partner) (Hanlon, 1997). Consequently, the mutual comparison of partners' performance has only limited effects. Therefore, proposition 2 is:

Proposition 3: Depending on the level of each element, the degree of performance based compensation elements and centralized organization structures reveal a complementary relationship. Low/high levels performance based compensation elements and low/high levels of centralization have a complementary effect on law firm performance.

Complementarity can not only exist between firm internal organizational elements, but also between organizational and strategic elements. A typical organizational characteristic of law firms is the structure of human capital and a strategic characteristic is the type of project (Maister, 1993). A proxy for the human capital structure is the leverage ratio which describes the number of associates to the number of partners (Sherer, 1995). A complementary interplay between these two elements can be modelled as follows. Transaction based projects for corporate clients typically involve a huge share of standardized work. Experienced partners' wage is too high so that they are too expensive to fulfil tasks like these. Therefore, standardized tasks have to be performed by associates as their wage is comparably lower (Maister, 1993). Seeing this from a complementarity perspective, a high leverage ratio and a huge share of corporate clients appear to be complementary elements as this constellation appears to be the most effective one.

Proposition 4: Depending on the level of each element, the structure of human capital and strategy reflected by the type of projects reveal a complementary relationship. Low/high leverage ratios and low/highly standardized projects have a complementary effect on law firm performance.

Figure 1 illustrates that a network of interdependencies between organizational and strategic elements is linked to performance. Depending on the respective level of the individual elements the interaction of these elements seems to play a crucial role in determining firm performance (Ferguson & Ketchen, 1999).

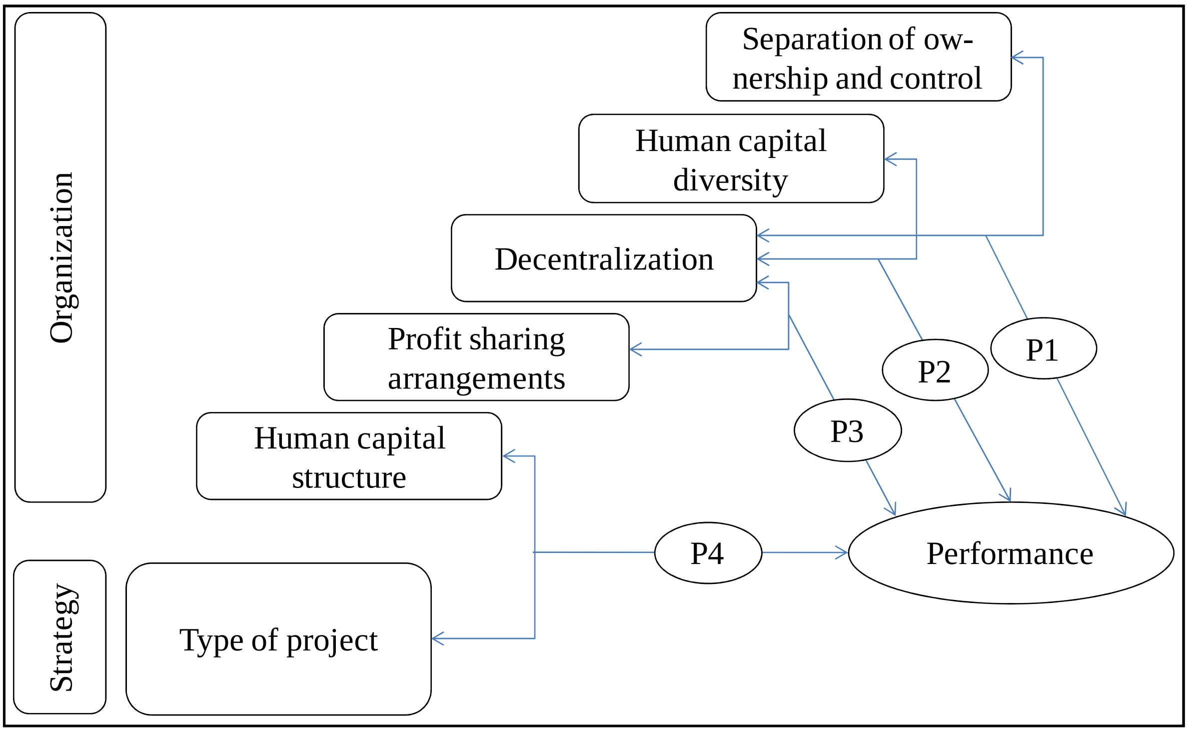

Figure 1: Overview of interactions of organization and strategy in law firms

So far, most of the interdependencies have been described between two elements and their potential effect on performance. The notion of complementarity emphasizes the systemic effect of elements’ combinations (Whittington, Pettigrew, Peck, Fenton, & Conyon, 1999) so, consequently, if all elements of the system interact in a complementary way an effect on performance should be observable. This refers to the link between systems of individual elements and complementarity as described by Roberts (2004). He states that the idea of complementarity can also be extended to groups of choice variables. Therefore, several choice variables are complementary if each of them is a complement for each of the others (Roberts, 2004). By describing systemic effects of potentially complementary elements I will elaborate on the idea that the whole is more than the sum of its parts (Milgrom & Roberts, 1995a).

I will show that this systemic effect can be traced back to a collection of choice variables as these choice variables interact in a mutually reinforcing way and they tend to be done at comparable levels (Grandori & Furnari, 2008; Schultze & Orlikowski, 2004; Porter & Siggelkow, 2008). Applied to the context of law firms, organizational and strategic choice variables are to interact in the same coherent pattern, i.e. in a complementary way and at comparable levels if the results of performance effects of complementary interactions between the elements are to be confirmed.

For example, low separation of ownership and control and decentralized structures are assumed to interact in a complementary way. Decentralized structures and profit sharing arrangements based on a lock-step system as well as comparably lower leverage ratio and low diversity of human capital are seen as complementary elements. Therefore, the group of these choice variables can be seen as a complementary system with the respective effects on performance.

In contrast to this, groups of choice variables that reveal different levels of individual elements are assumed to have a lower effect on the performance. The coherent structure of the pattern and the fit between the elements is disturbed because within the system of interactions there exist elements that do not interact in a complementary way, or even relate in a substitutive way. Consequently, the performance of the system as such will be worsened. Roberts describes this as “mix and match” among the elements of different patterns (Roberts, 2004). If, for example, the complementary system described above is confronted with centralized structures the autonomous way of working for the partners will only be possible to a limited extent. The partners cannot follow their interests of work in the field of their personal strengths so consequently their performance will suffer from this organizational choice.

Following up on this perspective the question arises, if there is only one or multiple coherent patterns. But, the question cannot be answered from the existing research (Short, Payne, & Ketchen, 2008). Several authors such as Greenwood and his co-authors and Pinnington worked in the field of organizational archetypes (Greenwood & Hinings, 1993; Pinnigton & Morris, 2003). But, they all have in common that they narrow their perspective down to a certain set of configurations (Miller, 1996). To avoid such a limitation of the paper in advance, I will not focus on confirming existing archetypes but on the identification of commonly shared patterns of organizational and strategic elements. From a complementarity point of view commonly shared patterns of elements can be interpreted as systems of elements which interact in a complementary way (mutually reinforcing) as these elements tend to be done together (see main proposition).

Data and Methods - Outline

Research in the field of law firms comes with the side effect that a considerable amount of data is available. Therefore, I intend to derive evidence based on quantitative data. Scholars employ methods of numerical clustering algorithms to identify natural clusters in the data (Miller, 1996; Short, Payne, & Ketchen, 2008). In order to (Hair, Anderson, Tatham, & Black, 1995) explore the effect of complementary interactions between organization and strategy this study will be carried out in two stages. In the first stage, I will classify the law firms in the sample based on their organizational and strategic elements. In the second stage, I will analyze the relationship between the affiliation of a law firm to a pattern of design choice and firm performance

Stage 1: Law firm classification according to organizational and strategic elements

In order to categorize law firms according to their organizational and strategic elements, cluster analysis, which is the first stage in my proposed method, is used. Cluster analysis is a commonly used technique for empirically identifying patterns in complex sets of organizational variables. This analysis allows one to group organizations so that each is similar to others within each cluster, thereby exhibiting high internal (within-cluster) homogeneity with respect to certain design choices and high external (between cluster) heterogeneity with respect to the same characteristics (Hair, Anderson, Tatham, & Black, 1995). The result is a similarity measure (e.g. squared Euclidean distance) for each individual law. This similarity measure indicates the affiliation of a law firm to certain pattern of design choices and represents the major input variable for the next stage of the analysis.

Stage 2: Relationship between a law firms' affiliation to a cluster and firm performance

I will analyze the relationship between the similarity measure resulting from the cluster analysis in step 1 by means of correlation analysis. This step will be the test of the main proposition which states that if there are certain patterns of design choices and a law firm reveals a strong affiliation to this cluster, the performance of this law will be significantly higher compared to law firms that do not show such a strong affiliation.

An overview of the variables and the data I intend to use is illustrated in the following table.

Element	Construct	Operationalization (*Source of data*)
Correlation variable for similarity measure of firms		
Firm performance		Profit per partner to revenue per lawyer (Hitt, et al., 2001, 2006) (*American Lawyer*)
Organizational clustering variables		
Human capital diversity	Recruiting schemes	Diversity of quality of law schools attended by partners (*Lawyers almanac, Gourman Report*) **OR** Diversity of associate's attended law school *(NLJ 250: Law School Hiring Report)*
Compensation schemes	Degree of performance based compensation elements	Lock-step, equal shares or per-formance based compensation (*American Lawyer*)
Human capital structure	Leverage ratio	Number of associates to number of partners (*American Lawyer*)
Centralization	Diversification	Herfindahl index of lawyer per legal field of the five largest practice areas (Hitt, et al., 2001) *(NALP, Lawyers Almanac, AM 250)*
Strategic clustering variable		
Type of project	Number of transaction based projects	Share of corporate clients (Hitt, et al., 2001, 2006) (*American Lawyer*)

Table 1: Overview of Elements, constructs and operationalization

Literature

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