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The Structural Choice Of A Senior Marketing Executive In The Top Management Teams In MNCs In USA, UK and Germany: Antecedents And Impact On Firm Performance

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THE STRUCTURAL CHOICE OF A SENIOR MARKETING EXECUTIVE IN THE TOP MANAGEMENT TEAMS IN MNCS IN USA, UK AND GERMANY: ANTECEDENTS AND IMPACT ON FIRM PERFORMANCE

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ABSTRACT

The role of the Chief Marketing Officer (senior marketing executive) has received minimal attention in the literature. Only recently has academic research investigated the position of the senior marketing executive. This dissertation uses neo-institutional and contingency lenses to extend prior theory and add cross-national perspectives on marketing management structural choices. An analysis of secondary data sources is used to clarify the key antecedents involved in the organizational choice of a senior marketing executive as a structural response in both one-tier and two-tier board governance systems. Possible mechanisms for the hypothesized effects are presented. Further, gaps in the prior literature on the economic effects of the senior marketing executive in the multinational corporation (MNC) are addressed. The moderating effect of each antecedent on firm financial performance is tested. Possible mechanisms for their influence are explained using contingency and institutional theories.

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CHAPTER ONE

INTRODUCTION

Marketing academicians have voiced their concern over marketing's eroding presence in the top level of firm management since the 1980's. The resulting decrease in marketing's influence on the corporate strategy and planning process has caused a considerable amount of concern (Day, 1992; Varadarajan, 1992). It is, after all, the top management team (TMT) of a firm that is primarily responsible for establishing, planning, and overseeing the execution of the organization's strategy. This includes decisions impacting resource allocations, organizational structure, market presence, technology development and acquisitions (Cyert & March, 1963; Hambrick and Cannella, 2004; Zorn, 2004).

The presence of a Chief Marketing Officer (senior marketing executive) in the TMT has been identified by prior researchers as a strong indicator of the influence of marketing as a separate function in the strategic planning process, the status of marketing within the organization, and the level of acceptance throughout the organization of the marketing concept (Piercy, 1986; Webster, 1981). Further, the commitment to the marketing function is critical to the process of developing market orientation, servicing customer relationships, creating the right products, and driving the profitability of the firm (McGovern et al., 2004; Piercy, 1986).

The participation of a senior marketing executive in the top levels of corporate management can be traced back to the 1950's and early 1960's. During this period the position of a chief marketing officer emerged as companies began to move away from production and sales driven models to a marketing focus with centralized marketing staff and an orientation to strategic market planning and development (Keith, 1960). The rise of marketing was so rapid that Hopkins and Bailey (1971) estimated that over half of the largest manufacturing companies in the United States had a senior marketing executive (SME) by the 1970's. However, after reaching a peak in the 1970's, there was a steady decline in corporate level marketing functions and their influence in the corporate planning and strategy formulation process. Much of the blame for the slow devolution of marketing's influence during the 1980's and 1990's has been placed on several trends: 1) the emphasis on aggressive acquisition and leveraging; 2) the stage of internationalization of many large corporations which emphasized local markets and subsidiary autonomy which dispersed marketing responsibilities; 3) the profound changes in accounting and financial reporting rules; 4) the increasing emphasis placed on the equity markets and the rise of the investor stakeholder; and 5) the difficulty of establishing a link between marketing activities and financial accountability (Hopkins and Bailey, 1984; Kerin, Mahajan and Varadarajan, 1990; Kumar and Shah, 2009).

Nath and Maharajan (2008) reported that from 2000 through 2004 approximately 40% of the companies listed in the S&P 500 included a marketing executive as a member of the TMT[1]. The level of representation of such an important functional area such as

[1] Nath and Mahajan (2008) identify this senior marketing executive as the Chief Marketing Officer (CMO), although the person may, in reality, not hold this title. The term SME (for senior marketing officer) is therefore preferred and used in this research.

marketing stands in stark contrast to the representation of the finance functional area in the top executive ranks. Zorn (2004) stated that approximately 97% of firms studied had a Chief Financial Officer. This decline in the presence of SMEs is an indication that not only is the importance of marketing in strategic management being called into question, but so is marketing's importance to the financial performance of the firm (Kumar and Shah, 2009). Recent scholarship on the antecedents to the presence of a senior marketing executive and the impact of the presence of a senior marketing executive on the firm's financial performance delivered inconsistent and mixed findings (Nath, 2006; Nath and Maharajan, 2008).

This research seeks to build on prior research on the antecedents to the presence of a senior marketing executive, and the SME's impact on the financial performance of the firm. It accomplishes this by addressing more comprehensively the internal and environmental contingencies that act as antecedents to the presence of a senior marketing executive and the impact of the SME on financial performance in greater breadth than has been previously done. The questions addressed in this research are the following: 1) what are the salient antecedents among institutional, structural and strategic factors that influence the presence of a senior marketing executive; 2) how does the presence of a senior marketing executive impact the financial performance of an organization; and 3) do the antecedents and firm performance effects vary across countries? Addressing these questions will add to the understanding of the role of marketing in responding to environmental contingencies and its impact on performance in multinational organizations. This will expand the scope of both theoretical and practical understanding of the marketing function at senior management levels.

PLAN OF THE DISSERTATION

Chapter Two introduces the senior marketing executive oriented literature as well as the relevant TMT and international management literatures. Using the extant research from these literature streams, a conceptual model and hypotheses are proposed. Chapter Three describes the methods used to conduct the study, including the data samples used, descriptions of the variables, and descriptions of the analytic methods employed. Chapter Four presents the findings of the analyses and hypotheses testing. Chapter Five presents a discussion of the study's results, conclusions, limitations, and suggestions for future research.

CHAPTER TWO

CONCEPTUAL FRAMEWORK AND HYPOTHESES

The objective of this dissertation is to extend previous research on the antecedents leading to the organizational choice of a senior marketing executive in the top management team (TMT) and to assess the impact of the presence of a senior marketing executive (SME) on the financial performance of the firm. In order to accomplish this, the organizational theory literature, as it applies to senior marketing executive and TMT literature, is drawn upon to propose a conceptual framework for two separate models. For the purposes of this research, the TMT is defined as the group of senior management executives identified by the company in their annual report or proxy material. The senior marketing executive is defined as a marketing executive who the company identifies as being a member of the TMT.

The first model and set of hypotheses address key antecedents leading to the presence of a senior marketing executive. The second model and set of hypotheses address the impact of the senior marketing executive on the economic performance of the firm. Both models are viewed through the lenses of institutional theory and contingency theory. Previous research has only addressed the contingency perspective in relation to explaining the presence of the SME in the TMT.

Model I: Antecedents to the Presence of a Senior Marketing Executive in the TMT

There is a long history of the application of contingency theory to address questions surrounding the choice of alternative organizational structures. The position of senior marketing executive is not a typical structural choice for an organization. It is a departure from the normal executive structure. And as such, it would be instructive to better understand under what specific contextual antecedents this structure is chosen. Through the lens of contingency theory, the senior marketing executive position can be seen as an alternative structural choice, a choice that is driven by management's rational assessment of an organization's context, and a choice that has been deemed to be the most instrumentally appropriate structural response for the specific environment being faced by the organization.

Contingency Theory

Organizational theory gave rise to the original structural contingency frameworks beginning in the 1960's. Initially, it was an explanation of general managerial responses to contingencies being faced by the organization. Chandler (1962) proposed a relationship between strategy choice and organizational structure, but Lawrence and Lorsch (1967) promoted the idea that the external environment was fundamental to the structural choices made by organizations. Firms were seen as open systems which react and assemble themselves as a response to the demands made upon them by their external environments. The assumption that the external environment is a very powerful contextual variable influencing firm structure has remained at the core of the contingency approach (Burns and Stalker, 1961; Lawrence and Lorsch, 1967).

A number of researchers have attempted to categorize the myriad influences which act upon organizations. Although the majority of the influences explicated in prior research emphasize contingencies external to the firm, contingency theory seeks a balance among external factors, such as changes in technology and market turbulence, and internal factors, such as strategic choice and size (Burns and Stalker, 1961; Lawrence and Lorsch, 1967; Jelinek, 1977).

As a mid-range theoretical approach, contingency theory focuses on how different structures, strategies and behavior processes perform in different settings. Although the open systems approach (Cyert and March, 1963) assumes organizational adaptation and equifinality, all organizations are subject to the assumption of rationality in response to contingency (external and internal) contexts. This means that firms will express various responses to their environments and these variations are not random. They are based on a matching between contingency factors and internal structural responses. The ability to identify the important contingency variables allows the firm to choose the most appropriate structural response (Zeithaml, Varadarajan, and Zeithaml, 1988).

The use of the contingency approach in marketing is less developed than its application in general management. However, it has been applied in marketing behavior studies to assess the impact of contextual effects in sales (Weitz, 1981), project tasks (Sujan, Weitz and Sujan, 1988) and personnel performance (Ramaswami, 1996). The contingency approach has also been used to assess strategic marketing processes such as planning (Hambrick, 1983; Piercy, 1981) and strategy formulation (Day, 1986; Wind & Mahajan, 1981). Nath and Mahajan (2008) addressed both the antecedents to the presence of a senior marketing executive and the impact of the senior marketing executive on firm

performance using a contingency framework. Their research indicated a stable positive association between the presence of a senior marketing executive and innovation, corporate branding, product differentiation and the recent installment of a CEO from outside the firm. However, their results were unstable or not in the expected direction for a TMT with marketing experience, TMT with general management experience, diversification, and market concentration. Classic contingency theory expectations were irregularly supported by Nath and Mahajan's (2008) research results. This may be because their sample was limited to a five-year time period, but contingency theory does not offer guidance on time frames for establishing an organizational response to a set of contingencies. This research seeks to establish stable associations between contingency variables derived at the institutional, structural, and strategic levels and organizational structural choice by using a longer time frame and a larger sample that includes both domestic (United States) and foreign multinationals (Zeithaml, Varadarajan, and Zeithaml, 1988; Donaldson, 2001).

In this study, each level of contextual contingency (institutional, structural, and strategic) has multiple variables associated with it. These variables assess the uncertainty and dependency of that contextual level. The contingency theory literature postulates that there is a relationship between the internal and external contingencies of an organization and organization's structure. This is a central tenet. Further, the proposition is made that changes in contingencies can result in changes in structure (it is a dynamic system), and these causal relationships can be either linear or curvilinear in nature. And finally, the contingency view proposes that an organization attempts to optimize the fit between its structure and the contextual contingencies that it is facing. A misfit between the

organization's structure and its context is suboptimal and leads to lower organizational performance (Donaldson, 2001).

This research is not designed to test fit, but the assumption is that rational actors will attempt to adapt organizational structure in the direction of improved fit with environment contingency that then leads to increased organizational effectiveness (Donaldson, 2001; Ruekert, Walker, and Roering, 1985). The rational processes behind structural adaptations are, in fact, not optimizing, but rather lead to satisficing adaptations. Managers are boundedly rational (Simon, 1979), struggling with incomplete information. Uncertain environments are characterized by rapid change, high complexity, or limited information. They present a risk to boundedly rational actors and force organizations to find structural adaptations to address the risk they pose to the organization. Uncertain environments can be external or internal, both will initiate a structural response (Donaldson, 2001).

Each of the contextual contingencies presented (institutional, structural, and strategic) represent a level of risk to the organization because of the information complexity and uncertainty they represent. Classic structural contingency theory posits that these contingencies will be addressed through a structural adaptation to mitigate the informational complexity and uncertainty. Because these contingencies impact the organization wide coordination of marketing processes, the expected structural adaption would enhance the organizational capability to deal with information complexity and uncertainty in the marketing domain. The structural adaptation placing of a senior marketing executive in the top management team of an organization is one way in which a firm can help senior executives manage the complexities of marketing activities such as

interpreting market data, competitor and product assessments, consumer development and relationships, particularly when the external market and environment is turbulent and fast changing (Hopkins and Bailey, 1984; McGovern and Quelch, 2004; Piercy, 1986). This structural adaptation toward fit is expected to positively address the contingency challenges facing the firm and enhance firm performance.

Institutional Theory

However, firms are not fully rational in their pursuit of optimal firm performance. They also satisfice or ceremonially engage in activities that offer perceived benefits to the organization. They, as do most social constructions, follow a meandering path that can, and does, deviate from optimal performance. The institutional perspective represents a relaxation of some of the optimization assumptions of instrumental action used by contingency theory to explain structural choice and organization change. The institutional perspective emphasizes the importance of the contextual environment in shaping the organizational structure. However, unlike the contingency perspective, institutional theory explores the complex relationships between organizations and their context with a relaxed economic efficiency requirement (Donaldson, 2001; Scott, 2001). This would allow for a more institutional argument as an explanation for senior marketing executive structures which might help to explain some of the difficulty in identifying structure to performance relationships.

The cultural, social and political environments in which firms are embedded produce the contextual contingencies to which firms respond. It is the societal level at

which the common social and normative understandings are created which guide, or pressure, organizations in their chosen forms and structures. These social and normative understandings inform firms as to the accepted means-ends structures to be used to achieve goals. This form of isomorphic pressure for specific organizational structures extends to management professionals and their functional position, responsibility and activities within the firm (Meyer and Rowan, 1977; Scott, 2001). The mechanism of mimetic pressure is also used in institutional theory to partially explain convergence toward a specific structural form. This type of isomorphic pressure is invoked here as a mechanism by which organizations that are facing uncertain or complex environments identify effective organizational structural forms. When successful organizations act as structure templates, this research proposes that isomorphic pressures based on mimetic mechanisms can represent an instrumental contingency fit process attempting to achieve performance improvements. However, in order for an organizational structural form to act as a source of isomorphic pressure, a mimetic template for the pursuit of fit, the structure must have social legitimacy before it will lead to convergence (DiMaggio and Powell, 1983).

Figure 2.1 presents the proposed antecedent model. It introduces the three levels of factors, institutional, structural and strategic, and the attendant constructs which are proposed to be associated with the presence of a SME. The following sections of this chapter describe the hypothetical relationships between institutional, structural and strategic factors and SME presence.

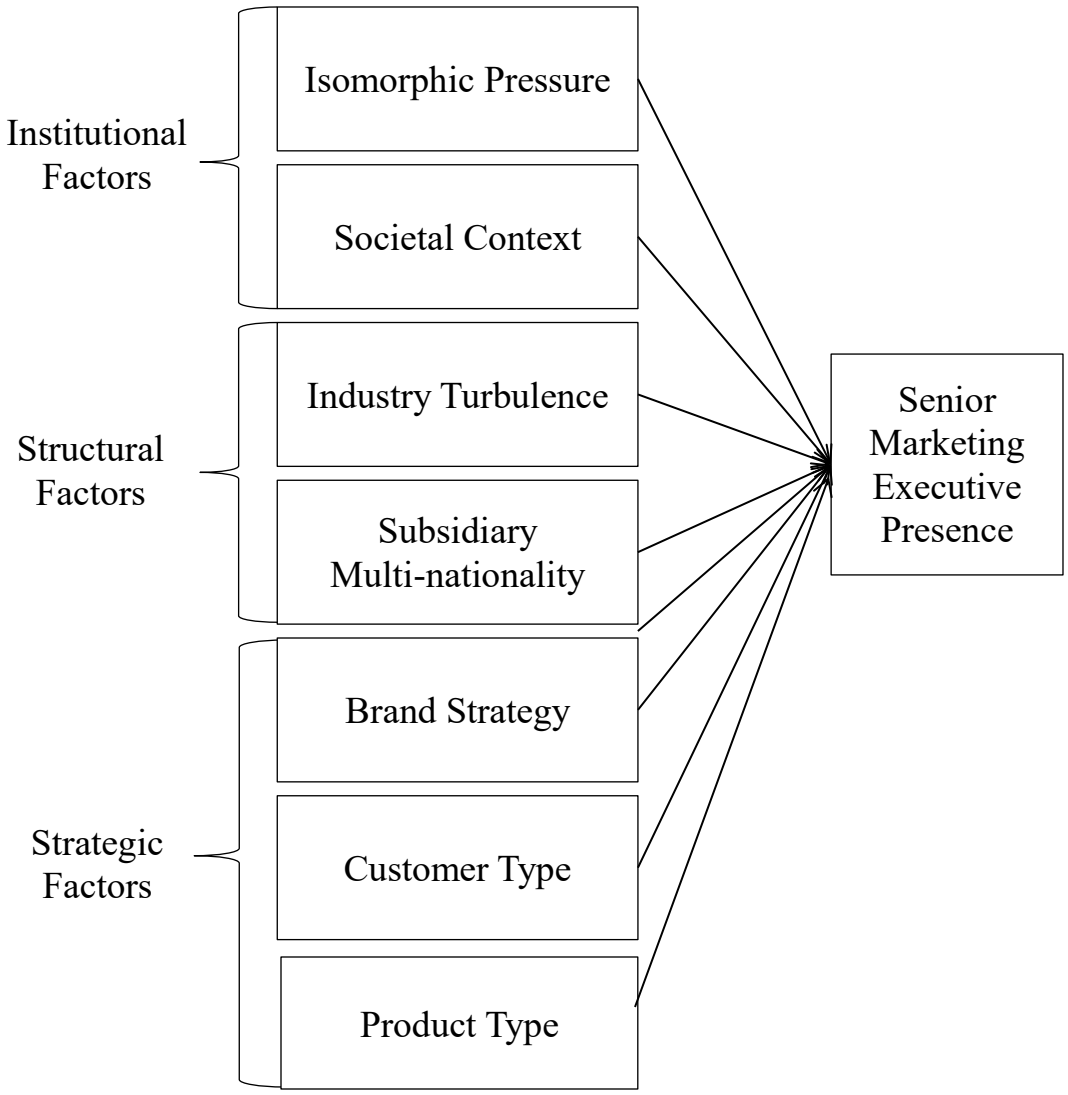

Figure 2.1 Antecedents to SME presence in the TMT

Hypotheses

Institutional Factors:

Isomorphic Pressure

Institutional theory suggests that organizations are compelled to justify their structures and actions so that their behaviors conform to prevailing societal norms and expectations (DiMaggio and Powell, 1983; Scott, 1987). Organizations are receptive to signaling which they receive from their environments about what is considered acceptable or legitimate behaviors and norms. In order to gain or maintain social legitimacy, organizations engage in mimicry of other more legitimate organizations. This ensures their survival and prosperity by allowing them access to resources and protecting them from social sanction.

Institutional constituents such as competitors, governmental bodies and trade associations provide signals of legitimacy, as do consumers. These groupings and organizations can act as a source for benchmarking by other organizations, if it is felt that the benchmarked organization or group is considered successful or otherwise recognized for its superior performance or capabilities (DiMaggio & Powell, 1983). The resulting mimicry of institutions of which it is felt have more social legitimacy leads to isomorphism in both structure and action (Scott, 2001).

The suggested mechanism behind isomorphism is risk reduction and survival. By imitating the actions and structures of organizations that are seen to perform exceptionally, a firm is more likely to be successful, be seen as successful, or be doing what is required to become successful. Particularly within an organizational field,

organizations tend to converge toward the same structures and processes driven through mimicry rather than any contingent need associated with their environment (Haunschild, 1993; Suchman, 1995).

This research focuses on the financial information communicated by public firms regarding their financial health and competitiveness, which once in the public domain, act as signaling devices to other firms within their industry. The assumption is made in this research that the construct of the organizational field within institutional theory is analogous in application to an industry, or an industry segment. In the business world, financial success is a very compelling signal communicated within and beyond an industry (organizational field) or industry segment through the financial reporting requirements of publicly held corporations. The financial metric comparison of a firm's performance to industry/industry segment peers is a fundamental driver for analysts' investment ratings, stock performance, and top executive compensation awards.

Secondary financial data signaling is an indirect method to assess legitimacy pressure exerted on other organizations within an industry. However, because of its importance, as stated previously, the required assumption that peer firms in an industry segment are aware of the signals given by other members of the same segment is a reasonable one. Further, the strategy and structural choices of organizations which lead their industry have legitimacy by virtue of their economic success. Laggards will attempt to emulate, to the extent they can, the same strategic and structural choices of the successful firms in order to solve their competitive problems (DiMaggio and Powell, 1983; Fligstein, 1990). Therefore, this research assesses the isomorphic pressure (legitimacy) of the structural choice of a senior marketing executive within an industry

segment by identifying the leading firms within an industry segment. The prominent financial metric of "sales revenue" is used, since it is probably the most significant signaling metric (aside from "market share") available to, and recognized by, other relevant competitors within the industry segment and by external financial stakeholders.

It is assumed that the largest and most successful firms in an industry segment would be the most watched by their competitors in order to glean insights into their success. Haveman (1993) and Haveman and Rao (1997) have identified trait-based organizational imitation, whereby the organizational practices of subgroups with high status were imitated by the general population. Further support for this finding is supplied by studies done by both Haunschild and Miner (1997) and Greve (2000) in which it was shown that as successful firms became larger and more profitable, the awareness and sensitivity of their peer firms to the processes and structural choices these firms made increased. The isomorphic pressure of successful firms on their peers within an industry segment would cause the adoption by peer firms of the managerial structures and processes chosen by the segment leading firms, even when the adoption of their adoption is not a rational managerial choice for the organization.

The organizational choice of whether to have a senior marketing executive, or not, will be influenced by whether the largest and most successful firms in an industry segment also choose to have a senior marketing executive, or not (Scott, 1987). Thus:

Hypothesis 1: Firms operating in industry segments in which the leading firms have a SME in the TMT are more likely to have a SME in the TMT.

Societal Context

The country location of a firm's headquarters and its country of incorporation is an important definer of the societal (institutional) context in which an organization is embedded. Cultural and historical considerations at the country level help to define and shape the organizational logics that are legitimate in that environment (DiMaggio and Powell, 1983). There are two aspects of the societal context that are of interest to this research, 1) the general cultural orientation to Marketing and its status as a functional area of business and its strategic importance to the firm, and 2) the governance system, or choice of either unitary or dual board approach, as it is reflected in statute on the country level. Both of these aspects of business culture are considered because of the influence that they could exert over the presence of a senior marketing executive in the TMT.

Marketing Acceptance: Attitudes and beliefs about the status, roles and legitimacy of functional areas within organizations (e.g. marketing) are institutionalized at the societal (country) level. These generalized expectations exert normative pressure on organizations embedded in the respective societal context to conform.

Homburg, Workman, and Krohmer (1999) have found evidence that marketing departments suffer from lower levels of influence within German organizations, as compared to marketing departments in American organizations. They argue that marketing, as a functional area of business, does not have the same legitimacy, and therefore influence, in Germany as it does in the Anglo-American societal context for historical reasons. Many of the foundational theories and concepts of marketing were developed in the United States and England and diffused slowly to other countries much

later, including Germany. As Homburg, Workman and Krohmer (1999) pointed out, "…, the first German-language marketing textbook was not published and the first marketing professorship at a German university was not established until the early 1970s."

It has also been argued that the lack of deregulation and continuing government regulatory control over advertising content and media access are institutional evidence of a negative social attitude toward the marketing profession (Homburg, Workman, and Krohmer, 1999). Other researchers have found evidence that German business culture is less supportive of market and customer orientation and instead represents a technology oriented business culture (Froeschl, 1997; Ulijn, Nagel and Tan, 2001), and have even anchored their claims for a negative orientation toward marketing in national culture frameworks (Brettel, Engelen, Heineman and Vadhansindhu, 2008). The more validity and importance marketing has in a societal context, the more likely marketing will be influential and take on a strategic role within the firm. Resources will be allocated to support marketing activities and organizational structures supporting marketing based decision making will be evident (Betektine and Haak, 2015; Engelen, Brettel, 2011; Hitt et al, 1982; Homburg, van der Wurff, Bakker and Picard, 2008; Workman and Krohmer, 1999). Therefore, it is expected that in the societal context of Germany, marketing will be seen as less valid and there will be less support toward marketing as a functional area. This should express itself in lower levels of marketing activity (lower allocation of resources to marketing related activities) and a lower incidence of senior marketing executives in the top management team (lack of willingness to support structural organizational changes associated with marketing) of firms headquartered in Germany, as

compared to those based in the United States or the UK (Bitektin and Haack, 2015; Homburg, Workman and Krohmer, 1999).

Therefore, because of "cultural-professional" differences in the marketing legitimation, it is believed that the presence of an explicitly identified senior marketing executive in the top management team is more likely in Anglo-American business cultures. Thus:

Hypothesis 2: Firms headquartered and incorporated in a country in which there is greater social legitimation of the marketing profession and its activities are more likely to have a SME in the TMT.

Figure 2.2 shows the hypothesized relationship between SME isomorphic pressure and marketing legitimacy and the presence of a SME in the TMT.

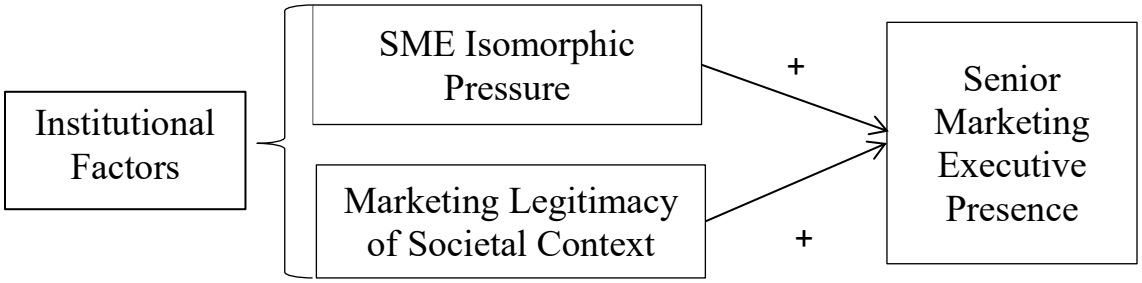

Figure 2.2: Institutional factors as antecedents to the presence of a SME in the TMT

Structural Factors:

Industry Turbulence

Industry turbulence is defined for the purposes of this research as a lack of industry segment stability. Turbulence in an industry segment is indicated by relatively more competition (Drucker, 1986), relatively higher rates of dynamic change in the market environment (Eisenhardt and Bourgeois, 1988) as compared to other industry segments, a relatively higher segment growth rate, and a relatively higher level of technology within the segment (Homburg, Workman, and Krohmer, 1999).

Market concentration is posited to affect the environment of a firm primarily through market competition and power relationships with consumers. As market concentration increases within a segment, the power of the seller increases and that of the consumer decreases. As the seller's power increases, the seller's perception of environment risk associated with having to be sensitive and responsive to consumer needs, wants, and aspirations is reduced. The quality and number of the product offerings and innovations become less relevant to firm success and ultimately lead to an oligopolistic approach to a market (Porter, 1985).

An oligopolistic situation reduces the number of environmental events which occur within any given period of time and reduces the amount, and turnover, of market information (Eisenhardt and Bourgeois, 1988, Glazer and Weiss, 1993). Both the number of events in the environment and the amount of information turnover has direct implications for management.

A low level of market turbulence is indicated by a high level of market concentration. As organizations acquire market power and consolidate market share, a market will experience lower rates of change, which in turn supports the consolidation of the market and allows fewer opportunities for new competitors to enter the market. Under a market concentration scenario, the logic of efficiencies of scale and scope will cause marketing to pursue coherent and standardized approaches to the markets. The presence of a senior marketing executive lends itself to the development, application and execution of firm-wide marketing policies and strategies and is an indicator of an organization's emphasis on standardization and efficiency.

When an industry segment is in an expansion phase with rapid sales growth (higher information turnover and a greater number of market change events) there is a greater need for market responsiveness. There is a rush of competitors and constant pressure to establish products or standards within the segment. Marketing capabilities are highly valuable as firms attempt to not only stay ahead of the competition, but also to understand, create and manage connections with customers better than the competition (Moorman and Rust, 1999). The same informational demands occur as a market segment starts to erode and collapse. The capacity of marketing management to react to frequent time sensitive changes in the environment will necessitate a managerial structure with decision making autonomy closer to the market.

Technology based industry segments experience high rates of growth and technical change. Technological standards can, and are, quickly eclipsed. Marketing function activities must be very close to the market and highly integrated with product development internally. Industry segments with a high technology component require

marketing inputs not only on a tactical level, but also on a strategic level (Eisenhardt and Bourgeois, 1988).

In a turbulent scenario the organizational emphasis will not be on standardization and efficiency, but on attempting to address the informational ambiguity caused by turbulent environments and supporting quick market oriented organization responses (Eisenhardt and Bourgeois, 1988). Thus:

Hypothesis 3: Firms in industry segments that are more turbulent are more likely to have a SME in the TMT.

Market Internationalization

Large multinational corporations may be present in a multitude of markets simultaneously with individual subsidiaries supporting their activities in each of these markets. Within the strategic management framework, it is assumed that a firm establishes a presence (subisidiary) in a foreign market in order to access the market or to access resources which are located in the market (Buckley and Casson, 1976; Hymer, 1966).

Foreign subsidiaries are embedded in environments which differ along many dimensions from those of the headquarters. Each subsidiary will have its own development history which leads to subsidiary differences in size, age, market position, and resource complements. The actual demands of the consumers in the various markets make it increasingly difficult to oversee and control processes as the organization

increases in the number of subsidiaries. As individual foreign markets develop and grow in real and relative importance to a firm's home market, the firm's top executive team needs to be able to synthesize the complexities of the information and knowledge of these markets in order to be successful (Ambos and Schlegelmilch, Bartlett and Ghoshal, 1989; Xu and Shenkar, 1994).

Because environmental differences create competing agendas within an organization and between subsidiaries and their headquarters, it is a strategic imperative for a MNC to be able to coordinate and control across all of its units, ensuring that there is a convergence towards a common goal (Bartlett and Ghoshal, 1989; March and Simon, 1993; Simon, 1979). For the top executive team, coordination and control requirements increase as the organization internationalizes and grows the number of subsidiaries within its structure. As the sales from international markets become more important to the financial success of the firm, the importance of the complexities of the marketing activities become more relevant to strategic planning processes. The organizational choice of which managerial structure is to be used for coordination and control becomes more critical (Birkinshaw and Moore, 1998; Malone and Crowston, 1994).

Bartlett and Ghoshal (1989) addressed many of the complexities and difficulties resulting from establishing subsidiaries in foreign markets. They built on earlier international strategy descriptions (Bartlett, 1986; Doz and Prahalad, 1987) based on a continuum of integration versus coordination and differentiation versus responsiveness. This approach led them to propose a typology of international strategies which an organization can pursue. These typologies have their corollary within the marketing function and are typified by their degree of centralized control or local market

responsiveness. Of these, two typologies are applicable to this research: 1) a global marketing strategy in which there is a high degree of integration (centralized control) and low responsiveness to local market requirements, and 2) a multi-domestic strategy in which there is a low degree of integration (decentralized control) and high responsiveness to local market requirements (Porter, 1986).

As both the number of international subsidiaries and their relative importance to the total revenue of the firm increase, the amount of environmental uncertainty and risk within the area of marketing responsibility increases. This research proposes that the organization will respond to increasing market uncertainty and risk with marketing management structures that are designed to reduce uncertainty by increasing the overall level of coordination and control within the marketing function.

The senior marketing executive, as the most senior marketing manager and member of the TMT, is responsible for ensuring that the organization's marketing strategy is accurately carried out. Whether a MNC chooses to pursue a global strategy, a multi-domestic strategy, or some variation on that continuum is not a deciding factor in whether or not an organization will choose to have a senior marketing executive. Rather, the degree of uncertainty in the coherent execution of an organization's chosen marketing strategy, as the number of subsidiaries increases, is the more likely deciding factor in whether or not an organization chooses to have a senior marketing executive. The increased level of coordination and control necessary to reduce the risk to the organization, as the number of subsidiary markets increase, will drive the choice of a marketing executive within the TMT. The presence of a senior marketing executive will

allow the TMT to more easily align corporate oversight with complex market scenarios. Thus:

Hypothesis 4: Firms with higher levels of internationalization will be more likely to have a SME in the TMT.

Figure 2.3 shows the predicted relationship between industry turbulence and market internationalization and the presence of a SME in the TMT.

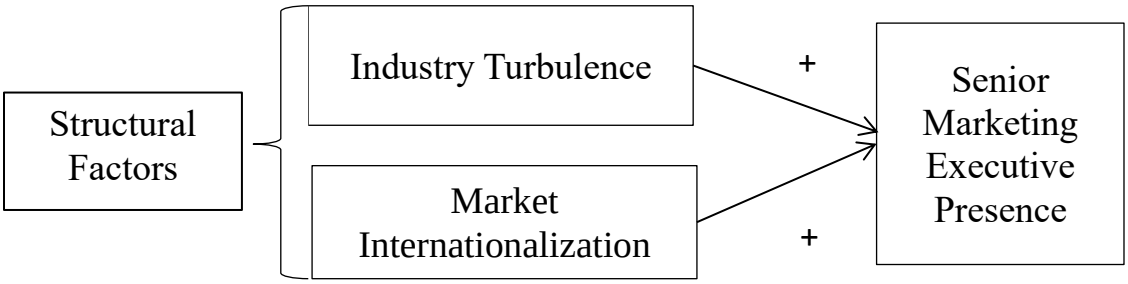

Figure 2.3: Structural factors as antecedents to the presence of the SME in the TMT

Strategic Factors:

Branding Strategy

Chandler (1962) argued that organizational structure follows strategy. The assumption that a strategy choice precedes the organization's structure, in addition to its intuitive appeal, has received considerable empirical support (Child, 1972, 1997). Donaldson (2001) and Lawrence and Lorsch (1967) have also argued that both environmental and strategic contingencies influence the organizational structure.

There are a number of taxonomic approaches used in the literature to classify branding strategies. Some of the most prominent typologies are the four category system proposed by Murphy (1987, 1989), the three category system proposed by Olins (1989), and the three category system of Laforet and Saunders (1994).

Olin's (1989) approach has a number of weaknesses. He only uses corporate identities, and the identification of the corporate subsidiaries with their respective corporate entities and corporate brands. This is not the focus of this research and would therefore engender misspecification of the construct of interest. Murphy's (1987, 1989) four classifications include corporate, product brand, balanced, and mixed strategies. However, there is not enough measurement clarity between balanced and mixed strategies for the design of this research. This research will use the approach based on that of Laforet and Saunders (1994) which classifies marketing strategies into three groups: corporate branding strategy, house of brands strategy, and mixed branding strategy (a combination of corporate and house of brands strategies). The Laforet and Saunders (1994) typology avoids some of the misspecification and construct clarity issues of other approaches. Laforet and Saunder's (1994) typology descriptions are as follows:

Corporate branding: The corporate name is dominant in promoting all of the firm's products and services. There is a standardization of the corporate brand and an emphasis is placed on a global marketing strategy that is coherent across markets. This is true throughout the corporation, its markets and subsidiaries. Examples of firms which primarily use a corporate branding strategy include USAA and BMW.

House of Brands: The corporate name is not used in branding the firm's products or services. Instead, the products and services are marketed using individual brand names and the marketing of the individual brands may be limited to individual and regional markets or may be managed uniformly across markets. The individual brands are often managed as a portfolio of brands. Examples of a firm that primarily uses a house of brands strategy is Procter & Gamble and its brands Pampers, Crest, and Iams.

Mixed branding: The corporate name is used along with a portfolio of house or family brands. Non-corporate name brands are typically strong and significant in value. Examples include the 3M corporate brand name and 3M Post-it and 3M Scotchgard brand names.

A corporate branding strategy is predicated on communicating, promoting, and maintaining a single corporate brand. The single brand is the vehicle and embodiment of the organization's market identity and value. When this is the case it is advantageous to centralize the decision making processes which maintain, protect, and control the brand. The centralization of brand control also makes it easier to align the management of the brand with the strategic planning process. In the case of a corporate brand, brand management and the strategic planning process are inextricable from one another. Organizations that have chosen a corporate brand strategy will also choose a structural configuration that effectively coordinates marketing operations synergistically across all their markets (Aaker and Joachimsthaler, 2000; Keller, 2003; Rao, Agarwal, and Dahlhoff, 2004).

In contrast, the house of brands strategy is a brand portfolio approach which may, on a brand level, deviate from corporate strategic goals. In such a situation, the product level brand development planning process and the corporate level strategic planning process do not have to be in complete alignment. The marketing management responsible for the individual brands are located at divisional or regional levels, not at the senior executive level. The organization's marketing focus is on specific market or brand development requirements.

Therefore, the presence of a senior marketing executive is expected to be more prevalent in an organization when brand related information inputs are important to the organization's strategic planning process, not when informational requirements market planning activities are oriented toward individual or regional markets. Thus:

Hypothesis 5: Firms which pursue a corporate branding strategy will be more likely to have a SME in the TMT than those pursuing other brand strategies.

Customer Type

The product market (business-to-business [B2B] or the business to consumer [B2C] marketplace) in which a firm competes is considered an important firm strategy contingeny. For the purposes of conceptualization, the choice of customer type is relevant in that it represents a firm level contingency that impacts marketing strategy and execution at all levels (Zeithaml, Varadarajan, and Zeithaml, 1988).

There are a number of dimensions on which B2B and B2C markets are differentiated: first, the level of customer concentration is higher in B2B segments, often reflecting a Pareto distribution, than in B2C segments; two, the choice of a supplier reflects a more rational and technical needs dimension in B2B segments than in the B2C segments; and third, there is a lower level of impulse or affect driven decision making involved in the B2B segments as compared to B2C segment purchase decisions (Segal, 1989).

In addition, there is a relational element to the B2B segment which requires higher levels of trust than is typical in a B2C transaction. This is due to the smaller number of transactions, the higher transaction value, and the potential for higher switching costs in B2B segments, as compared to B2C segments (Segal, 1989). Switching costs can lead to risk aversion and reluctance of consumers to switch suppliers, products, or services. The consequences of switching component suppliers for manufacturing processes and product characteristics can be significant. These potential switching costs tend to express themselves in B2B relationships that are closer and longer term than B2C relationships. The result is a lower overall transaction rate in B2B relationships, but a higher rate of transaction repetition (Segal, 1989).

The consistency of a firm's corporate image or reputation becomes more important in a B2C segment than in a B2B segment (Srinivasan, Lilien and Sridhar, 2011). Market specific product, stability, marketing message communication, and customer service consistency are more important in B2C segments. B2C sectors have much higher numbers of contact points with consumers and higher levels of innovation and introduction in the products and services being offered to consumers. The constant

change in products and contact points allows for a process of continual redemption of loyalty and innovation in presentation of brands (Dwyer and Tanner, 2008; Srinivasan, Lilien, and Sridhar, 2011).

The impact of individual product branding strategies is less important in the more technical and rational decision making B2B markets than in B2C markets. For example, bid or tendering processes in which the technical requirements of the product or service are explicitly stated and competition among multiple vendors is based primarily on price alone is common in B2B markets, but rare in B2C markets (Rangan, Moriarty, and Swartz, 1992). This reduces the importance of many marketing activities in the purchase process in B2B markets. In contrast, firms in the B2C markets rely heavily on affect centered mass communication based on large numbers of individual customers and invest heavily in brand development and product positioning that is projected through third party channels to the end consumer (Reed, Story, and Saker, 2004). It is expected that firms which are primarily, or solely, involved in B2C markets are likely to have senior marketing executives as members of their top management team. Thus:

Hypothesis 6: Firms whose business is primarily business to customer (B2C) will be more likely to have a SME in the TMT than firms whose business is not primarily B2C.

Product Type

In addition, this research makes the distinction between physical products and services in both B2B and B2C markets. Services, as compared to product goods, are less tangible, the production and consumption are temporally very compressed or take place

at the same time, are highly variable in their characteristics (less standardized), and are more perishable (Zeithaml, Parasumaran, and Berry, 1997). In addition, services have shorter life cycles and provide easier competitive entry. In short, services have a very different set of competitive concerns associated with them that create market uncertainty and dynamic fluctuation (Srinivasan, Lilien, and Sridhar, 2011). Dynamic and uncertain market conditions require a greater dedication of firm resources to assess market conditions, acquire and keep customers, and to identify new customer needs in order to stay ahead of the competition (Srinivasan, Lilien, and Sridhar, 2011). It is expected that firms which are primarily engaged in a service industry will be more likely to have a senior marketing executive in the top management team. Thus:

Hypothesis 7: Firms that primarily compete in a service goods market will be more likely to have a SME in the TMT than firms that compete in a product goods market.

Figure 2.4 shows the relationship between corporate brand strategy, business to customer strategy and service product strategy to the presence of a SME in the TMT.

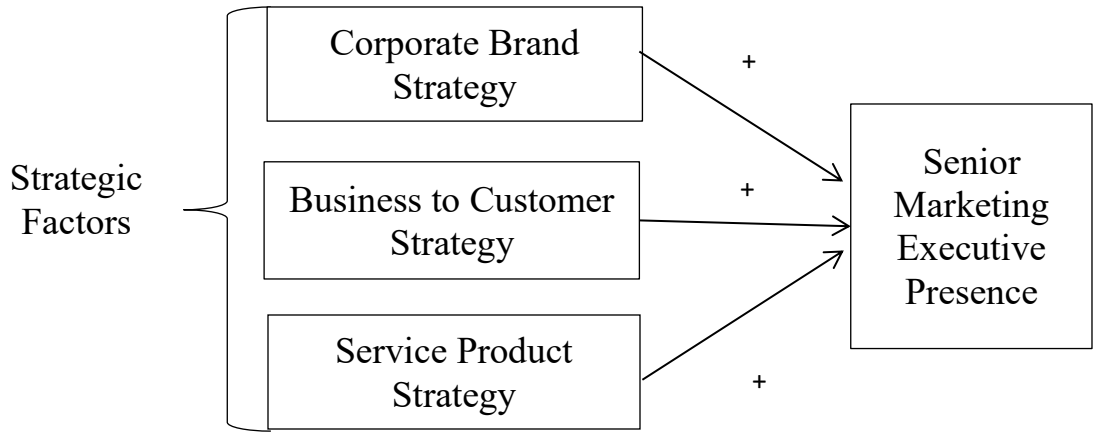

Figure 2.4: Strategic factors as antecedents to the presence of the SME in the TMT

Model II: The Impact of Choosing to have a Senior Marketing Executive on Firm Performance

Marketing Activity and Firm Performance

Traditionally, the influence of marketing activities on firm performance has been characterized as product-market oriented and directly related to sales performance. The four P's of product, pricing, placement, and promotion have described the tactical areas of business activity in which marketing traditionally holds sway. It is through these activity domains that marketing initiates, develops, and maintains the firm's relationship with customers (Kotler, 1984; Day, 1994). However, the corporate strategic level influence of the marketing domain on planning, communicating and delivering of the firm's value proposition to customers, managing the customer and stakeholder relationships is essential to financial and market based firm performance (Webster, 2005).

Firm revenue is driven by building and managing a positive and solid relationship with customers for the firm's products and services. Since the marketing domain is the primary business function responsible for creating and maintaining profitable customer

relationships, it directly impacts the revenue performance as well as the equity based valuations of the firm such as market capitalization (Kumar and Shah, 2009; Villanueva and Hanssens, 2007). Prior empirical research supports the notion that effective marketing activities are linked to sales growth, return on assets and measures of firm value (Boyd, Chandy and Cunha, 2010; Krasnikov and Jayachandaran, 2009). Additionally, positive relationships have been shown between brand strength and firm value (Mizik and Jacobson, 2008), advertisement and firm value (Joshi and Hanssens, 2009), and customer satisfaction and firm value (Anderson, Fornell, and Mazvancheryl, 2004).

A meta-analysis of the impact of marketing, R&D, and operations on firm financial outcomes done by Krasnikov and Jayachandran (2008) showed a consistent positive impact of marketing activities on revenue growth, market share, and profitability. These results support other research findings which indicate that a strong marketing capability can positively impact shareholder value (Srivastava, Shervani, and Fahey, 1998, 1999) and that effective, well executed marketing strategies support top line sales growth (Zuckerman and Hudson, 2007).

The Role of the Senior Marketing Executive

The presence of the senior marketing executive as a member of the TMT indicates a relatively greater marketing influence on decision making and planning in the development and implementation of strategic marketing activities of the firm. The role of a senior marketing executive in the TMT is to provide strategic leadership in all issues relating to the marketing domain. Boyd et al. (2010) identified three roles that a senior

marketing executive plays: first, an informational role in which market relevant information is communicated to the strategic management level of the firm; second, a decisional role in which marketing relevant issues are included in key strategic decisions of the firm; and third, a relational role in which marketing relevant relationships with external stakeholders are considered at the strategic management level of the firm. Because of the market relevant inputs that a senior marketing executive can bring to the strategic table, the presence of a senior marketing executive in a firm's TMT is expected to enable a firm to develop and implement marketing policies and strategies that are more market sensitive and effective in generating revenue growth and firm value, than if a senior marketing executive were not in the TMT. In particular, the ability of the senior marketing executive to consistently bring marketing resources to bear on strategic decision making through the TMT creates both dynamism and consistency in the creation and implementation of marketing strategy.

Although there is limited empirical research on senior marketing executive roles in the firm, it is possible to augment the present state of the literature with further research on 1) when the presence of senior marketing executives in the TMT are indicated by environmental contingencies, and 2) what impact a senior marketing executive in the TMT will have, given the environmental contingencies present.

The members of the TMT address management issues of importance to the firm that tend to be in domains that are characterized by complexity and uncertainty. Within the TMT context, the senior marketing executive is responsible for processing information from the marketing domain, communicating it to other members of the TMT, and actively supporting or making complex and uncertain decisions with respect to the

marketing domain that have significant potential impacts on firm resources and performance. McGovern et al. (2004) state that these activities include market monitoring, consumer assessment, brand strategy development, advertising strategy development, market planning, market research, and inter unit marketing coordination in a senior marketing executive's responsibilities. Other researchers have included new product development, sales forecasting, market entry, staff selection, and corporate structure to a senior marketing executive's areas of influence (Hopkins and Bailey, 1984; Piercy, 1986; Varadarajan, Jayachandran, and White, 2001). Although the possible areas of senior marketing executive responsibility may vary from firm to firm, it is fair to say that the senior marketing executive is integral to the process of developing, executing, and assessing the firm's product-market strategies, both near and long term.

This research looks at the effect of the presence of a senior marketing executive on two categories of firm performance metrics: accounting based (sales growth, return on assets and return on sales) and market based (Tobin's q, market to book and market to equity). This helps to directly relate the impact of the senior marketing executive to two distinct time horizons, one short (accounting based) and the other long (market based), or put another way, to a tactical impact and a strategic impact. The short term impact evaluation is directly tied to market-product performance and is defined as revenue based, the longer term impact is tied to the valuation of the firm through its stock performance which is defined as an equity (stock) based metric.

Previous research has shown very weak, conflicting, or no evidence of the presence of a senior marketing executive influencing firm financial performance (Boyd, Chandy, and Cunha, 2010; Nath and Mahajan, 2010). Weinzimmer et al (2003) found a

small positive impact on sales performance, but Nath and Mahajan (2008) reported no effect of the presence of a SME on sales performance. In later studies, Nath and Mahajan (2010) did find a small positive effect of the presence of a SME on sales performance, but they ascribed the effect to the amount of influence which a SME wields within the firm's TMT.

Prior research findings on the impact of a SME on market based performance metrics has been equally uneven. Nath and Mahajan (2008) found that the presence of a senior marketing executive did not impact firm value as measured by Tobin's q. However, recently, German et al. (2015) presented evidence for a positive impact on Tobin's q, and possibly excess stock returns (using Jensen's alpha), when a SME is present in the TMT. Boyd, Chandy, and Cunha (2010) were also able to tease out some of the complex interactions between senior marketing executive power and its impact on firm equity value in their event research on SME appointments. They were able to show small effects of SME appointment announcements on stock movements. All in all, there is a very mixed picture of when and how the presence of a senior marketing executive impacts firm financial performance and equity valuation.

In this research it is proposed that the contingency factors which are predicted to influence the presence of a SME in the TMT also act to moderate the positive impact of the SME presence on firm performance. Figure 2.5 shows the expected main and contingency effects of the SME on firm performance.

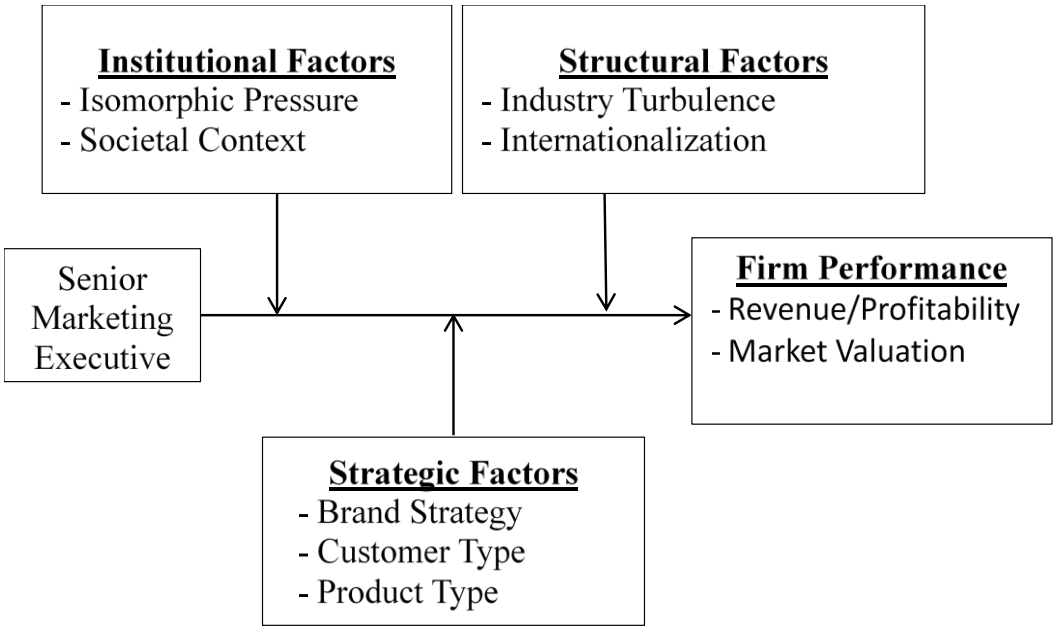

Figure 2.5: The model of the direct relationship between the SME and firm performance with moderating institutional, structural and strategic factors

Hypotheses

Revenue Performance

Sales revenue growth and profit margins are the most common objectives mentioned by senior managers, and they are direct and highly visible outcomes of product-market effectiveness. Sales, and the cash flow that it represents, are crucial to the firm's health and competitiveness. The responsibility for generating sales and achieving margin targets that generate profit is primarily the responsibility of marketing management (Brush, Bromiley, and Hencrickx, 2000; Homburg, Workman, and Krohmer, 1999).

Hambrick, Cho, and Chen (1996) found evidence that functional domain heterogeneity in the TMT, and the specialized knowledge that it supports, improves the decision making quality and performance of the TMT. Having a senior marketing executive to act as a conduit for marketing information and knowledge into the highest executive ranks of the firm will positively impact the firm's sales and profitability performance by supplying knowledge and expertise linking the customer to various processes within the firm (Day, 1994). In assessing the marketing function within the firm, Moorman and Rust (1999) state that the principal responsibilities of the marketing domain in an organization are making sure that the customer is connected with 1) the product, 2) service delivery, and 3) financial accountability. Although the assessment of the customer's connection with product and service delivery are outside the scope of this research, this research does use the measure of sales growth as an assessment metric for the impact of marketing on firm performance (Finkelstein and Boyd, 1998).

Firm Profitability Performance

The profitability performance of the firm is defined as the return on sales (ROS), and return on assets (ROA). There are several reasons why ROA is included. First, pricing strategy directly affects profitability, and therefore firm performance, and second, marketing strategy drives overall pricing strategy decisions, which assumes a strategic consensus at the highest executive levels on an issue of marketing strategy that directly affects firm performance outcomes (Homburg, Jensen, and Hahn, 2012; Kotler, 1984; Moorman and Rust, 1999). For example, if a market penetration strategy is chosen as a

firm strategy, then even though sales revenue may grow, profitability may fall due to pricing discounts. Both ROA and ROS are well documented in the TMT literature as metrics for measuring the impact of the top executives on firm profitability and performance (Hambrick and Cannella, 2004; Zhang, 2004).

Firm Valuation Performance

A key role of marketing, and the senior marketing executive, is to establish a relationship with the customer and link customers to sales outcomes (Moorman and Rust, 1999). How well, or how poorly, a firm is able to do this is reflected in its revenue growth and profitability. The market's expectations of the future revenue and profit trend is encompassed in the firm's share price (Krasnikov and Jayachandran, 2008; Srinivasan and Hanssens, 2009).

Marketing capability is based on the knowledge of customer needs, the ability to respond to those needs, and the ability to forecast the future status and character of those needs. Much of the knowledge and capability that is embedded in the marketing domain is difficult to codify. It is socially complex, constantly changing and tacit in its nature (Simonin, 1999). Therefore, the direct participation of marketing, in the form of the presence of a senior marketing executive in the TMT, is critical to the successful development and implementation of marketing strategy. Marketing resources and capability have been shown to positively impact shareholder value (Srivastava, Shervani, and Fahey, 1998, 1999). Although prior research outcomes have been mixed, it is expected that consistent participation of a senior marketing executive in the TMT will

result in firm performance signals which will positively influence share valuation of the firm.

The presence of a senior marketing executive in the TMT should improve the cross-functional integration of knowledge, communication, consensus building, and commitment to marketing issues within senior executive ranks. These activities are seen as necessary for the formulation, coordination, and execution of optimal marketing strategy (Menon, Bharadwaj, Adidam, and Edison, 1999). The improvement in the execution of these important internal processes should lead to revenue growth, profitability, and superior stock performance of a firm.

In general, it is expected that the presence of a SME in the TMT will positively impact both financial and market metrics of firm performance. Thus,

Hypothesis 8a: The presence of a SME in the TMT will positively impact revenue/profitability performance metrics of the firm.

Hypothesis 8b: The presence of a SME in the TMT will positively impact market value performance metrics of the firm.

Figure 2.6 shows the proposed positive relationship between the presence of a SME on the TMT and firm performance.

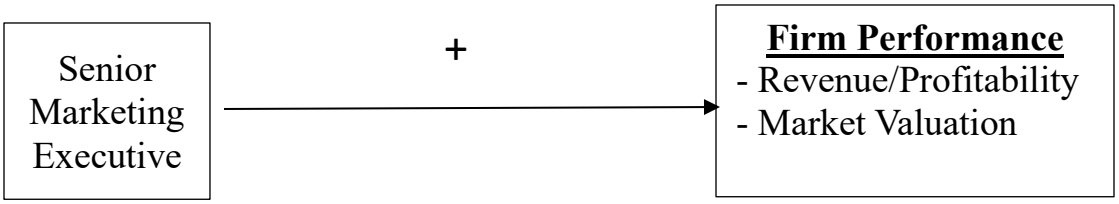

Figure 2.6: The main effect of the presence of a SME on firm performance

Institutional Factors:

Isomorphic Pressure

Institutional and neo-institutional perspectives on organizational structure soften the rational or functional requirements of the chosen structures. Instead, they emphasize the isomorphic pressures exerted on organizational action and structure which are accepted, legitimated, or simply taken for granted within an organizational field, without a strict requirement of rational utility (DiMaggio and Powell, 1983; Scott, 1987). Within these "fields" organizations choose their structure and behavior, in part, to conform to norms that they believe will increase their resources and legitimacy in the eyes of important stakeholders. Firms may also practice mimetic isomorphism as a short-cut to dealing with highly uncertain or turbulent environments.

The largest and most important firms within an organizational field will exert considerable isomorphic pressure on the other firms within the field. This pressure may be in favor of having a senior marketing executive, or not. It is expected that if the weight of isomorphic pressure is in favor of the presence of a senior marketing executive, then there is a rational advantage to having a senior marketing executive that will express

itself in higher short and long term performance in sales, profitability and market value. Thus:

Hypothesis 9a: The effect of the presence of a SME on revenue/profitability performance metrics of a firm will be positively moderated the greater the level of isomorphic pressure for a SME in the TMT within the industry segment.

Hypothesis 9b: The effect of the presence of a SME on the market value performance metrics of a firm will be positively moderated the greater the level of isomorphic pressure for a SME in the TMT within the industry segment.

Societal Context:

This research has proposed that two aspects of the societal context, 1) the general acceptance, or cultural orientation, toward marketing and its status as a functional business area, and 2) the type of governance structure used, affect the prevalence of having a senior marketing executive in the top management team. This research also proposes that these same aspects, when coupled with the presence of a senior marketing executive in the top management team, will positively influence firm performance.

Marketing Acceptance

The level of societal acceptance of marketing and marketing activities can also be interpreted as the importance of marketing within a society. Status and influence of marketing within society and within business organizations are a result of the societal level understandings surrounding marketing and marketing activities. The level and

direction of both have been debated for some time (Day, 1992; Verhoef et al, 2011). There is evidence that societal levels of the acceptance of marketing activities and the perception of it as a professional field varies across countries, including the USA, UK, and Germany (Homburg, Workman, and Krohmer, 1999; Verhoef et al, 2011).

The link between the acceptance of marketing and marketing activities on a firm level and firm performance is not consistent. Recent scholarship has indicated a positive relationship between marketing capabilities and firm performance (Krasnikov and Jayachandaran, 2008). This research proposes that societal level marketing acceptance will support the presence of marketing capabilities (senior marketing representation in the top management team), which will be further leveraged by the level of societal marketing acceptance to positively influence market and revenue based firm performance outcomes (Krasnikov and Jahachandaran, 2008; Verhoef et al, 2011). Thus:

Hypothesis 10a: The effect of the presence of a SME on the revenue/profitability performance metrics of a firm will be positively moderated the greater the level of societal marketing acceptance.

Hypothesis 10b: The effect of the presence of a SME on the market value performance metrics a firm will be positively moderated the greater the level of societal marketing acceptance.

Governance System

The regulatory environment in which a firm operates is part of its societal context. The dimension of the societal context that is of interest is the set of governance regulations

which apply to public stock corporations. These regulations are generally established at the country level and are in effect for all public stock corporations incorporated in the country, although most of the governance structure requirements in the United States are legislated at the state level.

In this study, the interest in the type of governance structure of a firm is related to the differential ability of a member of the TMT to positively influence and impact firm performance dependent, in part, on whether they are embedded in a unitary or dual governance structure. The rationale for a firm performance effect in conjunction with the presence of a senior marketing executive in governance is explained more fully.

Corporate governance statutes are viewed within institutional theory as part of Scott's (1987) coercive pillar. Normative and cultural pressures of the correct way to do things are expressed in statute. So, pressures from all three of Scott's pillars are supporting compliance to expected governance practices, legitimizing and empowering both the firms and their senior managers participating in the governance structure.

When the marketing function, in the form of the senior marketing executive, is included in the corporate governance level of management (board member), it can be expected that this signals high access of the marketing function to resources under the control of the firm. It also signals that the marketing function has the legitimacy and power to wield these resources in fulfillment of objectives and goals within the marketing domain. The type of governance system in which a senior marketing executive is a member will influence the impact of the senior marketing executive.

Although this research is not focused on corporate governance issues per se, it is concerned with the possible ramifications of governance structures on the ability of a senior marketing executive to impact the performance of the firm. I will first describe the basic structural and procedural requirements of each system and then I will explain how each system may bring its own sets of pressures to bear on the senior marketing management.

The One Tier System

Although there are a number of variants of the one tier (unitary) board system, this research is restricted to the U. S. and U. K. variants. The one tier board system used in the U. S. and U. K. is reflective of the Anglo-American governance culture which emphasizes shareholder interests. There is a single board and it acts as both a management body and a supervisory body at the same time. It is comprised of both senior company executives and external directors who are elected by the shareholders. The CEO of the company plays a very prominent role in the one tier board and may even be the Chairman of the Board. Because members of the firm's executive management are members of the board, the non-executive board members have direct exposure to senior firm management and their information when assessing strategic plans or supervising business activities. As a result, unitary boards are active in both management and supervision of operational activities and the development of strategic plans.

For the U.S. headquartered and incorporated companies, corporations are directly governed by state laws of incorporation, not federal law. Most states have adopted the Model Business Corporation Act (MBCA), a set of laws designed to harmonize

incorporation and governance law across states. As a practical matter, many large public corporations are incorporated in the state of Delaware and, although Delaware is not an adherent to the MBCA, Delaware corporate governance law does not deviate from the general description of the one tier system described here.

For the U. K. headquartered and incorporated companies, the U.K. Corporate Governance Code comprise the set of good governance recommendations that public corporations are expected to follow, and have been a part of the statutory listing requirements for companies on the London Stock Exchange. Although compliance is not required, almost all public corporations follow the unitary board governance structure.[2]

The Two Tier System

The two tiered (dual) board system is used in Germany and most other Continental European countries. However, some European countries allow public stock corporations to choose which board form they would like to follow. Therefore, I have chosen to limit the present research to companies that are both headquartered and incorporated in Germany. In Germany, the dual board system is ensconced in several regulatory statutes, the German Stock Corporation Act (*Aktiengesetz*), the German Codertermination Act (*Mitbestimmungsgesetz*) and the German Corporate Governance Code.

The German regulatory statutes require that German stock corporations be managed by an executive management board (Vorstand) that is comprised only of

[2] There are a number of good overviews of the governance regimes in the European Union including Davies, Paul L.,"Board Structure in the UK and Germany: Convergence or Continuing Divergence?" Available at SSRN: http://ssrn.com/abstract=262959 or http://dx.doi.org/10.2139/ssrn.262959

executive directors and is responsible for the management of the corporation. They also require a second board, a supervisory board (Aufsichtsrat), that is comprised only of non-executive directors, including employee representatives, whose purpose is to supervise the activities of the management board. [3]

The management board's mandate and activities are both operative and strategic and are comparable to those of senior executive managers in a U. S. corporation. However, members of the German management board, including the Chairman, are considered co-equals and manage the corporation's activities collectively. The formal wording of this charge in German law is "primus inter pares" and exhorts that the members of the management board act as equals in a collective management of the corporation's activities. This places collective responsibility and liability on the members of the management board for all activities and decisions, and importantly for this research, assumes a high degree of competence of each member in all business matters. However, individual management board members may be given greater responsibilities in various functional areas of business activity, for example, marketing. If this is the case, this is indicated officially in proxy materials, but does not absolve the other management board members of co-responsibility as indicated under the German Stock Corporation Act and the German Corporate Governance Code. A member of the management board that has been given specific responsibilities (*Ressortverantwortung*) for Marketing would be the equivalent to a Chief Marketing Officer in a U.S. corporation.

[3] The Aktziengestz is part of the larger Bundesgesetzbuch (BGB) codex. It guides actions related to stock corporation legal entities. It was passed into law in 1966 and comprises 410 separate paragraphs, though some have been repealed. The German Corporate Governance Code is part of the Aktiengesetz.

The two tier governance system centralizes the responsibility for the management of the firm within the management board. The members of the management board are collectively responsible for the firm's operative and strategic management decisions. Responsibility for specific business domains, including marketing, may be expressly assigned to one or more individuals, but this is not always the case. It is likely that in such a collective scenario, unless the marketing responsibility is explicitly stated, decisions affecting marketing activities may be swayed by members with power, but little marketing competence, or that marketing issues, because they do not have a dedicated advocate with market specific knowledge, will have little influence in the strategic planning and decision making processes.

Further, in the two tier system, the supervisory board (Aufsichtsrat) may be more distant and isolated from managerial concerns of functional areas such as marketing. This is due to several characteristics of the two tier system in Germany: one, the board size tends to be very large (on average 20 members) which reduces the opportunity for marketing relevant information to be communicated to supervisory board members (Milne, 2007); two, half of all supervisory board members are labor representatives due to the codetermination requirement (*Mitbestimmungsrecht*) which dilutes the equity performance orientation of the board (Dammann, 2003); three, the supervisory board includes representatives of creditors, who, as debt holders, are typically reticent to invest corporate resources into future oriented strategic marketing projects, but would rather marshal resources to the satisfaction of obligations (Kraus and Britzelmaier, 2011); four, the board has only one inside director, the chairman (Karus and Britzelmaier, 2011). This leads to a lower level of marketing relevant information and orientation among the

supervisory board and thus less support for pro-marketing strategies and resource allocations. The result is lower integration of marketing relevant information into plans and controls in two tier governance arrangements than would be expected in the case of one tier governance.

When one or more members of the management board explicitly carry responsibility for the marketing domain, there is a clear indication that marketing activities are recognized as being very important and are being represented at the highest levels of management. Explicit marketing responsibility of management board members in the two tier governance system will affect marketing activities in a similar fashion as having a senior marketing executive in a one tier board.

The presence of a senior marketing executive on a one tier-board provides them with direct contact with executive and non-executive directors. They, therefore, have the opportunity to fully communicate and advocate marketing imperatives and prerogatives, to build close relationships and better manage conflicting agendas directly with both managerial and supervisory stakeholders on all strategic and operative decisions.

The type of governance system used in a country in which a firm is headquartered and incorporated is a cultural expression of socially constructed understandings of the best way to supervise organizations (Scott, 1987, 2001). The governance system will exert more than just a ceremonial influence. It will also exert a functional influence by giving a senior marketing member both soft and hard influence with which to support decisions critical to the firm's success in the marketplace.

In general, it is expected that the presence of a senior marketing executive in a one tier board system will be more effective in representing the marketing domain than a senior marketing executive in a two tier board system. Thus:

Hypothesis 11a: The effect of the presence of a SME on the revenue/profitability performance metrics of the firm will be positively moderated when the SME is a member of a unitary board, and greater than if they are member of a dual tier board.

Hypothesis 11b: The effect of the presence of a SME on the market value performance metrics of the firm will be positively moderated when the SME is a member of a unitary board, and greater than if they are member of a dual tier board.

Figure 2.7 shows the proposed moderating relationship of institutional level factors. The societal context variables, Marketing Acceptance and SME Board Membership, and the institutional variable, SME Isomorphic Pressure, act as contingency moderators on the direct relationship between the presence of a SME on the TMT and firm performance.

Structural Factors:

Industry Turbulence

Some industry segments are highly uncertain because of segment growth. When consumer demand grows rapidly there is a tremendous amount of uncertainty. There is an ever increasing flow of information about the external and internal environments that needs to be assessed quickly and accurately. The marketing information processing

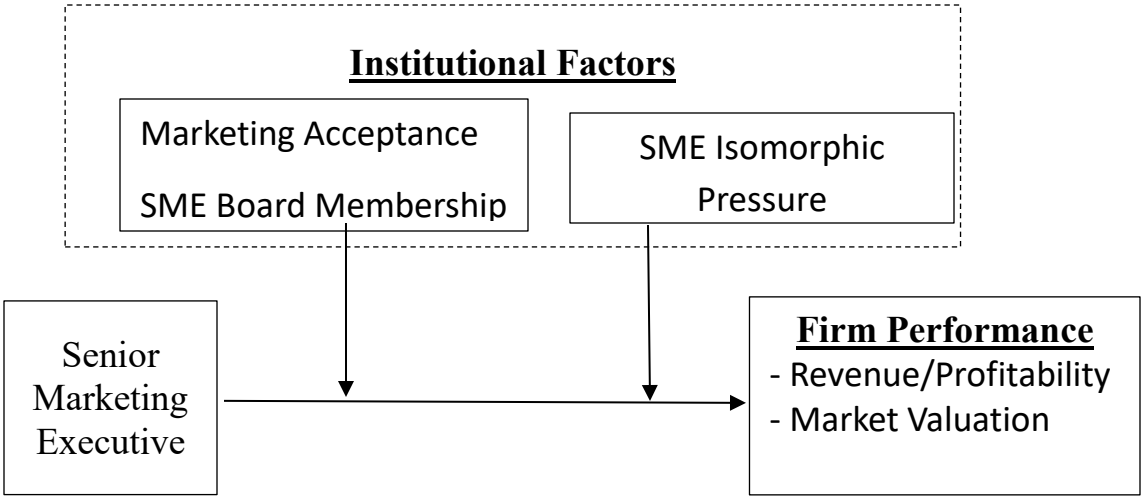

Figure 2.7: The moderating effects of institutional factors on the SME's impact on firm performance

requirements include information about customer preferences, the capabilities of competitors, the progression of technological developments, and the appropriate structure for distribution and service networks, optimal pricing, and sales forecasting (Porter, 1985).

Top management teams need to make long-term strategic plans and investment decisions regarding capital investments, market entry, and product development, to name a few. The interpretation of market information requires the input of experienced and capable marketing managers. It is expected that the presence of a senior marketing executive in firms which operate in industries that are growing quickly are able to take advantage of market conditions, nimbly adjust to any changes, and more accurately forecast future market conditions. The more dynamic the environment is, the more important it becomes for management to be able to scan and interpret the environment (Cyert and March, 1963; Daft and Weick, 1984; Finkelstein and Hambrick, 1996;

Hambrick, Finkelstein and Mooney, 2005). Therefore, it is expected that firms in turbulent industries that have a senior marketing executive in their TMT will be better able to take advantage of their market's turbulence (Homburg, Workman, and Krohmer, 1999). Thus:

Hypothesis 12a: The effect of the presence of a SME on the revenue/profitability performance metrics of the firm will be positively moderated the greater the level of turbulence in the industry segment.

Hypothesis 12b: The effect of the presence of a SME on the market value performance metrics of the firm will be positively moderated the greater the level of turbulence in the industry segment.

Internationalization

Firms which have subsidiaries in many different country markets operate in a complex environment. Similar to turbulent markets, the information processing demands of senior management are high for organizations with many subsidiaries embedded in different national contexts, as are the coordination and control requirements (Ambos and Schlegelmilch, 2007; Powell, 1986; Martinez and Jarillo, 1991; Xu and Shenkar, 1994). Multinational firms have to have managerial structures and capabilities that allow them to process market information and coordinate and control marketing activities across many different markets simultaneously and effectively (Bartlett and Ghoshal, 1989; Kotler, 1984; Moorman and Rust, 1999).

It is important that marketing capabilities be part of the senior executive decision making team in order for a firm to accurately and effectively assess market conditions (Cyert and March, 1963; Finkelstein and Hambrick, 1996; Moorman and Rust, 1999). In addition, the competing control and coordination demands of activity integration and localization increase as the number of multinational subsidiaries increases (Martinez and Jarillo, 1991). This adds to the cognitive complexity to which executives are exposed and increases the decision resource requirements of the marketing domain in order to effectively manage this complexity (Day, 1994; Simon, 1979).

The type of marketing strategy that a firm chooses will also influence how much demand will be made on senior management resources for information processing, control and coordination. A multi-domestic corporate strategy delegates most marketing decision responsibilities to the subsidiary level, whereas a global marketing strategy may require considerably more central marketing resources to monitor and coordinate the marketing functions at all levels of the organization (Porter, 1986).

Senior marketing executive roles and responsibilities are often linked with brand management and the development and maintenance of a consistent corporate brand image across all units and markets of the firm. The more national subsidiaries a firm has the more complex and difficult the task of coordinating, controlling, and managing marketing activities and messages across these units (Nath and Mahajan, 2008).

The results of prior empirical research on the impact of geographic diversification on firm performance are inconsistent, but tend to fall on the side of increased operating performance (Grant, 1987). This is in keeping with the resource based view of the firm

and the ability to arbitrage resources across national borders to enhance firm performance (Barney, 1991; Kogut, 1992). The combined effects of geographic diversification and product diversification have a quadratic relationship to firm size. This indicates that as the firm increases in geographic diversity, marketing resources become less impactful and less able to overcome control and coordination issues. (Tallman and Li, 1996). Thus:

Hypothesis 13a: The effect of the presence of a SME on the revenue/profitability performance metrics of the firm will be positively moderated the greater the level of internationalization of the firm.

Hypothesis 13b: The effect of the presence of a SME on the market value performance metrics of the firm will be positively moderated the greater level of internationalization of the firm.

Figure 2.8 shows the proposed moderating relationship of structural level factors. The variables of industry turbulence (industry segment concentration, industry segment growth) and internationalization act as contingency variables on the direct relationship between the presence of a SME on the TMT and firm performance.

Strategic Factors:

Brand Strategy

Firms which pursue a corporate branding strategy have a tremendous amount of firm value dependent on the effective management of the brand. They use the brand name for all, or most, of the firm's products and services. It is highly likely that a corporate

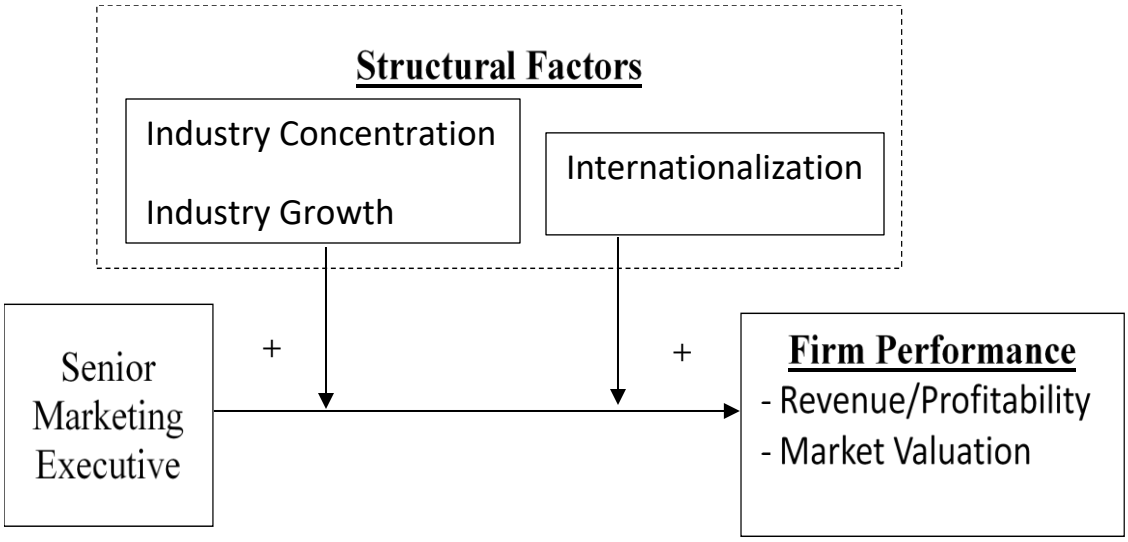

Figure 2.8: The moderating effects of structural factors on the SME's impact on firm performance

branding strategy will be more successful if the firm dedicates senior management resources to the effective management of the brand. Brand management is within the domain of marketing and the executive responsible should be the senior marketing executive, not a mid-level manager, which is often the level of brand managers (Keller, 2003; Rao, Agarwal and Dahlhoff, 2004; Webster, Malter, and Ganesan, 2005). Thus:

Hypothesis 14a: The effect of the presence of a SME on the revenue/profitability performance metrics of the firm will be positively moderated with the greatest positive effect seen with a corporate branding strategy.

Hypothesis 14b: The effect of the presence of a SME on the market value performance metrics of the firm will be positively moderated with the greatest positive effect seen with a corporate branding strategy.

Customer Type

The product market in which a firm is primarily active defines the customer type which is important to its success and the marketing activities in which it engages. A common typology of a firm's customers and activities is that of being either business-to-business (B2B) or business-to-consumer (B2C). The B2B organization is typified as having repeat transactions with customers over a long period of time, direct relationship development, sales based on technical issues, custom product development, fewer customer numbers, and demand being driven by product performance characteristics (Ford, et al. 2003; Hakansson, Johanson, and Wootz, 1976, Harmon, Conrad, and Brown, 1997). The burden of satisfying customer needs and managing customer relationships lies with sales and product development domains. The classic consumer marketing outreach is less relevant than in consumer product B2C markets.

Since there are often fewer customers in a B2B business than B2C, it is expected that the customers will have relatively more power than in a B2C setting. As Boyd, Chandy, and Cunha (2010) have shown, lower power of the senior marketing executive relative to powerful external customers relates to lower firm performance. It can be expected that B2B firms will perform lower than B2C firms and that senior marketing executives will have relatively less impact in B2B firms than in B2C firms. Thus:

Hypothesis 15a: The effect of the presence of a SME on the revenue/profitability performance metrics of the firm will be positively moderated with the greatest positive effect seen when the firm is primarily B2C oriented.

Hypothesis 15b: The effect of the presence of a SME on the market value performance metrics of the firm will be positively moderated with the greatest positive effect seen when the firm is primarily B2C oriented.

Product Type

As has been previously described, this research applies a further distinction in the type of product-market in which a firm is active, whether the firm is primarily active in the service goods market or the product goods market. This is important because service goods and product goods differ on many dimensions which are sensitive to the presence of a senior marketing executive.

Service goods are less tangible, their production and consumption take place at, or very nearly, the same time, they are highly variable in their characteristics (less standardized), they are more perishable, they have shorter lifecycles, and their markets usually have lower barriers to entry. In addition, the marketing environments of service goods are more uncertain and dynamic than product goods marketing environments (Srinivasan, Lilien, and Sridhar, 2011; Zeithaml, Parasumaran, and Berry, 1985). The dynamic and uncertain market conditions of service products require a greater dedication of firm resources to assess and process market information, acquire, keep, and identify new customer needs in order to stay ahead of the competition (Srinivasan, Lilien, and Sridhar, 2011). It is expected that the performance of firms which are primarily engaged

in a service industry and have a senior marketing executive in their TMT will perform better. Thus:

Hypothesis 16a: The effect of the presence of a SME on the revenue/profitability performance metrics of the firm will be positively moderated with the greatest effect seen when the firm is primarily service goods oriented.

Hypothesis 16b: The effect of the presence of a SME on the market value performance metrics of the firm will be positively moderated with the greatest effect seen when the firm is primarily service goods oriented.

Figure 2.9 shows the proposed moderating relationship of strategic level factors. The strategic variables of brand strategy (corporate brand, house brand or mixed brand), product type (financial or physical) and customer type (business to business, business to customer or a mixture of both) act as contingency variables on the direct relationship between the presence of a SME on the TMT and firm performance.

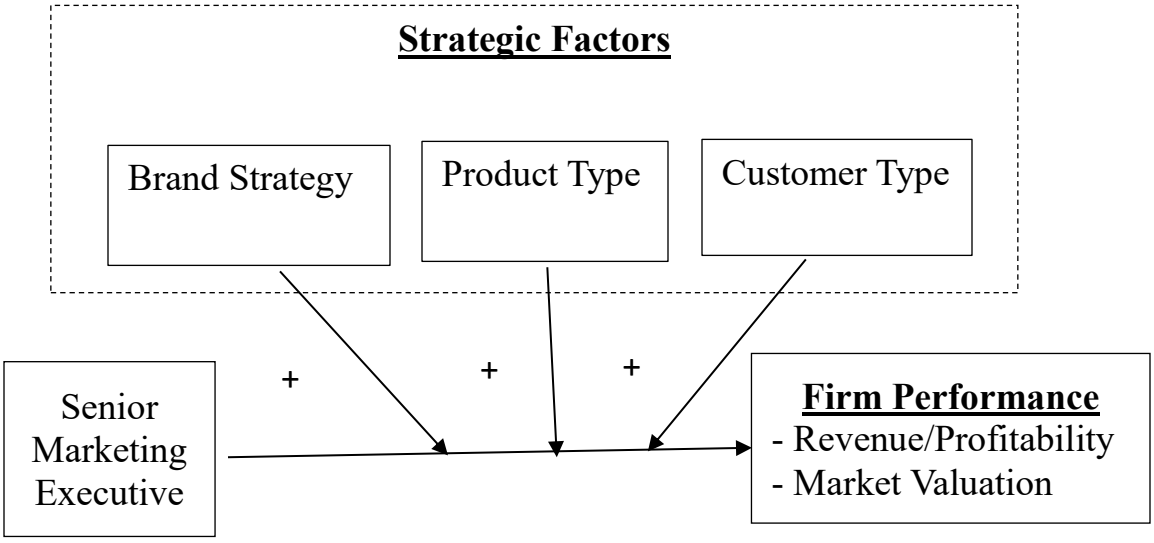

Figure 2.9: The moderating effect of strategic factors on the SME's impact on firm performance

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

Research on the structure and effectiveness of senior executives has typically made use of survey data. However, this research uses secondary data sources instead in order to enable a longitudinal approach to data capture and analysis across factor level groupings (institutional, structural, and strategic) for longer periods of time. It is felt that secondary longitudinal data would be more effective when addressing issues associated with environmental forces, as in the case of contingency and institutional influences on organization structure, and organization structure on firm performance because of the likelihood of a temporal lag between cause and effect (Nath and Mahajan, 2008; Zorn, 2004).

Sample and Sources of Data

The sample used in this research is comprised of firms selected using Standard & Poor's COMPUSTAT North America and Global databases over a span of eleven years (2000-2010). The firms were studied over a time period in which a worldwide economic downturn took place that is commonly viewed to have begun in the spring of 2008. This is intentional, to further extract information about the relationship between the environment and the firm. The period of 2008 through 2010 is addressed separately in the results section. Only USA firms with annual sales greater than $250 million in year 2002

are included.[4] Because 2002 acts as an "anchor" year and the data sets are not balanced, the largest number of firms appear in the data set in 2002. There is attrition in both prior and later years. The firm size restrictions are relaxed in the samples from Great Britain and Germany. In both the UK and Germany, the firms with greater than $100 million in sales in year 2002 were included. If this had not been done, it would have been difficult to establish sample sizes in the industry segments of interest large enough to make meaningful inferences.

The data are unbalanced panel data collected over a timeframe of 11 years. The data set includes 7,112 firm years of observations which cover 724 individual firms from three countries. Within the aggregated data set, the USA data includes 524 firms and 4,936 firm years of data, the German data includes 124 firms and 1,339 firm years and the UK data includes 76 firms and 837 firm years of observations. Tables A.1 in Appendix A describe the distribution of the firms across industry segments in the overall sample and in each of the country subsamples. In keeping with the prior industry segment selection of Nath and Mahajan (2008), the observations were collected in the two digit SIC industry segments of 25, 26, 28, 30, 33, 34, 35, 36, 38, and 73.[5] Because the data set is unbalanced, the number of observations can vary depending on the variables being assessed.

[4] Since this research builds on prior studies (Hambrick and Cannella, 2004; Nath and Mahajan, 2006, 2008, 2011), the same general dataset building guidelines established in these studies were followed for the USA sample. The major restriction is that all firms without R&D expense data are dropped from the data set.
[5] The sample of firms used in the study are limited to the following two-digit Standard Industrial Classifications (SIC): Business Services (73), Industrial Machinery & Equipment (35), Electrical & Electronic Equipment (36), Instruments & Related Products (38), Chemicals & Allied Products (28), Rubber & Miscellaneous Plastic Products (30), Fabricated Metal Products (34), Furniture & Fixtures (25), Paper & Allied Products (26), and Primary Metal Industries (33).

In addition to the main sample data set just described, a second data set was also created using the selection criteria published by Nath and Mahajan (2008, p. 70). This data set was used to recreate, as closely as possible, their results, and to test their model on an extended time frame of eleven years (increasing it from the original five years). Despite careful attention to their directions, it was not possible to exactly replicate a data set with the same descriptive statistics for the same five-year time period from 2000-2004. The replicated data contained 166 firms and 757 firm years, rather than the 167 firms and 668 firm years found in the original data. A more detailed comparison of the descriptive statistics and distribution of the firms across industry segments is given in Appendix D. Although not identical, the two data sets are very similar. As a result, the replicate set was used for comparative analyses.

Variables and Measures

Model 1: The Antecedent Model

Table 3.1 summarizes the variables and measures used in testing the proposed antecedents to the presence of a SME. Only secondary sources were used for the data collection. These sources included the databases offered through Standard & Poor's COMPUSTAT, the PASSPORT MONITOR database, annual reports (Form 10-K, 20-F, or similar annual reporting), proxy reports and corporate websites.

The operationalization of the SME was done by identifying the most senior executive identified by "marketing" in their title, or with explicit functional responsibility for marketing, in a firm's top management team (TMT), as reported to the responsible

national financial authorities (SEC, FSA or BaFin). They may carry the Chief Marketing Officer, Executive Vice President, Senior Vice President, Vice President, Director, or other titles. Following Hambrick and Cannella (2004), this analysis assumes that the decision to have a senior marketing executive in the TMT is revisited every year. The TMT has been operationalized in a variety of ways by previous researchers (Gordon et al., 2000). This research follows the definition employed by Hambrick and Cannella (2004) and recognizes the TMT as any executive team manager named in the 10-K or proxy filings with the Securities and Exchange Commission (SEC) for U. S. listed public stock corporations; the same is true for those executives named to the executive council in the annual report or other filings with the Financial Services Authority (FSA), Financial Conduct Authority, or precursor entities for listed public stock corporations in Great Britain; the same is true for those executives named to the management committee in the annual report or other filings with the *Bundesanstalt fuer Finanzdiensleistungsaufsicht* (BaFin) for listed public stock corporations in Germany.

Dependent Variable

Using the definitions for the TMT and senior marketing executive presented here, the presence or absence of a senior marketing executive in the TMT of a firm is established. The presence or absence of the senior marketing executive is then coded as 1, for the presence of a senior marketing executive in the TMT, or 0 for the absence of a senior marketing executive in the TMT.

Independent Variables

Institutional Factors

Isomorphic Pressure: The isomorphic pressure within an industry segment (organizational field) regarding the most appropriate executive structure is captured by ranking the largest (and presumably most successful and legitimate) firms (in revenue) for each year within a segment to create a rank of the top four (CR4) firms using a Herfindahl-Hirschman index approach (McAlister, Srinivasan, and Kim, 2007). The ratio of firms within the CR4 with a SME compared to those without a SME is calculated for the CR4 group within each two-digit SIC industry segment for each fiscal year. This creates a variable which will vary in value from 0 to 1. The rationale for this approach is the belief that the chosen organizational structure of the largest (and historically most economically successful) firms within a segment carry more legitimacy in signaling superior structural organization to the rest of the industry segment members.

Societal Context: The societal context of the country in which an organization is embedded is represented by the country in which it is headquartered. The location of the headquarters is the environment which exerts the most influence on the organization's choices of organizational structure and management composition. In addition, it is the environment from which the TMT members most often originate, and it is the environment that is the most influential in informing the opinions and cognitive processes of the TMT members.

Countries differ on the degree to which their societies embrace marketing activities (Wurf, Bakker and Picard, 2008). The degree to which marketing and

marketing activities are considered legitimate is, in part, a function of the societal context in which these activities take place. The degree of collective legitimacy of marketing at the societal level is expressed through the mechanism of the activities and structures of marketing considered valid. In order to assess the degree to which marketing as a discipline and its activities are legitimized within a particular societal context, the level of media in advertising activity in the focal countries is used as a proxy for the level of consensus. Prior research supports this approach as an accurate measure of the marketing orientation and also the degree of acceptance of marketing as an organizational function in a country (Bilektine and Haack, 2015; Tost, 2011; Wurff, Bakker and Picard, 2008). To capture the societal orientation (legitimation) of a country toward marketing, marketing acceptance, two measures are used. The first measure, *Marketing Context* is a composite measure comprised of, 1) the total expenditures on media and advertising divided by the national gross domestic product and, 2) the total expenditures on media and advertising divided by the population (per capita value). These measures are then standardized and summed for an index score by country and year, giving the *Marketing Context* variable. [6] In this way, country level measures, indicating the total allocation of resources to activities strongly associated with marketing, both relative to the size and mix of the economy and the population, are representative of the level of professionalization of media and advertising activities and

[6] Media and advertising expenditures are historically the largest single marketing expense category (40% or greater of the total marketing outlays) in the USA, UK and Germany (Barwise and Styler, 2002). A variety of sources indicate that although media and advertising expenditures are influenced by many factors such as the economic cycle, the mix of industrial and consumer segments, the level of economic development, etc., they represent, in aggregate, a relatively stable percentage of total economic activity at the country level (Wurff, Bakker and Picard, 2008).

the legitimization of marketing (Pan, Zinkhan and Sheng, 2007; Srinivasan and Hannsens, 2009).

Structural Factors

Industry Turbulence: The degree of industry segment turbulence is assessed by two different measures. These measures are, 1) the industry segment growth rate, which is measured as a running average of the segment's total sales over two successive years at the country and two-digit SIC level. The degree of change in sales growth, either positive or negative, is an indication of the amount of turbulence in the segment (Eisenhardt and Bourgeois, 1988), and 2) the level of market concentration of an industry segment at the two-digit SIC level. The literature has identified that a lower market concentration index indicates a higher level of competition and therefore a more turbulent environment (Eisenhardt and Bourgeois, 1999). The Hirschman-Herfindahl industry concentration index is used as a measure of the level of competition in an industry segment (Hou and Robinson, 2006). The formula for calculating the industry concentration (IC) level in each segment was as follows:

$$IC_{jt} = \Sigma_i s^2_{ij}$$

where s_{ij} is the market share of the firm i in industry j. The concentration index was calculated for each country and fiscal year. Each measure was standardized and then the two standardized values were summed to create a composite measure of industry segment turbulence. The concentration being a negative value and the growth being a positive value.

Table 3.1: Variables, measures, values and sources of data for antecedent model

Type	Variable	Measure	Value	Source
DV	Senior Marketing Executive	Indicator of the presence of a SME in the TMT (1), or not (0).	0 or 1	Annual reports (10-K, 20-F), proxy statements or corporate website
Institutional Factors	Isomorphic Pressure	The incidence ratio of SME (presence/absence) within C4 by year and industry segment	0 to 1	Annual reports (10-K, 20-F), proxy statements or corporate website
	Marketing Acceptance	Marketing acceptance: Index of z-transformed country level measures 1) advertising and media spend divided by country GDP (in millions of US$) 2) advertising and media spend divided by a country's population (in millions)	Positive	Passport Monitor database
Structural Factors	Industry Turbulence	Turbulence: Composite of z-transformed industry level measures. 1) Indicator of the industry segment concentration at the two-digit SIC code level in each year 2) Indicator of the average growth rate of an industry segment at the two digit SIC code level by year in millions of US$	Positive Positive	COMPUSTAT COMPUSTAT
	Internationalization	Internationalization: Index of z-transformed firm level measures 1) Number of countries in which the firm has subsidiaries 2) The percentage of a firm's total revenue derived from foreign sales	Positive Positive	Corporate Affiliations (LexisNexis) or corporate website Annual reports (10-K, 20-F), proxy statements or corporate website
Strategic Factors	Brand Strategy	Indicates whether the company puruses a corporate brand, house of brands or mixed brand strategy (mixed is base condition)	0, 1, 2	Annual reports (10-K, 20-F), proxy statements or corporate website
	Customer Strategy	Indicates whether the company is primarily business to customer, business to business or mixed strategy (mixed is base condition)	0, 1, 2	Annual reports (10-K, 20-F), proxy statements or corporate website
	Service Product Strategy	Indicates whether the company product is primarily a service product (1), or physical product (0)	0 or 1	Annual reports (10-K, 20-F) or corporate website
Controls	Firm Size	The natural log of number of employees (in thousands)	Positive	COMPUSTAT
	Year	The fiscal year	Positive	COMPUSTAT
	R&D Intensity	The amount of R&D spend divided by revenue (in millions of local currency)	Positive	COMPUSTAT, annual reports (10-K, 20-F) or corporate website
	CEO Tenure	The natural log of the years the CEO has held office	Positive	Annual reports (10-K, 20-F), proxy statements or corporate website
	CEO Change	Indicates a change in the chief executive officer (1), or not (0)	0 or 1	Annual reports (10-K, 20-F), proxy statements or corporate website
	COO Presence	Indicates the presence of a chief operating officer (1), or not (0)	0 or 1	Annual reports (10-K, 20-F), proxy statements or corporate website

Market Internationalization: Firms that have a large number of subsidiaries embedded in different markets face greater marketing complexity in comparison to firms that do not. Similarly, firms with a significant percentage of their total revenues derived from international markets face an increased risk in association with the complexity of their operating environment (Bartlett and Ghoshal, 1989). Two measures are used to assess a firm's level of market internationalization. The first, *Subsidiaries*, uses the

natural log of the number of countries in which a firm has subsidiaries. The LexisNexis Corporate Affiliations database, filings and annual reports served as the sources for identifying the country locations of subsidiaries.

The second, *Foreign Revenue*, uses the percentage of total firm revenue which is derived from international markets. Annual reports, official filings and corporate websites formed the basis for calculating the percentage of revenue which was derived from foreign markets (Lee and Park, 2006; Sullivan, 1994).

Each measure was standardized and then the two standardized values were summed to create a composite measure of internationalization. Each measure being a positive value.

Strategic Factors

Brand Strategy: The branding strategy is coded using the approach of Laforet and Saunders (1994) which uses three categories: corporate branding, house of brands, and mixed strategies. The type of strategy used by a firm is assigned to one of the three categories based on information provided in their annual reports and websites. The firms' brand architecture is analyzed and, when possible, the revenue associated with the brands identified in order to establish a firm's brand strategy (Rao, Argawal, and Dahlhoff, 2004). The brand strategies are dummy coded as 0, for a corporate brand strategy; as 1, for a house of brands strategy; and as 2, for a mixed strategy.

Customer Strategy: A basic distinction in the marketing literature identifies the customer of a firm's products and services as a business customer (business to business, or B2B) or the general public as a customer (business to customer, or B2C). The annual reports and corporate websites are used to identify whether or not a firm followed a B2B strategy, or a B2C strategy. The customer strategies are dummy coded as 0, for B2B, and 1 for B2C.

Product Strategy: The marketing literature has identified fundamental differences in the marketing requirements, activities and strategies between financial services and physical goods. Prior research by Zeithaml, Parasuraman, and Berry (1985) identified only one of the industry segments used in this research sample as a service goods industry (SIC two-digit segment code 73). However, the firms which were not included in the service product segment were reassessed using annual reports (10-K and 20-F) and corporate websites to confirm that they were following a physical goods product strategy. If evidence of substantial marketing of service goods was identified, then the firm was re-classified as following a mixed service/physical goods product strategy. The product strategies are dummy coded as 0, for physical goods and 1, for services.

Control Variables

A review of the relevant literature indicates that there are a number of variables that may be expected to influence resources dedicated to marketing activities and may thus impact the structural choice of a senior marketing executive.

Size: The increasing scale and complexity of the firm will impact the resources dedicated to marketing processes and personnel (Grant, 1996; Day, 1994; Vorhies,

Morgan, and Autry, 2009). The natural log of the number of employees as reported in COMPUSTAT was used as the proxy for size of the organization.

R&D intensity: The ratio of the amount of investment in R&D, as gross expenditure, to total sales, as reported in COMPUSTAT, is used to describe R&D intensity of the firm. Although this measure has been used in the literature to represent other concepts, such as absorptive capacity (Cohen and Levinthal, 1990), it has also been used in marketing literature to control for the dedication of firm resources to marketing activities and personnel (Vorhies, Morgan, and Autry, 2009; Weigelt and Sarkar, 2009).

Advertising Intensity: The ratio of the amount of advertising spending made by the firm to total sales, as reported in COMPUSTAT, is used to describe the advertising intensity of the firm. This measure has been used in prior research as an indicator of the dedication of firm resources to marketing (Nath and Mahajan, 2008; Vorhies, Morgan, and Autry, 2009). The data for advertising expenses is only available for US companies only in the COMPUSTAT database. So, this variable appears in analyses that use US data only.

Year: The variable is used to control for trends in the incidence of the senior marketing executive as a member of the TMT over the time period of interest. Prior research (Nath and Mahajan, 2008) claim that there is a substantial negative trend in the incidence of senior marketing executives in the TMT. This variable assigns the value of 0 for the first year and increases sequentially through the final year of the time period of interest. Therefore, the time period from 2000 through 2010 would be coded 0 through 11.

Industry Segment: The firms used in the sample are drawn from ten different industry segments. The firm industry effects are controlled by using dummy variables for the industry segments and the two digit SIC level. It is expected that some industry segments are more marketing oriented and may have a higher incidence of the senior marketing executives (Nath and Mahajan, 2008).

CEO tenure: The tenure of a firm's CEO is captured as the natural log of the years in that position. Prior research has indicated that longer tenure may indicate more knowledge, power and influence, reducing the need for a senior marketing executive (Finkelstein and Hambrick, 1990; Hambrick and Cannella, 2004; Nath and Mahajan, 2010).

CEO change: The change of the CEO can influence the subsequent removal or inclusion of a senior marketing executive in TMT (Nath and Mahajan, 2008, 2010).

COO presence: The COO is recognized as being the second in command (below only the CEO), and more influential or powerful than the other senior executives in the TMT. The presence of the COO may impact the operational need for a senior marketing executive (Hambrick and Cannella, 2004). The presence of the COO is coded as 1, and the absence of the COO is coded as 0.

Prior performance: Prior performance was included in the firm performance models and consisted of the one year lagged value of the dependent value being measured.

Model 2. The Firm Performance Model

The dependent variables used to assess firm performance fall into two basic categories: accounting based measures and market (equity) based measures. The COMPUSTAT database was used to create both the revenue and market based measures.

The same variables which acted as independent variables in the preceding antecedent model are now acting, in accordance with contingency theory (Donaldson, 2001) as moderating variables with the presence of a SME in the TMT in the firm performance model. The measures and their sources are listed in Table 3.2.

Dependent Variables

Firm Performance (accounting based): The relationship between marketing resources and capabilities has shown a strong link to revenue and profit based performance measures (Finkelstein and Boyd, 1998; Krasnikov and Jayachandran, 2008). The COMPUSTAT database is used to obtain the sales revenue performance of the firms over the period of interest. COMPUSTAT reports revenue for U. S. based firms in U.S. dollars, British Pounds for the U.K. based firms, and in Euros for firms based in Germany. Revenue growth is calculated as year on year revenue growth to assess the impact of executive structure on revenue (Hambrick and Cannella, 2004). The variable, *Sales Growth,* assesses revenue growth at the firm level. The variable is calculated using the equation: ($revenue_t$ – $revenue_{t-1}$).

Two measures of profitability, ROS and ROA, are also used. Both measures are well established in the literature as metrics of profitability, particularly the TMT literature

(Crossland and Hambrick, 2007; Homburg, Jensen, and Hahn, 2012; Finkelstein and Boyd, 1998).

Return on Sales: The return on sales measure is calculated by the ratio: Net income / total revenue.

Return on Assets: The return on assets measure is calculated by the ratio: Net income / book value of total assets.

Firm Performance (market based): The relationship between firm market value metrics and marketing has become increasingly popular topic within the marketing literature.

Srinivasan and Hanssens (2009) and Crossland and Hambrick (2007) recently provided an excellent overview of links between marketing activity and firm value. This study uses Market to Book (equity) calculation as proposed by Crossland and Hambrick (2007) to measure stock value effects and the Market to Book Assets ratio represented by the version of Tobin's Q suggested by Pruitt and Chung (1994).

The variable, *Market-to-Book (equity)*, is calculated by the ratio: (common shares outstanding X year end closing price)/book value of common equity.

The variable, *Tobin's q*, is calculated using the ratio: ((common shares X year end closing price) + (long term debt + short term debt)) / book value of total assets.

Moderating variables

Because this research is assessing the impact of organizational executive structures through the lens of the structural contingency theory, informed by institutional

theory, the independent variables from the antecedent model are now characterized as moderating variables in the firm performance model (Donaldson, 2001, p.7).

As such, it is expected that the moderating variable will, at higher levels, enhance the base effect of the senior marketing executive on firm performance. The listing of the moderating variables are as follows: *SME x Isomorphic pressure, SME x Market acceptance, SME x Unitary governance, SME x Industry turbulence, SME x Internationalization, SME x Corporate branding, SME x House branding, SME x Business to business, SME x Business to customer, SME x Service product*.

An additional measure is introduced here, *SME x Unitary Board Member*. This variable assesses the effect on firm performance when the SME is also a member of the board in a unitary governance system.[7]

Control Variables

A review of the relevant literature indicates that several variables have been shown to have direct relationships to measures used in the model to assess the impact of a senior marketing executive on firm performance. These variables are included in the model as control variables.

[7] Both the United Kingdom and Germany allow companies to choose the *Societas Europaea* (SE) form of incorporation. The SE incorporation allows a firm to choose between a unitary or dual board governance form, irrespective of the governance form required by national law. In these cases, the coding of their governance system follows the documentation submitted to the responsible national authority (FSA or BaFin). Firms that chose the SE incorporation form during the time period studied were dropped from the sample in the year they became an SE corporation. Seven (7) firms chose SE incorporation in the sample during the time period studied, and therefore their chosen governance form was anomalous to their home country's prevailing societal context.

Size: The size of the firm has been shown to have a curvilinear relationship with sales performance (Lee, 2009) and equity performance (Joshi and Hanssens, 2010). Firm size is measured by the natural log of the total number of employees.

R&D intensity: The amount of resources dedicated to R&D has been shown to positively impact both revenue and equity performance of the firm (Chan, Martin, and Kensinger, 2000; Krasnikov and Jayachandran, 2008), although this impact can be influenced by the firm's industry segment (Rao, Agarwal, and Dahlhoff, 2004). It is calculated by dividing the R&D expenditure by total revenue.

Year: A dummy variable is used to control for trends in economic cycles which will impact both financial and equity based firm performance metrics (Hambrick and Cannella, 2004). The year 2000 is used as the base year.

Advertising Intensity: This measure has been shown in prior literature to be positively related to firm sales performance (Lee, 2009) and equity performance (Joshi and Hanssen, 2010; Wang, Zhang and Ouyang, 2009). Because the data for advertising expenses is only available for US companies in the COMPUSTAT database, this variable is used only for the US data comparison with Nath and Mahajan's (2008) results.

CEO tenure: Prior research has indicated that longer tenure may indicate more power and influence, thusly reducing the impact of other senior executives, including senior marketing executives, and having greater impact on the performance of the firm (Finkelstein and Hambrick, 1990; Hambrick and Cannella, 2004; Nath and Mahajan, 2010). It is the natural log of the total years in office.

Table 3.2: Variables, measures, values and data sources for firm performance model

Type	Variable	Measure	Value	Source
DV	Accounting Metrics	Sales growth: the year on year sales growth at the firm level.	Continuous	COMPUSTAT, annual reports (10-K, 20-F) or corporate website
		Return on Sales: Net income/total revenue	Continuous	COMPUSTAT, annual reports (10-K, 20-F) or corporate website
		Return on Assets: Net income/book value of total assets	Continuous	COMPUSTAT, annual reports (10-K, 20-F) or corporate website
	Market Metrics	Market to Book (equity): Market value/book value common equity	Continuous	COMPUSTAT, annual reports (10-K, 20-F) or corporate website
		Tobin's q: Market value of equity + debt/Book value of assets	Continuous	COMPUSTAT, annual reports (10-K, 20-F) or corporate website
Main Effect	Senior Marketing Executive	The presence of senior marketing executive	0 or 1	Annual reports (10-K, 20-F), proxy statement or corporate website
Moderators	Isomorphic Pressure	The incidence ratio of SME (presence/absence) within C4 by year and industry segment	0 to 1	Annual reports (10-K, 20-F), proxy statement or corporate website
	Marketing Acceptance	Marketing acceptance: Index of z-transformed country level measures 1) advertising and media spend divided by country GDP (in millions of US$) 2) advertising and media spend divided by a country's population (in millions)	0 to 1 0 to 1	Passport Monitor database Passport Monitor database
	Unitary board membership	Indicator of whether the SME is also a member of the board within a unitary board structure	0 or 1	Annual reports (10-K, 20-F), proxy statement or corporate website
	Industry Turbulence	Turbulence: Composite of z-transformed industry level measures. 1) Indicator of the industry segment concentration at the two-digit SIC code level in each year 2) Indicator of the average growth rate of an industry segment at the two digit SIC code level by year in millions of US$	0 to 1 0 to 1	COMPUSTAT COMPUSTAT
	Internationalization	Internationalization: Index of z-transformed firm level measures 1) Number of countries in which the firm has subsidiaries 2) The percentage of a firm's total revenue derived from foreign sales	0 to 1 0 to 1	Corporate Affiliations (LexisNexis) or corporate website Annual reports (10-K, 20-F), proxy statements or corporate website
	Brand Strategy	Indicates whether the company puruses a corporate brand, house of brands or mixed brand strategy (mixed is base condition)	0, 1, 2	Annual reports (10-K, 20-F) or corporate website
	Customer Strategy	Indicates whether the company is primarily business to customer, business to business or mixed strategy (mixed is base condition)	0, 1, 2	Annual reports (10-K, 20-F) or corporate website
	Service Product Strategy	Indicates whether the company product is primarily a service product (1), or physical product (0)	0 or 1	Annual reports (10-K, 20-F) or corporate website
Controls	Firm Size	The natural log of number of employees (in thousands)	Positive	COMPUSTAT
	Year	The fiscal year	Positive	COMPUSTAT
	Prior Performance	The dependent variable lagged 1 year	Continuous	COMPUSTAT, annual reports (10-K, 20-F) or corporate website
	R&D Intensity	The amount of R&D spend divided by revenue (in millions of local currency)	Positive	COMPUSTAT, annual reports (10-K, 20-F) or corporate website
	CEO Tenure	The natural log of the years the CEO has held office	Positive	Annual reports (10-K, 20-F), proxy statements or corporate website
	CEO Change	Indicates of a change in the chief executive officer (1), or not (0)	0 or 1	Annual reports (10-K, 20-F), proxy statements or corporate website
	COO Presence	Indicates of the presence of a chief operating officer (1), or not (0)	0 or 1	Annual reports (10-K, 20-F), proxy statements or corporate website

CEO change: The possible impact of the change in CEO on senior executive personnel (Hambrick and Cannella, 2004), as evident in the influence on the subsequent inclusion of senior marketing personnel, change in the personnel, or removal of the position from the TMT. Also, prior research has identified possible effects of CEO change on firm performance (Hambrick and Cannella, 2004). A change in the CEO is coded as 1 in the year it takes place, otherwise it is 0.

COO presence: The COO is recognized as being the second in command (below only the CEO), and more influential or powerful than the other senior executives in the TMT (Hambrick and Cannella, 2004). The presence of a COO is coded as 1, otherwise it is 0.

Industry Segment: Industry effects on firm performance are controlled for by using the median values at the two digit SIC code level to center variables of interest (Hambrick and Cannella, 2004). As a check, industry effects were also controlled for by using dummy variables at the two digit SIC code level.

CHAPTER FOUR

ANALYSES AND RESULTS

The replicate data set built following Nath and Mahajan (2008) are presented in Appendix D along with comparison to their published results and attendant extensions. Since their work acts as the basis for the following analyses, it is suggested that the reader acquaint themselves with the information in Appendix D.

The analyses and results of the antecedent and firm performance models proposed in this study are presented here.

Data set for Antecedent Model and Firm Performance Model

Table 4.1 reports the means, standard deviations, and the correlations of variables pooled across all years (2000-2010). Multicollinearity is not thought to be a problem within the data set. The paired correlations among the independent and control variables are all below 0.6, with the highest being the correlation between firm size (natural log of the number of employees) and the total number of foreign subsidiaries at 0.48. The inter-variable correlations among some of the dependent variables were quite high, but they are retained because they are tested separately and they have a theoretical relevance to the research questions being asked. The potential for multicollinearity in variables used in both the antecedent and firm performance models were assessed by calculating the variance inflation factors (VIFs). The resulting VIF values were much lower than the

recommended cut-off value of 10 recommended by Kutner et al. (2004). The mean VIF for the variables used in the antecedent model was 1.43, and the mean values for variables used in the firm performance models was 1.42. These VIF values indicate that multicollinearity is not an important concern for the models presented.

Missing data can pose difficulties for a variety of estimating procedures, including GEE and GLS procedures (Rubin, 1988) used in this research. An assessment was done for the data collected and analyzed for the models presented in this research using the Little's MCAR method as presented by Li (2013). A discussion of the missing data patterns and their analysis is presented in Appendix C. Using the techniques suggested by both Hair, (1998) and Li (2013) it was established that the data used conforms to missing at random (MAR) and therefore the GEE and GLS procedures are efficient estimators when applied to this data set.[8]

The presence of a senior marketing executive in the top management team varied across the data sets of the individual countries and years. Figure 4.1 presents the relative frequencies in the data set. It can be seen that the frequency for the structural choice of a senior marketing executive in the top levels of corporate management have, on the whole, a slight downward trend in both the USA and UK, whereas there seems to have been a slight increase in the Germany firm data since 2006. Whether this increase is a short-term trend, or not, is not clear, but the literature tends to argue that the position of a senior marketing executive on top executive level has been declining in relevance and presence for several decades. It would seem that this trend is indicated, at least in the USA and

[8] Missing data patterns were not assessed for the replicated data set used in the comparative analyses with published Nath and Mahajan (2008) results.

UK, although all three country environments vary considerably in their incidence rate and trend lines. This is an indication that the respective country environments differ in ways that truly matter when it comes to choices concerning executive structure.

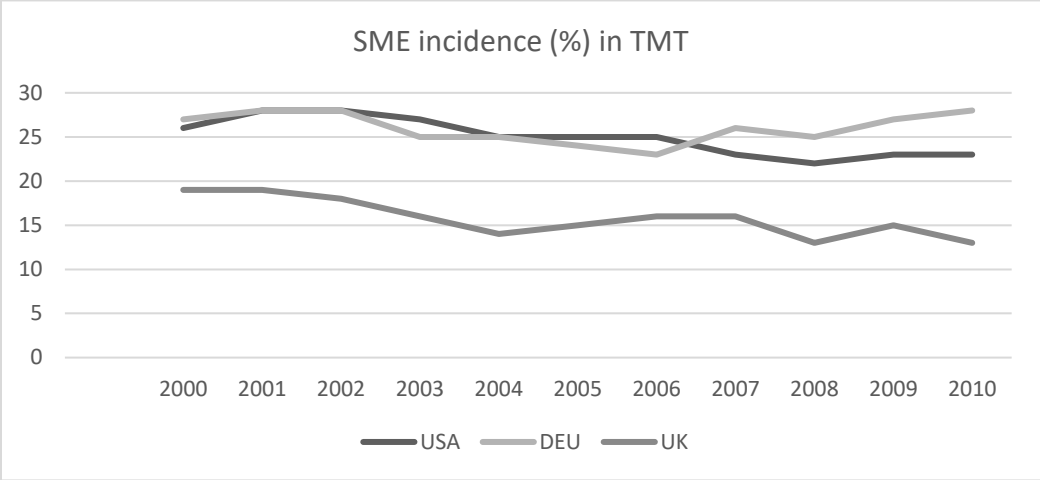

Figure 4.1: The percentage of firms in a given year and country that have a senior marketing executive as a member of their top management team

Because the governance form of the firm plays a role in the firm performance models presented in this study, it should be noted that the SE (Societas Europeae) incorporation option, which allows for an essentially unitary governance form within the dual governance regime countries of the European Union. In the data analyzed, this was only relevant for German firms. The SE form was rarely chosen and represented a very small sub-population within this research data (see footnote 7). This form was not included in the analyses and those firms which chose the SE form were categorized as having a unitary governance form. Three of the German firms which chose the SE option had a SME in their top management team as a member of the Vorstand, which is 43% incidence rate, far above the 26% average of the German sample. It might be interesting to also note that the companies which chose the SE governance form deviated from the

non-SE German companies on many attributes. On average, the SE firms were much larger in size (mean of 38,400 employees versus 15,000), had subsidiaries in more international markets (mean of 25 versus 16), and received a larger percentage of their revenue from international markets (mean of 64% versus 58%).

The analyses and results will be presented in the following manner: first, the antecedent model and the firm performance model are tested using the data set (fiscal years 2000-2010) for the USA, then Germany and then the UK; second, the results of the antecedent and firm performance models are applied to the three-year period of the recession and recovery period (2008-2010).

Two analytic methods are used to evaluate both the antecedent and firm performance models; a random effects panel regression (GLS) method and a random effects generalized estimating equation (GEE) method. Recent research on the executive structure of top management teams has used both GLS and GEE methods of analysis (Hambrick and Cannella (2004); Nath and Mahajan (2006); Zhang (2006). They are used together in this research in order to make useful comparisons with prior research and to give greater robustness to the analyses. The GLS method delivers a random effects estimator which is a matrix weighted average of both the within and between estimators. The GEE method, in comparison, delivers a population averaged estimate by using the within and between estimators and weighting them depending on an assumed covariance structure (Fitzmaurice, et al., 2009).

The GEE method is a population averaging method for estimating that fits generalized linear models to non-independent observations and allows for unknown

correlation among the variables without specifying the origins of the dependence. It can be applied to both logistic and linear models using a link function specification. A further advantage of the GEE method is that it allows a user specified within-group correlation structure (working correlation) in order to efficiently estimate the model coefficients (Pan, 2001). Because of the longitudinal nature of the data and natural grouping at the firm level, it was decided that an autoregressive (AR1) within-group correlation structure would be most appropriate. The appropriateness of this assumption was assessed by analyzing the within group correlations among variables using the quasi-Aikake information criterion (QIC) which confirmed that autoregressive correlation structure fit the data for both of the models (Hardin and Hilbe, 2003).

The data set covers a longer time period (2000-2010) than has been used in prior research on the SME in the TMT and has been extended to three countries (USA, UK and Germany) in order to test the generalizability of findings from the smaller and more limited earlier research. The analyses will be presented first, as a pooled data set, and then each country separately, based on the relevance of the research issue being discussed. The data available for the countries of interest differed in terms of the form and availability in small but important ways, which will be addressed later. However, because of this, the data subsets are analyzed separately, except for those situations in which the data form and availability were comparable. In addition, each of the models (Model 1: antecedents to the presence of an SME and Model 2: impact of the presence of an SME, and moderating variables, on firm performance) will be presented separately (Reminder: the term SME is the more accurate term and is used in this research, rather

Table 4.1: Means, standard deviations and correlations

	Mean	*S.D.*	1	2	3	4	5	6	7	8	9	10	11	12
1 Presence of SME	0.29	0.46	1.00											
2 Market-to-book (assets)	1.35	18.33	-0.03 **	1.00										
3 Market-to-book (equity)	1.16	44.54	-0.01	0.03 ***	1.00									
4 Tobin's q	0.46	2.85	0.03 **	0.96 ***	0.24 ***	1.00								
5 Sales growth	0.43	15.18	-0.01	0.00	0.00	-0.01	1.00							
6 ROA	0.04	1.47	-0.02 **	0.72 ***	0.00	0.03	0.00	1.00						
7 ROS	0.05	2.79	0.01	0.00	0.00	0.01	0.00	0.02	1.00					
8 Isomorphic pressure	0.44	0.26	0.10 ***	0.02	0.00	-0.01	0.00	-0.04 ***	-0.02	1.00				
9 Market acceptance	0.00	1.92	0.06 ***	-0.07 ***	-0.01	-0.04 ***	0.01	-0.05 ***	0.01	-0.03	1.00			
10 Unitary governance	0.81	0.39	0.00	-0.09 ***	-0.01	0.01	0.01	-0.07 ***	0.01	-0.06 ***	0.76 ***	1.00		
11 Industry turbulence	-0.01	1.45	0.03 ***	-0.01	-0.03 **	-0.02	0.04 ***	-0.01	0.00	0.09 ***	0.42 ***	0.30 ***	1.00	
12 Number of subsidiaries	16.09	13.96	0.08 ***	0.02	-0.01	0.01	-0.01	0.08 ***	0.04 ***	0.01	-0.02	-0.04 ***	0.00	1.00
13 International sales ratio	0.01	0.05	0.02	0.00	-0.01	-0.02 *	-0.02	0.00	0.00	0.01	0.01	0.01	0.02	0.10 ***
14 Corporate brand strategy	0.55	0.50	0.04 ***	0.04 ***	-0.02 *	0.02 *	0.01	0.03 **	-0.01	0.04 ***	0.01	0.03 **	-0.01	-0.01
15 House of brands strategy	0.07	0.25	-0.01	-0.01	0.00	0.01	-0.01	-0.01	0.00	-0.02	-0.14 ***	0.02	-0.07 ***	-0.03 **
16 Business-to-business	0.59	0.49	-0.08 ***	0.01	-0.02 **	-0.06 ***	-0.02 *	-0.04 ***	-0.02 *	0.08 ***	0.04 ***	-0.05 ***	0.07 ***	-0.12 ***
17 Business-to-customer	0.08	0.27	0.06 ***	0.00	0.02 *	0.10 ***	0.00	-0.01	0.00	-0.07 ***	-0.16 ***	0.05 ***	-0.10 ***	0.07 ***
18 Product type	0.22	0.42	0.07 ***	-0.02	0.00	0.04 ***	0.01	-0.03 *	0.00	0.16 ***	-0.03 **	0.05 ***	0.24 ***	0.02 **
19 Size[a]	1.63	1.39	0.01	-0.02 *	-0.01	-0.02	0.02 *	0.08 ***	0.05 ***	-0.11 ***	0.11 ***	0.16 ***	0.00	0.48 ***
20 R&D intensity	0.18	2.05	0.02	0.00	0.00	0.00	0.00	0.00	0.37 ***	0.00	0.03 **	0.03 **	0.01	0.01
21 CEO tenure[a]	6.26	5.61	0.06 ***	0.01	-0.01	0.06 ***	-0.01	0.01	0.00	-0.02 **	0.02 *	0.01	0.03 **	-0.08 ***
22 Presence of COO	0.29	0.46	0.03 *	-0.03 *	0.00	0.02 **	0.02	-0.02 *	0.00	0.05 ***	0.12 ***	0.10 ***	0.06 ***	-0.04 ***
23 Change of CEO	0.12	0.33	-0.01	-0.01	-0.01	-0.03 ***	-0.01	-0.02	0.00	-0.01	0.00	-0.01	0.02	0.00

*p<.1,**p<.05, ***p<.01

a= log transformed variable

Notes: Data set includes USA, UK and Germany; Independent and control variables are lagged one fiscal year (t-1); All dependent variables and structural variables are centered b

Table 4.1: (continued) Means, standard deviations and correlations

	Mean	*S.D.*	13	14	15	16	17	18	19	20	21	22	23
13 International sales ratio	0.01	0.05	1.00										
14 Corporate brand strategy	0.55	0.50	0.01	1.00									
15 House of brands strategy	0.07	0.25	0.04 ***	-0.29 ***	1.00								
16 Business-to-business	0.59	0.49	0.00	0.26 ***	-0.11 ***	1.00							
17 Business-to-customer	0.08	0.27	-0.02	-0.02	0.21 ***	-0.34 ***	1.00						
18 Product type	0.22	0.42	0.03 ***	0.11 ***	-0.02 *	0.02 *	0.00	1.00					
19 Size[a]	1.63	1.39	0.05 ***	-0.09 ***	0.03 ***	-0.15 ***	0.03 **	-0.04 ***	1.00				
20 R&D intensity	0.18	2.05	0.01	0.01	-0.02	-0.01	-0.01	-0.01	0.02	1.00			
21 CEO tenure[a]	6.26	5.61	-0.03 ***	-0.03 **	-0.03 ***	0.00	0.01	-0.02 *	-0.06 ***	0.02	1.00		
22 Presence of COO	0.29	0.46	-0.03 **	0.01	-0.03 ***	-0.01	0.02	0.03 ***	0.01	-0.01	0.09 ***	1.00	
23 Change of CEO	0.12	0.33	0.04 ***	0.00	0.00	-0.01	-0.01	0.01	-0.01	-0.01	-0.34	-0.02 **	1.00

*p<.1,**p<.05, ***p<.01

a= log transformed variable

Notes: Data set includes USA, UK and Germany; Independent and control variables are lagged one fiscal year (t-1); All dependent variables and structural variables are centered by the two digit SIC segment for the country and year.

than CMO as used by Nath and Mahajan (2008), though this can be slightly confusing. However, the definition is the same.).

The GEE method is the analytic method that has previously been used to test antecedent models with binary response variables and is used here for the antecedent model. The Stata statistical package is used with the panel data format command "*xtgee.*" Both the GEE and the random effects panel regression are used to assess the firm performance models. The random effects method uses the generalized least squares (GLS) approach to estimate the coefficients and is applied in order to estimate the important time invariant components of the models. The Hausman test showed no significant difference between the fixed effects estimator when compared to the random effects estimator. In both the logistic and linear models, robust standard errors are specified for the GLS method using the "*vce(cl firm id)*" variance estimator option which allows for intragroup correlation, and "*vce(robust)"* for the GEE method which allows for valid estimation of the standard errors even when the specified correlation structure is inaccurate. The panel regression method used applies the "*xtlogit"* (antecedent model) and the "*xtreg"* (firm performance model) commands. [9]

Serial correlation and endogeneity within the data structure of longitudinal panels is problematic for making accurate estimates of both standard errors and coefficients. Serial correlation is primarily addressed by lagging the predictor and control variables from the dependent variables by one year. This temporal separation is considered

[9] Stata 13.0 statistical package. XT commands are used for longitudinal/panel data analyses. The three XT commands used here are the *xtlogit* (logistic), *xtreg* (regression), and *xtgee* (generalized estimating equation).

sufficient and is standard practice in the literature (Nath and Mahajan, 2008; Zhang, 2006). However, lags of up to three years were also tested and the results did not depart from the results presented here. Also, as mentioned elsewhere, the GEE approach includes a robust variance estimator which can correct for non-independence in clustered data. Temporal separation between predictor and control variables in relation to the dependent variable helps ameliorate potential endogeneity effects by addressing reverse causality. Augmented regression was used to test for endogeneity in the firm performance models (Nath and Mahajan, 2008; Woolridge, 2013)). This method did not indicate that endogeneity was a problem in the models as specified.

Model 1: The Antecedent Model Analyses

We are interested in assessing the contingent conditions which act as antecedents to the presence or absence of a senior marketing executive (SME) in the top management team. Due to the binary nature of the dependent variable, a logistic model is used for the hypotheses 1-7. A random effects approach is used to take into account the presence of both binary and continuous independent variables in the model. GEE has been applied to similar analytic scenarios (Nath and Mahajan, 2008; Zhang, 2006). However, the logistic regression approach has a longer history of use when assessing executive structural choices (Fligstein, 1987; Hambrick and Cannella, 2004).

The hypothesized antecedent conditions were tested using the following logistic regression model:

$$\text{logit Pr}(Y_{it} \mid X_{it-1,}\, \mu_{it}) = \beta_0 + \beta 1X1_{it-1} + \beta 2X2_{it-1} + \beta 3X3_{it-1} + \beta_n C_{it-1} + \mu_{it}$$

Where:

Y_{it} = probability of the presence of SME in top management team is 1, otherwise 0

β_0 = the intercept of Pr(SME=1)

β_1 = the direct effect of $X1_i$ on Pr(SME=1)

$X1_{it-1}$ = institutional factors: isomorphic pressure and societal context factors of marketing acceptance and governance at firm *i*, for year *t-1*,

$\beta 2$ = the direct effect of $X2_{it-1}$ on Pr(SME=1)

$X2_{it-1}$ = structural factors: industry segment turbulence and level of internationalization at firm *i*, for year *t-1*,

$\beta 3$ = the direct effect of $X3_{it-1}$ on Pr(SME=1),

$X3_{it-1}$ = strategic factors: brand strategy, customer type and service product at firm *i*, for year *t-1*,

βn = the direct effects of the C_{it-1} on Pr(SME=1),

C*i* = vector of control variables for firm *i* year *t-1*,

μ_{it} = the randomly varying unique error terms $\alpha_i + \varepsilon_i$ contributed by firm *i*, for year *t*,

(where ε_i: $N(0, \sigma^2)$).

The following generalized estimating equation (GEE) approach described by Liang and Zeger (1986), an extension of the general linear model, was also used to test the model. The GEE model gives the marginal, population averaged response of Y_{it} as:

$$\mu_{ij} = E(Y_{ij}) \text{ has a link function to the covariates } g(\mu_{ij}) = X_{it}\,\beta$$

Where:

Y_{ij} = the population averaged probability of presence of SME=1, or =0 for firm *i*, in year *t*,

X_{it} = corresponding to 1 x p vector of covariates,

β = corresponding to p x 1 vector of parameters,

g(.) = logistic link function: $\log\left(\frac{\mu ij}{1-\mu ij}\right)$

Logistic regression is sensitive to some aspects of the data sample, so the steps were taken to assess, specification error, goodness-of-fit, multicollinearity and influential data points. The possibility of misspecification was tested using a linktest (Stata linktest) which indicated that the variables in the model were reasonable and that the model is not misspecified. A general goodness-of-fit assessment was made using McFadden's R^2 (0.06) which indicated a moderate fit. In addition, Tjur's R^2 (Tjur, 2009), a relatively recent approach to calculating R^2 for logistic regressions, was 0.07, indicating a moderate fit. Further testing of the model fit using (Stata *estat gof, group (10)*) the Hosmer-Lemeshow Chi-square test (p>Chi2=0.02) indicated that the model fits the multinational data set well.

Tests of Hypotheses

Table 4.2 presents the results of the logistic GEE random effects regression estimates for the antecedent model. Robust standard errors were specified. There are significant positive antecedent relationships between isomorphic pressure, corporate branding strategy, business to customer strategy and service product strategy with the presence of a senior marketing executive in the top management team. The relationships, however, vary across countries.

Hypothesis 1 predicts that firms operating in an industry segment will be subjected to isomorphic pressures to follow organizational structure practices of the most successful firms. If the leading firms have chosen to have a senior marketing executive as a member of the top management team, then it is likely that the other firms in the segment will also have a management structure that includes a senior marketing executive in the top management team. The coefficient for the USA is positive (in the predicted direction) and significant ($p<.05$). Thus, there is support for Hypothesis 1 in the USA data. The effects for both the UK and Germany are positive, but not significant. This is partial support for the hypothesis. Table 4.6 gives a summary of the support for the tested hypotheses across the countries analyses.

It is interesting to note here that the predictive power of the presence or absence of a SME in the TMT in the past is highly predictive of that same firm having the same TMT at a future time. This association was tested using logistic regression a subset of the data in which only firms which have observations for SMEs in all eleven years were

Table 4.2: GEE regression of antecedents to the presence of a SME in TMT (2000-2010)

	Pred.	USA		UK		Germany	
	Sign	coef	se	coef	se	coef	se
Constant		-0.54 **	0.26	-3.03 ***	1.04	-0.90	0.67
Institutional Factors							
Isomorphic pressure	Positive	0.29 **	0.14	0.29	0.63	0.04	0.22
Marketing acceptance	Positive	-0.06	0.05	-0.07	0.12	-0.03	0.15
Structural Factors							
Industry turbulence	Positive	0.02	0.02	0.05	0.05	-0.05	0.03
Internationalization	Positive	0.01	0.07	-0.01	0.28	0.00	0.01
Strategic Factors							
Corporate brand	Positive	0.34 *	0.18	0.01	0.61	-0.41	0.30
House of brands		0.71 *	0.41	0.75	0.73	-0.71	0.77
Business to business		-0.45 **	0.19	0.59	0.72	-0.41	0.45
Business to customer	Positive	0.27	0.43	2.05 ***	0.74	0.23	0.68
Service product	Positive	0.56 **	0.22	0.42	0.62	1.78 ***	0.64
Controls							
Firm size		-0.01	0.06	0.18	0.18	-0.01	0.05
R&D intensity		0.01 *	0.01	4.04	2.57	-1.15	2.02
CEO tenure		0.01	0.01	-0.03	0.04	0.03 **	0.01
COO presence		-0.23 ***	0.07	0.29	0.33	0.38 **	0.19
CEO change		0.04	0.06	0.00	0.23	0.24 ***	0.09
Year		-0.04 **	0.02	-0.01	0.07	0.01	0.03
Wald X^2		45.21 ***		16.21		22.65 *	
Observations		3232		378		790	

*p<.1, **p<.05, ***p<.01

Notes: GEE regression with robust standard errors, 2000-2010. All variables are lagged one year; Industry effects are controlled for by centering the continuous variables using the two digit SIC mean value. Governance form variable is dropped for country level data.

retained. When the same logistic regressions were run using lagged SME predictors (from one year, through ten year lags), every lagged SME variable was highly significant (p<.01) and positively associated with the SME dependent variable. This was also confirmed using the Chi-square test which indicated that there are highly significant relationships between the lagged SME variables (L1-L10) and the non-lagged SME

variable (chi-square with one degree of freedom between 118.17 (L10) to 3700.0 (L1) and a significance of p<.0001). Although the relationship attenuates as the time between the two variables increases, the significance of association between "before" and "after" states is very high. This would suggest that the driving isomorphic pressure resides at the firm level, rather than at the industry segment level which is tested by the *Isomorphic pressure* variable.

Hypothesis 2 predicts that the presence of a senior marketing executive in the TMT will be positively associated with firms headquartered and incorporated in a country in which marketing related activities receive larger allocation of resources at the aggregate country level. The coefficients for the marketing context was not significant across the countries tested. Thus, Hypothesis 2 is not supported.

Hypothesis 3 predicts that there will be a positive antecedent association between a firm that is facing turbulent environments (fast growing segment, low market concentration in segment) and the presence of a senior marketing executive on the TMT. In this model the coefficients are not statistically significant. Thus, Hypothesis 3 is not supported.

Hypothesis 4 predicts that there will be a positive antecedent association between higher a firm that is facing high levels of internationalization (has subsidiaries in many different country markets and a high percentage of its revenue is derived from foreign markets). In this model the coefficients are not statistically significant. Thus, Hypothesis 4 is not supported.

Hypothesis 5 predicts that there will be a positive (and stronger) antecedent association between the presence of a senior marketing executive in the TMT if the firm is pursuing a corporate branding strategy, than if a house of brands branding strategy is pursued. The coefficient was positive and significant for corporate branding strategy in the USA sample. However, the effect was smaller than the coefficient for a house of brands strategy. The effect was not significant in the UK and Germany, and was actually negative in Germany. Thus, Hypothesis 5 is not supported.

Hypothesis 6 predicts that there will be a positive antecedent association between a firm that is primarily competing in a business to customer (B2C) industry and the presence of a senior marketing executive in the TMT, rather than one which competes primarily in a business to business (B2B) industry. The association between the presence of a senior marketing executive in the TMT and a firm being in a B2C industry was positive, but significant only in the UK. However, it was always more positive and greater than the association with B2B strategy. Thus, Hypothesis 6 is only supported in the UK.

Hypothesis 7 predicts that there will be a positive (and greater) antecedent association between a firm competing primarily in a service goods market and having a senior marketing executive in the TMT, than a firm that competes in a product goods market. Hypothesis 7 is supported in the USA and Germany.

Table 4.3: Support for hypotheses using GEE regression (2000-2010)

		Support for Hypotheses		
Hypothesis	**Predicted**	**USA**	**UK**	**Germany**
Hypothesis 1	Positive	Yes (**)	No	No
Hypothesis 2	Positive	No	No	No
Hypothesis 3	Positive	No	No	No
Hypothesis 4	Positive	No	No	No
Hypothesis 5	Positive	No	No	No
Hypothesis 6	Positive	No	Yes (***)	No
Hypothesis 7	Positive	Yes (**)	No	Yes (***)
		N= 3232	N= 378	N=790
		385 firms	46 firms	92 firms

*p<.1; **p<.05; ***p<.01
Note: all independent variables testing hypotheses were lagged one year.
Variables for hypotheses 3 & 4 were centered by two digit SIC code.
The year was controlled by using a dummy variable with 2000 as the reference year.

The results of the logistic regression analysis of the antecedent model for the time period of 2000-2010 are presented in Table 4.4. The results were consistent with those found using the GEE method. The directions of the coefficients are consistent and all the variables that were previously found to be significant in the GEE analysis are also significant here. The summary of support for the hypothesized results using logistic regression across the countries analyzed is presented in Table 4.5. The results are consistent with those already presented for the GEE analyses.

The recessionary and recovery time period from 2008-2010 was assessed separately in order to identify possible changes in the importance of the role that antecedents might play. Table 4.6 presents the summary of support found for the same set of hypotheses over this particularly tumultuous economic period using GEE analyses. The support for isomorphic pressure and B2C strategy as antecedent conditions for a

Table 4.4: Logistic regression of antecedents to the presence of a SME in TMT (2000-2010)

	Pred.	USA		UK		Germany	
	Sign	coef	se	coef	se	coef	se
Constant		-2.31 **	1.12	-13.42 **	5.38	-5.33 *	2.85
Institutional Factors							
Isomorphic pressure	Positive	1.44 **	0.67	-1.12	1.35	-0.99	1.38
Marketing acceptance	Positive	-0.16	0.19	-0.38	0.23	-0.81	0.65
Structural Factors							
Industry turbulence	Positive	0.11	0.07	0.07	0.14	-0.03	0.20
Internationalization	Positive	0.01	0.40	0.62	0.61	0.86	0.54
Strategic Factors							
Corporate brand	Positive	1.60 ***	0.56	-0.06	1.77	-3.21	2.01
House of brands		1.89	1.25	0.70	1.95	-4.57	4.50
Business to business		-1.86 ***	0.73	2.98	2.34	-2.55	2.13
Business to customer	Positive	1.79	1.68	10.66 ***	3.92	2.14	2.67
Service product	Positive	1.94 *	1.11	2.32	2.01	8.88 **	3.75
Controls							
Firm size		-0.17	0.29	1.14	0.71	-0.36	0.47
R&D intensity		0.01	0.03	21.28 *	11.22	-9.19	11.86
CEO tenure		-0.01	0.03	0.01	0.09	-0.03	0.06
COO presence		-0.63 **	0.30	0.83	1.00	2.71 *	1.45
CEO change		-0.25	0.24	0.44	0.36	0.15	0.35
Year		-0.11 **	0.05	-0.15	0.14	0.00	0.10
Wald X^2		36.85 ***		23.72 *		9.32	
Observations		3296		502		864	

*p<.1, **p<.05, ***p<.01

Notes: Logistic regression with robust standard errors, 2000-2010. All variables are lagged one year; Industry effects are controlled for by centering the continuous variables using the two digit SIC mean value. Governance form variable is dropped for country level data.

SME in the TMT are no longer present in the USA data. Rather, support has shifted to corporate branding and service product strategies. Both the UK and Germany data continued to identify service strategy as an antecedent, though the UK data showed significant support for the B2C strategy. These changes seem to indicate that the

economic conditions influenced the importance associated with the structure contingencies of the model.

Table 4.5: Support for hypotheses using logistic regression (2000-2010)

		Support for Hypotheses		
Hypothesis	**Predicted**	**USA**	**UK**	**Germany**
Hypothesis 1	Positive	Yes (**)	No	No
Hypothesis 2	Positive	No	No	No
Hypothesis 3	Positive	No	No	No
Hypothesis 4	Positive	No	No	No
Hypothesis 5	Positive	No	No	No
Hypothesis 6	Positive	No	Yes (***)	No
Hypothesis 7	Positive	Yes (*)	No	Yes (**)
		N= 3296	N= 502	N=864
		399 firms	60 firms	107 firms

*p<.1; **p<.05; ***p<.01

Note: all independent variables testing hypotheses were lagged one year.
Variables for hypotheses 3 & 4 were centered by two digit SIC code.
The year was controlled by using a dummy variable with 2000 as the reference year.

Table 4.6: Country comparison of antecedent model hypotheses from 2008-2010

		Support for Hypotheses		
Hypothesis	**Predicted**	**USA**	**Germany**	**UK**
Hypothesis 1	Positive	No	No	No
Hypothesis 2	Positive	No	No	No
Hypothesis 3	Positive	No	No	No
Hypothesis 4	Positive	Yes (**)	No	No
Hypothesis 5	Positive	No	No	No
Hypothesis 6	Positive	No	No	Yes (**)
Hypothesis 7	Positive	Yes (**)	Yes (**)	Yes (**)
		N=816	N=255	N=159
		277 firms	86 firms	54 firms

*p<.1; **p<.05; ***p<.01

Note: all independent variables testing hypotheses were lagged one year.
Variables for hypotheses 3 & 4 were centered by two digit SIC code.
The year was controlled by using a dummy variable with 2000 as the reference year.

Model 2: The Firm Performance Model Analyses

In the firm performance model we are interested in the moderating effects of the institutional, structural, and strategic contingency variables in the presence of a SME on both market based and accounting based performance metrics. The direct effect of the presence of a senior marketing executive in the top management team on the performance metrics was also assessed. Again, as in the assessment of the antecedent model, both the GEE and GLS methods of analysis are used. It is assumed that variance across firms influences the firm performance variables and that the non-time variant variables are important to the models, so a random effects method is used for both analytic approaches. The potential impact of a SME on firm performance is addressed by hypotheses 8-16 and modeled using the following linear equation:

$$Y_{it} = \beta_0 + \beta 1 X1_{it-1} + \beta 2 X2_{it-1} + \beta 3 X3_{it-1} + \beta 4 X4_{it-1} + \beta 5 X1_{it-1} * X2_{it-1} \ldots * X4_{it-1} + \beta_n C_{it-1} + \mu_{it}$$

Where:

Y_{it} = the predicted firm performance for firm *i* in year *t*,

β_0 = the intercept of Y_{it},

β_1 = the direct effect of $X1_i$ on Y_{it},

$X1_{it-1}$ = the presence of a SME at firm *i*, for year *t-1*,

$\beta 2$ = the direct effect of $X2_i$ on Y_{it},

$X2_{it-1}$ = institutional factors: isomorphic pressure and societal context factors of marketing acceptance and governance at firm *i*, for year *t-1*,

$\beta 3$ = the direct effect of $X3_{it-1}$ on Y_{it},

$X3_{it-1}$ = structural factors: industry segment turbulence and level of internationalization at firm *i*, for year *t-1*,

$\beta 4$ = the direct effect of $X4_{it-1}$ on Y_{it},

$X4_{it-1}$ = strategic factors: brand strategy, customer type and service product at firm *i*, for year *t-1*,

$\beta 5$ = the interaction effects of X_{1it-1} and $X2_{it-1,}$ $X3_{it-1}$ and $X4_{it-1}$ on Y_{it},

βn = the direct effects of the C_{it-1} on Y_{it},

C*i* = vector of control variables for firm *i* year *t-1*,

μ_{it} = the randomly varying unique error terms $\alpha_i + \varepsilon_i$ contributed by firm *i*, for year *t*, (where ε_i: $N(0, \sigma 2)$).

Both the GLS (linear random effects) and GEE methods using random effects have been used in prior research on firm performance and executive positions in the TMT (Hambrick and Cannella, 2004; Zhang, 2006). The GEE method is considered to be of particular benefit in research using panel data because GEE estimates the regression coefficients and the standard errors using a weighting procedure to compensate for the serial correlations which occur in panel data. This increases the efficiency of the estimates compared to other analytic procedures (Zhang, 2006; Nath and Mahajan, 2008).

The GEE model for the marginal response (population averaged firm performance) of Y_{ij} is given as:

$\mu_{ij} = E(Y_{ij})$ has a link function to the covariates $g(\mu_{ij}) = X_{it}\beta$

Where:

Y_{ij} = firm performance

X_{it} = corresponding to 1 x p vector of covariates

β = corresponding to p x 1 vector of parameters

g(.) = identity link function

Revenue-based and market value-based performance metrics were used to assess the impact of a SME on firm performance. All continuous variables were centered (by country, fiscal year, and industry segment). Prior to centering, the dependent variables were winsorized at the 1% level. To address reverse causality, the independent variables were lagged one fiscal year.

As a precursor to the main analyses, the empirical evidence for an association between the presence of a SME on the TMT and firm performance was assessed using a T-test. In order to perform the exploratory test, two groups of firms were identified within the data, an SME positive group and an SME negative group. Of the firms which appeared in each of the eleven (11) years of the time period of interest, one group comprised those firms which had a SME in every year, the other group was comprised of

those firms which did not have a SME in any year during those eleven years. This created for the USA data set a SME (+) group with 51 firms and a SME (-) group with 160 firms, for the UK data set a SME (+) group with 6 firms and a SME (-) group with 37 firms, and for the Germany data set a SME (+) group with 20 firms and a SME (-) group with 58 firms. The SME (+) and (-) groups were then compared using a T-test on each of the firm performance metrics for each country separately. The Satterthwaite approximation was used to account for unequal variances in the response variables. The results are presented in Appendix B. Table B.1 presents the results and indicates that the presence of a SME over the full eleven-year time period is associated with a greater level of Tobin's q and market to book asset value in the USA data and greater levels of sales growth, return on assets and market to book asset value in Germany than companies that did not have a SME for the same time period. The results of the GEE and GLS test methods used to elucidate the hypothesized relationships between the presence of a SME and firm performance is presented next.

Tests of Hypotheses

Table 4.7 presents the estimation results for the USA data using the GLS random effects regression for the time period 2000-2010. It is presented here for representation purposes. The estimation tables for the Germany (Table E.2) and UK (Table E.3) results are in Appendix E. A summary of the support for the proposed hypotheses using the GLS method are presented here for both the accounting based metrics (Table 4.8) and the market based metrics (Table 4.9). The GEE method was also used to analyze possible effects of a SME on firm performance. The GEE estimation results are presented in

Appendix E in tables E.4-E.6 for all three countries and the summary of hypothesis support in tables E.7 and E.8.

Hypothesis 8 predicts that the presence of a SME on the TMT will exert a positive and significant effect on firm performance. Using the GLS random effects method, no significant main effect of the presence of a SME on the accounting based firm performance metrics was found in the USA or Germany data. The UK delivered a positive and significant association (Beta=0.16) with return on sales at the 5% level. Using the GEE approach, the main effect was positive and significant (Beta=0.27) with Tobin's q at the 10% level in the USA data. No main effects were found with the accounting based metrics in any of the countries using either the GLS or GEE methods. Thus, this hypothesis was partially supported in the USA and UK data only. As mentioned previously, Weinzimmer, et al (2003) did find some evidence for an impact on sales growth in their USA data, but Nath and Mahajan (2008) did not (see Appendix D). So far, evidence of a direct main effect on market related performance metrics has also been lacking. However, German et al. (2015) did find evidence for the presence of a positive and significant effect on Tobin's q (Nath & Mahajan, (2008) reported no effect). The results presented here further underline the lack of direct support for the argument that a SME directly influences firm performance.

Hypothesis 9 predicts that a SME presence on the TMT, when this is consonant with the prevailing isomorphic pressure in the industry segment, will lead to higher firm performance. No support was found for any of the firm performance measures in any of the countries analyzed using the GLS method. The GEE method did present a significant

association (Beta= 0.73) with Tobin's q in the Germany data. No other associations were found. Thus, this hypothesis was minimally supported.

Hypothesis 10 predicts that a SME presence on the TMT, when the societal level of marketing activity is high, will lead to higher firm performance. No support was found for any of the firm performance measures in any of the countries analyzed using either GLS or GEE methods. The level of advertising and spending within a country does not seem to moderate the impact of the presence of a SME on firm performance measures used in this study. Thus, this hypothesis was not supported.

Hypothesis 11predicts that a SME presence on the TMT and on a unitary board will lead to higher firm performance. The interaction term *SME x Board membership* was associated with a positive (Beta=0.12) and significant impact at the 1% level on return on assets using the GLS method, and using the GEE method (Beta=0.02) at the 5% level in the USA data. No support was found in the Germany data and the UK data did not have any observations where the SME was also a board member. The membership of a SME on a board does not positively impact the market based performance measures used in this study. Thus, this hypothesis was partially supported in the USA data only.

Hypothesis 12 predicts that a SME presence on the TMT, in the presence of high industry turbulence, will lead to higher firm performance. The interaction term *SME x Turbulence* was associated with Tobin's q positively (Beta=0.08) and statistically at 10% in the Germany data using the GLS method. This was the only statistically significant relationship seen between the interaction term and the performance measures. Thus, there is minimal support for this hypothesis.

Hypothesis 13 predicts that a SME presence on the TMT, when the level of internationalization of the firm is higher than the industry norm, will lead to higher firm performance. The interaction term *SME x Internationalization* is positively (Beta= 2.52) and significantly associated with equity market to book values at the 5% level in the USA data, and with sales growth at the 10% level (Beta=0.02) in the Germany data. These results were present in the GEE analyses as well, indicating that there is substantial support for a moderating effect of internationalization on these two performance metrics. Thus, there is partial support for this hypothesis.

Hypothesis 14 predicts that a SME presence on the TMT will lead to higher firm performance when the firm pursues a corporate brand strategy, rather than a house of brands or a mixed strategy. The interaction term *SME x Corporate branding strategy* has a positive and statistically significant association with Tobin's q (Beta=0.08) and asset market to book valuation (Beta= 0.86) using both GLS and GEE methods in the UK data. The corporate branding coefficient is greater than the house of brands strategy. The USA and Germany data sets do not deliver any significant associations. These results indicate a relationship between the interaction term and market based performance metrics in the UK data. Thus, there is partial support for this hypothesis in the UK data only.

Hypothesis 15 predicts that a SME presence on the TMT will lead to higher firm performance when the firm pursues a business to customer strategy, rather than a business to business or mixed strategy. No support was found for a positive and statistically significant relationship between the interaction term *SME x Business to Customer* and any of the firm performance measures across the countries analyzed, using either GLS or GEE methods. Although the effect on the firm performance measures was,

in almost all cases, positive or less negative than the effect of the business to business interaction, none of the effects were significant. Thus, this hypothesis was not supported.

Hypothesis 16 predicts that a SME presence on the TMT will lead to higher firm performance when the firm pursues a service business strategy, rather than a physical product strategy. The interaction term *SME x Service product* was positively (Beta= 0.07) and significantly associated at the 5% level with return on sales in the Germany data set, using both the GLS and GEE methods. This is solid evidence of support in this particular data subsample. However, there were no other significant relationships. The support is partial for this hypothesis in the Germany data only.

Approximately 69% of the data were USA data observations, 19% Germany and 12% UK. The GEE analytic procedure dropped observations when the time increment (fiscal year) for the panel was inconsistent (non-sequential year measurements). This reduced the observations available for analysis and at times rendered the UK and Germany data sets rather small. However, the smallest sets of observations retained for any single analysis never had less than 40 firms (cluster unit). The number of clusters required for accurate estimation is a matter of discussion, but recommendations in the literature indicate that the number of clusters should be greater than 40 for consistent standard errors and efficient coefficient estimates using GEE (Teerenstra, et al., 2010). Because of the sample was at times reduced to threshold levels in the GEE method, bootstrapping was used to improve the reliability of the standard errors of the coefficients in the UK analyses. Fifty (50) repetitions was found to deliver consistent standard errors for the UK data sample. Bootstrapping was not done for the GLS random effects analyses because, as a subject specific method, rather than a population averaging method,

GLS is more efficient than GEE under the same small sample conditions (Hu, et al., 1998).[10]

As a robustness test, rather than centering using median values at the two digit SIC level, dummy variables were used for the industry segment. Using this alternate method to control for industry effects did not influence the outcomes of interest.

Table 4.7: GLS random effects analysis of SME impact on firm performance in the USA (2000-2010)

	Industry Adjusted Market Based Performance						Industry Adjusted Revenue Based Performance					
	Tobin's q		MTB(assets)[a]		MTB(equity)[a]		Sales Growth[a]		ROA[a]		ROS[a]	
	coef	se	coef	se	coef	se	coef	se	coef	se	coef	se
Constant	0.25 **	0.12	0.18	0.16	2.68	5.02	-2.64	3.4	-0.05 *	0.03	-0.25	0.19
SME presence	0.04	0.06	0.04	0.11	2.83	2.22	-0.00	2.06	-0.05	0.04	-0.21	0.48
Institutional Interactions												
Isomorphic pressure x SME	0.19	0.15	0.13	0.14	-7.56 *	4.46	0.33	1.09	0.06	0.04	0.60	0.83
Marketing acceptance x SME	-0.03	0.04	-0.06	0.04	-2.47	1.52	-0.04	1.03	0.01	0.01	-0.16	0.27
Board membership x SME	-0.33 **	0.20	-0.37 **	0.14	0.26	1.53	-1.22	0.96	0.12 ***	0.04	0.22	0.28
Structural Interactions												
Industry turbulence x SME	-0.01	0.02	-0.02	0.02	0.71	0.49	-4.87	4.07	0.01	0.01	0.04	0.12
Internationalization x SME	-0.02	0.04	-0.02	0.04	2.52 **	1.20	0.47	0.85	-0.00	0.01	0.02	0.08
Strategic Interactions												
Corporate brand x SME	-0.10	0.11	0.13	0.11	3.36	3.21	-2.82	2.18	-0.02	0.02	0.07	0.28
House of brands x SME	-0.19	0.15	-0.04	0.16	4.98	3.47	-0.19	0.92	-0.02	0.04	0.06	0.24
Business to customer x SME	0.05	0.11	0.11	0.21	6.38	4.35	2.30	3.06	0.07	0.04	0.08	0.10
Business to business x SME	0.04	0.12	-0.06	0.11	1.01	2.85	3.81	2.69	0.04	0.02	0.19	0.10
Service product x SME	-0.15	0.14	-0.06	0.14	-7.52	5.63	1.49	1.32	0.01	0.03	-0.08	0.23
Year[c]	-0.02 **	0.01	-0.01	0.01	-0.18	0.23	0.36	0.24	0.01 **	0.00	0.02	0.02
Wald X^2	239.63 ***		225.10 ***		93.46 ***		94.52 ***		64.60 ***		225.8 ***	
R sq	0.44		0.51		0.01		0.028		0.01		0.162	
Observations	3296		3142		3140		2917		3292		3291	

*p<.1, **p<.05, ***p<.01

a= Tobin's q, MTB(assets), MTB(equity), Sales Growth, ROA and ROS, R&D intensity, and Prior performance are centered at the country and two digit SIC level to control for industry segment effects.

b=Prior performance is the lagged form of the dependent variable.

c= Year is controlled for as a dummy variable.

[10] The bootstrap procedure was applied using STATA 13.0 command *vce(bootstrap)*. A random number seed (10) was set and subsequent bootstraps of 50, 100, 200, 500, 1000, 1500 and 2000 repetitions were run for each performance model for the UK data, then the Germany data. The smallest repetitions required to achieve stable standard error values for the UK data was 1000. The bootstrap results for the Germany data indicated that stable standard errors where achieved with 200 repetitions.

The GEE method, in general, delivered less conservative results (smaller standard errors) than the GLS random effects approach. The GLS method is the more common approach that is applied in the TMT literature when using continuous dependent variables, and is therefore emphasized here. However, both methods did deliver similar results in the direction of the effects, or when results were significant. In this study the GEE results are looked at as a source of additional support when consonant with the GLS results because of the method's robustness in the face of possible model misspecification and correlated data structures.

Table 4.8: Summary of findings of SME impact on market based firm performance metrics using the GLS random effects method

		Tobin's q			MTB(assets)			MTB(equity)		
Hypothesis	**Predicted**	**USA**	**Germany**	**UK**	**USA**	**Germany**	**UK**	**USA**	**Germany**	**UK**
Hypothesis 8	Positive	No	No	No	No	No	No	No	No	Yes (**)
Hypothesis 9	Positive	No	No	No	No	No	No	No	No	No
Hypothesis 10	Positive	No	No	No	No	No	No	No	No	No
Hypothesis 11	Positive	No	No	No	No	No	No	No	No	No
Hypothesis 12	Positive	No	Yes (*)	No	No	No	No	No	No	No
Hypothesis 13	Positive	No	No	No	No	No	No	Yes (**)	No	No
Hypothesis 14	Positive	No	No	Yes (**)	No	No	Yes (*)	No	No	No
Hypothesis 15	Positive	No	No	No	No	No	No	No	No	No
Hypothesis 16	Positive	No	No	No	No	No	No	No	No	No
Observations		3296	806	388	3142	848	477	3140	848	392
Firms		399	102	52	380	106	60	380	106	53

*p<.1; **p<.05; ***p<.01
Note: all independent variables testing hypotheses were lagged one year.
Variables for hypotheses 3 & 4 were centered by two digit SIC code.
The year was controlled by using a dummy variable with 2000 as the reference year.

In order to assess the possible impact on the results of the global recessionary downturn which took place during the time period analyzed, the same analyses were made using the USA data set for the time periods 2000-2007 and 2008-2010.[11] This was

[11] The National Bureau of Economic Research (NBER) identified the beginning of the recession in December of 2007 and lasting through June of 2009. For simplicity, this research identifies the recession time frame as starting with 1.01.2008 and continuing through 1.31.2009 in the USA. Analyses using the exact recession start and end dates identified by the NBER for the USA, by Office for National Statistics

not done for the UK and Germany data because the shorter three-year time frame was not stable with the models being tested, even when bootstrapping was applied. This time period did not deliver any significant main or interaction effects for the USA data set. The estimation tables for both GLS and GEE analyses are presented in tables E.9 and E10.

Table 4.9: Summary of findings of SME impact on accounting based firm performance metrics using the GLS random effects method

		Sales Growth			ROA			ROS		
Hypothesis	**Predicted**	**USA**	**Germany**	**UK**	**USA**	**Germany**	**UK**	**USA**	**Germany**	**UK**
Hypothesis 8	Positive	No	No	No	No	No	No	No	No	No
Hypothesis 9	Positive	No	No	No	No	No	No	No	No	No
Hypothesis 10	Positive	No	No	No	No	No	No	No	No	No
Hypothesis 11	Positive	No	No	No	Yes (***)	No	No	No	No	No
Hypothesis 12	Positive	No	No	No	No	No	No	No	No	No
Hypothesis 13	Positive	No	Yes (*)	No	No	No	No	No	No	No
Hypothesis 14	Positive	No	No	No	No	No	Yes (*)	No	No	No
Hypothesis 15	Positive	No	No	No	No	No	No	No	No	No
Hypothesis 16	Positive	No	No	No	No	No	No	No	Yes (**)	No
Observations		2917	782	436	3292	840	477	3292	840	477
Firms		395	107	60	399	106	60	399	106	60

*p<.1; **p<.05; ***p<.01

Note: all independent variables testing hypotheses were lagged one year.

Variables for hypotheses 3 & 4 were centered by two digit SIC code.

The year was controlled by using a dummy variable with 2000 as the reference year.

for the UK, and by the Statistisches Bundesamt for Germany were also used. The results did not differ from the 1.01.2008-1.31.2009 time frame, so that is the time period used in all models.

CHAPTER FIVE

DISCUSSION

This study explores new contingency variables that are theorized to influence the structural choice of a SME as member of the TMT and the resulting impact on firm performance. The analyses drew upon contingency theory, which has been used as an instrumental argument for structural form choice in prior research, and extended the instrumental emphasis by leveraging institutional theory arguments to add richness to the discussion of the motivations for both structural form choice and the resulting impact on firm performance. In the past, research on organizational structural forms as a response to environmental contingencies has delivered tepid or, at times, conflicting results. By identifying new internal and external contingency factors, this study sought to clarify the relationships between the contingencies that motivate an organization to fit its environment and the subsequent realized performance enhancement.

In order to extend the application of contingency and institutional analysis of structural choice, it was important to create a strong link to the prior research in this area. First, by using Nath and Mahajan's (2008) previously published findings, a best effort attempt was made to recreate their data set and analyses. The data set that was developed had very similar summary statistic characteristics to the original. However, only five of their eight variables were constructed and used in the analyses presented here. Four of them

(Innovation, Differentiation, Corporate branding and Outsider CEO) were used because Nath and Mahajan had identified them as significant predictors of a SME on the TMT, and therefore putative contingency variables. A further variable, Market concentration, that had not been identified as a significant predictor in the prior research, but was included because it has possible theoretical relevance for mimetic processes in the form of SME isomorphic pressure.

Comparison to Nath and Mahajan (2008)

According to the contingency theory view, organizations attempt to create an optimal fit between their structural form choices and the conditions they face. Nath and Mahajan (2008) found support for the positive antecedent role of innovation, differentiation, corporate branding, and the presence of an outsider CEO to the choice of a senior marketing executive in the top management team as a structural choice. They were not able to find support for a main effect, or interaction effects, on firm performance. This research, using the replicated data, found support for an association of innovation as an antecedent condition to the presence of a SME. Again, no support was found for a main effect, or an interaction effect, of a SME on firm performance (Tobin's q and sales growth). So, Nath and Mahajan's (2008) research findings on the antecedent contingencies for a SME in the TMT were only partially supported. The significant contingency factor association in the antecedent model (positive for innovation) was reasonable and compelling contingency effect. However, the association with innovation falls away once the industry segment is controlled for. So, even this effect is not really a contingency effect, but could be largely an industry segment effect, although none of the segments were significantly associated with the presence of an SME.

When the time frame for the replicated Nath and Mahajan (2008) data was extended an additional five years, the contingency variables of interest produced different results. The previous significant contingency associations disappeared and a new one, corporate branding strategy, became significant as an antecedent contingency variable. The presence of a SME still did not impact firm performance, either directly or indirectly. When the UK and Germany data for the same time frame were added to the data, all significant antecedent associations disappeared. It seems that the explanatory usefulness of Nath and Mahajan's (2008) model, as presented in prior research, degrades as the time frame is lengthened, or non-USA country data is added. The theoretical structural contingency arguments for the variables used in the model are reasonable, but clearly, the robust prior findings are only partially replicable, and not generalizable. This may, of course, be due to the inability to exactly recreate all the variables used in Nath and Mahajan's (2008) models, or possibly to the small differences between the original and replicate data sets. However, it was expected that the previously published robust effects of the selected contingency factors would also show significant associations with organizational structures when the time frames were extended, or when non-USA data was included. Early deterministic descriptions of contingency theory (Bourgeois, 1984) and even later relaxed "strategic choice" contingency explications of effects on managerial structure (Child, 1972) do not seem to be supported. The results do give indications that there are rationales for having more marketing influence (and less) under different contingency conditions, but these indications are not as robust as implied by earlier published results.

In order to develop more stable and generalizable models than those proposed by Nath and Mahajan (2008), this research proposed updated models which used both institutional and compound contingency variables. The aim was to capture theory coherent effects using variables which tapped more broadly into constructs. These models proposed three categories of contingency variables (institutional, structural and strategic) argued to be salient in the decision to include a marketing executive in the top management team, and which, following contingency theory, would act as moderators. These models, although a variation on previously tested models, had not been proposed before.

Antecedents to presence of a SME in the TMT

The antecedent model is the most important model to the contingency theory orthodoxy that context variables will predict the presence of particular structural response of an organization, in this case a SME in the top management team. The institutional factor contingencies that were included in the antecedent model explored the contingency importance of isomorphic pressures within the relevant organizational fields (industry segments) and societal contexts (country) on the choice of an organization's form of executive structure. Following Meyer and Rowan (1977) and DiMaggio and Powell (1983), both mimetic and normative forces are used to inform and influence firms as to appropriate managerial structures. The institutional contingency factor, isomorphic pressure, was only predictive of the presence of a SME in the TMT in the USA. It was not predictive in the UK or Germany. In addition, *Marketing acceptance,* as an indicator of varying legitimacy for marketing as a functional form had been alluded to in prior research (Homburg, Workman and Krohmer, 1999), was also not predictive of a SME in

the top managerial echelon. In the data, the highest resource dedication was in the USA, followed by the UK and then Germany. It was theorized that higher levels of legitimacy and status may enhance opportunities for marketing managers to reach the highest executive levels. Since prior research had failed to find a relationship between the choice of a SME in the TMT and organizational performance, it was hypothesized that this structural decision might lie with institutional variables that exert contextual conformance pressure when legitimacy is anchored in rationales that only indirectly benefit the organization. The metrics used in this study were not able to identify these influences.

The structural factors measuring industry turbulence and internationalization did not have predictive saliency for a SME in the TMT. Findings by Nath and Mahajan (2008) hinted that structural contingencies might be salient (market concentration).[12] In this study industry turbulence was conceptualized slightly differently from that of Nath and Mahajan (2008). Turbulence was conceptualized more broadly as a compound variable composed of two components, market concentration and industry segment revenue growth. Contrary to Nath and Mahajan's (2008) findings, market concentration was not associated with the presence of a SME in the TMT in any of the countries analyzed. The strength of the result within the USA data (both GEE and GLS methods) might mean that the perception of informational complexity and market uncertainty, and thus the perception of the need marketing resources in the top management team is culturally influenced (i.e. organizations in the UK and Germany might not perceive business activities in numerous foreign markets as being as complex or uncertain as their

[12] Nath and Mahajan (2008) used only the Herfindahl Hirschman index (HHI) as a measure of turbulence. They did find a sizable negative association, though not significant, between HHI and the presence of a SME.

American counterparts). The structural factor contingencies proved to be strong predictors of a SME presence in the USA and fit well with contingency arguments of structural forms responding to organizational requirements to address informational complexity and uncertainty. They were not generalizable as contingency factors to the UK or Germany contexts.

Strategic factor contingencies played a variable role in predicting the presence of a SME in the TMT. A corporate branding strategy was a robust predictor in the USA data, but not in the UK or Germany data. Interestingly, the effect was smaller than for a house of brands strategy, which does not support to the proposed hypothesis and is contrary to prior theorizing in the literature. This result might be an indication that managing high brand complexity supports SME presence because of the informational and cognitive demands it would place on executive level decision processes. Support for the importance of a business to customer strategy as a contingency was evident in both the USA and the UK, but not Germany. This can be interpreted as support for the notion that a customer orientation, which is higher in the US and UK (Homburg, Workman and Krohmer, 1999), is associated with a SME being involved in executive level decision making. Evidence for the hypothesized relationship between a service product strategy and a SME in both the USA and Germany supports the theorized need for a SME when an organization is faced with the nuanced and continuously changing marketing programs needed to address the uncertainty and short cycle time of a service product offering.

The patterns of the antecedent model analyses are unique to each country data set. This makes it impossible to identify a generalizable relationship between the tested contingencies and the presence of a SME in the TMT. There is, however, some

corroboration of prior published findings and very promising identification of associations with isomorphic pressure, business to customer strategies and service markets in the USA data.

SME impact on firm performance

The marketing literature takes the view that marketing is primarily responsible for generating and maintaining demand for a firm's products and services, that the activities and capabilities of the marketing domain create both intangible and tangible assets (Kotler, 1984; Srinivasan and Hanssens, 2009; Webster, 1989). Prior research has had a difficult time confirming this assumption (Nath and Mahajan, 2008, 2010; Weinzimmer, 2003). Germann et al. (2015) did claim to find support for a positive effect on Tobin's q, but not on sales growth.

Although contingency theory does not specify how a specific structural choice might improve firm performance (other than "fit"), it does claim that a specific structural configuration is a rational attempt to improve performance in the face of certain contingencies. A SME in the TMT is expected to positively influence strategic and operational activities which then impact a firm's demand generating capabilities (market sensing and customer linking) to create value for the firm. The presence of the SME, then, through direct and indirectly action, increases the organizational fit with the contingency context (Donaldson, 2001). This study assessed the impact of a SME on firm performance, and by unpacking these performance measures into external market and

internal accounting based measures attempted to identify the impact of a SME to a more fine-grained extent than had been attempted previously.

No significant main effects were found between the presence of a SME in the TMT in the USA or Germany data. The UK data did indicate a main effect on the market to book equity valuations. Only Weinzimmer et al (2003) have previously reported a direct effect on firm performance. In general, the presence of a SME in the TMT does not seem to impact market or accounting based firm performance metrics in any consistent manner. Since the main effect could not be identified using either the population averaging analytic method (GEE), or the subject specific method (GLS), it is likely that the association found in the UK data is an artifact of the sample.

The interaction contingency variables gave mixed results across the performance metric categories, as well as across the countries. In the USA data there was a large positive and significant association with the market to book value of equity performance by the interaction of SME presence with the level of complexity and importance of international market to the firm (*SME x Internationalization*). This could be interpreted as an indication that a SME structure is beneficial to firm performance when the firm's level of international market complexity and dependence is higher than the industry average. From a contingency theory perspective, this is an odd result because internationalization was not significant as an antecedent condition to a SME. Under this theoretical view, the interaction would also be insignificant. This would seem to argue for a less deterministic, but rather nuanced, view of contingency effects than what is offered in theory.

The USA, UK and Germany data gave inconsistent (positive and negative weightings) revenue based performance results. The effects were often small, so it is reasonable to assume that the results oscillated around a nil effect. This study did not deliver the expected association between the modeled contingency variables and firm performance.

Overall, the evidence for an impact of the SME on either market or accounting based firm performance metrics is inconclusive.

Implications for research

This study addresses the findings of prior research into marketing's role at a strategic corporate level and expands the scope of this inquiry to include not only strategic and structural factors, but institutional factors as well.

The findings of this study contribute to the contingency view by explicating the structural contingency factors of the presence of a SME in top management teams by, 1) specifically applying institutional variables and lengthening the time frame over which data was collected in order to effectively assess institutional effects, 2) applying compound structural contingency variables which measure informational complexity and market uncertainty in order to improve construct assessment over prior research, 3) assessing the generalizability of structural contingency effects by extending the analyses to include non-USA data sets, and 4) increasing the sample size in order to address the possibility of small structural contingency effects sizes.

The research results suggest that there are strong context specific antecedent conditions driving the choice to include a SME in the top managerial level of firms, and

that these antecedent conditions vary across countries. In particular, the findings associating a SME structural choice with the need to address information complexity (internationalization and service markets) in the top executive team extends and supports similar findings in prior research (Nath and Mahajan, 2008). The results also suggest that, since the effect is not seen across all countries, that the managerial perception of what constitutes complexity and uncertainty may also vary across countries. Further unpacking of the organizational perception of complexity by using surveys to identify how a SME in the TMT addresses challenges posed to the organization operating in service industries and/or complex international markets would be informative.

The impact of the SME on firm performance in the USA data was not apparent. This was in keeping with prior research findings. And again, factors which identified themselves as important antecedent conditions to a SME in the TMT did not moderate this structure's impact on firm performance. This study did contribute to the discussion of the decisional influence of senior marketing executives by assessing both institutional factors (isomorphic pressure and market acceptance) and structural factors (market turbulence and internationalization) of informational complexity on firm performance. Since these factors did not seem to be related to firm performance, it begs further investigation into the influence of marketing on performance and the rationales for it.

The use of both GEE and GLS random effects methods to assess the antecedent conditions and impact of a SME in the TMT delivered similar results. The generalized estimating equations (GEE), logistic random effects and ordinary least squares methods have been used in similar prior research (Hambrick and Cannella,2004; Nath and Mahajan, 2008; Zhang, 2006). However, prior research has not specified the rationales

behind the methodological choices, or addressed possible implications for results. This study specifically included the GEE and random effects regression methods for both logistic and linear regression models. The results did vary slightly depending on the method used. Generally, the mean response and the impact of the covariates on the mean response (GEE method) delivers more statistically robust inferences (significance) for the relationships of interest than the random effects regression approach. It would seem that the theory of contingency factor effects on firm structure and performance supports the application of a population means analytic approach more than the subject specific inference approach of a random effects regression method. This suggests that means oriented analytic techniques applied to longitudinal data of more than just a few years is probably most appropriate when using the contingency lens.

Implications for practice

Decisions about the functional composition of executive structures can be informed based on the results of this research. The contingency view implies that there are optimal structural choices (Donaldson, 2001; Zeithaml, Varadarajan, Zeithaml, 1988). Although this research indicates that country context differences are important, within the USA context the optimal executive team structure implied by contingency theory includes a SME when the firm faces high levels of industry turbulence, pursues an internationally oriented business strategy (robust across methods) or pursues a corporate branding strategy. Results also seem to indicate that firms pursuing a business to business strategy are not optimizing if they choose to include a SME in their top executive circle.

It has already been noted that these findings indicate a context dependency since they were not consistent across countries. In the UK, optimality of executive structure would indicate that having a SME in the top executive circle would be advisable in situations of industry turbulence, a business to customer strategy or when leading competitors have chosen the SME structure (isomorphic pressure). In Germany, there was a strong indication against the SME structure if a firm pursued a house of brands strategy.

n keeping with prior research, the results of this study delivers inconclusive results regarding the direct impact of the SME on firm performance. In addition, most of the interaction effects on firm performance were not significant. For the USA context there was a strong positive interaction effect on market to book value (a similar metric to tobin's q used by Nath and Mahajan (2008)) in conjunction with isomorphic pressure to have a SME. There was also a positive, though not significant, effect on the market to book (equity) metric as well. This might be reasonably explained by the expectations of the (strong) investment community in the USA rewarding an executive structure that includes a SME when the leading firms in the industry segment include a SME in the top executive team. Otherwise, there were negative effects on performance in the USA, UK and Germany contexts that were associated with situations in which a SME is an optimal choice. This seems to indicate the firms chose the SME structure because of business challenges that warranted the input and skill sets of a SME, but whose impact would not be evidenced in the performance metrics used.

The decision to install a SME in the TMT is clearly a complex one. And, despite claims of a high turnover rate in the SME position in the USA, information gathered in this study did seem to provide cross-national support for the general assertion that short

tenures are the norm (Welch, 2004). The average tenure of a SME in this data set was 2.6 years for the USA, 3.1 years for the UK and 3.2 years for Germany. In comparison, the average CEO tenure in this data set ranged from 6.4 years in the USA, 5.5 years in the UK to 6.2 in Germany. The shorter tenures for the SME might be a reflection of the career ambition of an executive moving on in order to move up the corporate ladder, rather than the result of being dismissed due to unfulfilled expectations or the inherent risk of a job tied to consumer fickleness (Welch, 2004). It is not clear whether the average tenure for a SME diverges significantly from the average tenure for other senior executive positions, such as COO or CFO.

Limitations and further research

There are several limitations to this research. First, this research relied on secondary archival data. Future research that emphasizes primary survey and field data to address the qualitative foundations of management structure decision making would provide more understanding of the mechanisms behind marketing executive selection. Structural contingency theory is based on managerial recognition of the importance of specific contingency factors that must be addressed so that a firm can achieve "fit" and optimize performance. The perceived saliency, or lack of it, for any particular contingency factor drives this "fit" process, and thus the selection of a marketing executive to satisfy "fit" requirements. Because contingency theory has not found the empirical support in longitudinal studies which some of its most ardent supporters expected (Donaldson, 2001), particularly in its application to managerial structures (Nath

and Mahajan, 2008, Zhang, 2006), qualitative research to close this gap and identify the contingencies driving managerial structural change is needed. Field research focused on how executives perceive the contingency factors influencing informational complexity and market uncertainties within the marketing domain might be a fruitful pursuit to give more substance to structural contingency approaches.

Second, the sample used in this research was limited to large manufacturing firms. Future studies should include smaller firms and firms operating in a greater variety of industry segments, particularly those firms which make relatively greater use of marketing resources (e.g. consumer products). The use of large manufacturing firms was dictated by the interest in bridging to prior research. Although the sample used in this study did validate and extended results for manufacturing firms in the USA context, it would have been more informative if the sample had included more data points from non-USA manufacturing firms.

Third, the sample sizes for the country level analyses should be larger. A priori estimates of adequate sample size were made using standard calculations (Hedecker et al., 1999) and effect size estimates from the related executive literature (Nath and Mahajan, 2008; Zhang, 2006) indicated that the sample sizes would be sufficient, even with population averaged estimation methods. However, the effect sizes achieved for some of the variables in the proposed model were extremely small, particularly in the country samples. In order to effectively test the generalizability of the effects found in the USA sample, larger country level samples are required. It might be that, in general, structural contingency effects are very small and therefore require large sample sizes representing longer time frames in order to identify stable patterns.

Fourth, contingency theory emphasizes a deterministic, and primarily linear, relationship between a structural accommodation and a contingency factor. However, U-shaped relationships may very well exist between contingency factors and structural accommodations (Donaldson, 2001). It would be easy to conjecture that low levels of internationalization do not present enough complexity or uncertainty to warrant a SME, but as internationalization increases to a point where a SME would provide essential support at the executive level, they would, but beyond which the marketing domain complexities become so great they must necessarily be dealt with at divisional levels. In any case, the investigation of quadratic variable interactions would be instructive for future research efforts.

Fifth, the inability of this study to show a consistent positive impact by the presence of a senior marketing executive in the top executive team on firm performance, particularly revenue (and margin) based performance. Previous authors have wrestled with the difficulty of identifying compelling metrics with which to assess the impact of executive level marketing resources on firm performance (Slotegraaf and Dickson, 2004; Srinivasans and Hanssens, 2009). It is possible that the models presented are too expansive (containing too many moderators) and need to be reduced in complexity. Future research could focus on reduced models with just a few variables in one factor area at a time. This might allow for a more effective unpacking and teasing out of variables with significant effects. The tendency in contingency models is to attempt to represent the organizational context, leading to complex and unwieldy models.

Sixth, endogeneity is a potential problem with this data set. An augmented regression test did not indicate that endogeneity was a problem. Therefore, the choice of

having a SME in the TMT was treated as exogenous in the firm performance analyses based on standard treatment (Nath and Mahajan, 2008). However, in order to tease out the rather fickle relationships, future research could address the problem of potential endogeneity by using more sophisticated techniques such as propensity score matching or instrumental variables (Germann et al., 2015).

Seventh, the application of an event analysis method could be a fruitful approach for future research. This approach would specifically analyze the firm performance impact of a status change to the presence, or absence, of a SME as a member of the TMT. Further, it would also allow a possible assessment of the impact of consistency in commitment to this particular executive structure.

Conclusion

The importance of having the marketing domain represented in top management circles is probably in a state of functional transition today, but not in a crisis as some seem to want to argue (Day, 1992; Varadarajan, 1992; Welch, 2004). Yes, there does seem to be a slow trend away from the organizational structural choice of having a SME in the top management team. And, yes, this might indicate an eroding of marketing's influence in the strategic planning and other processes of today's firms. But, in the subset of large manufacturing firms, such as those analyzed, there is clearly an association between the presence of a SME in top management when there is greater international orientation in structure and sales, when there is a corporate branding strategy and when there is greater market turbulence. These contextual contingencies might be driving the choice of a SME to improve the firm's structural fit, but the contingency theory argument

that the structural choice of a SME represents an organization attempting to optimize its "fit" to the contextual contingencies facing it in order to optimize performance was not supported. There is a striking lack of association between the presence of a SME and a positive impact on firm performance. Perhaps the performance metrics must be directly linked to SME activities and areas of responsibility in order to identify an association with performance. For example, other possible performance metrics might include market share, brand equity or margins might be effective in establishing a performance link.

I hope that the findings in this dissertation help contribute to a better understanding of the structural choices and performance impact of corporate elites.

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APPENDIX A

DESCRIPTION OF DATA

Table A.1: Distribution of observations by industry segment

		Data Distribution by Industry Segment							
		Total		USA		UK		Germany	
Two digit SIC code	Industry Description	Firm Years	%	Firm Years	%	Firm Years	%	Firm Years	%
25	Furniture and fixtures	161	(2.2)	150	(3.0)	0	(0.0)	11	(0.8)
26	Paper and allied products	271	(3.8)	187	(3.8)	29	(3.5)	55	(4.1)
28	Chemicals and allied products	1,428	(20.1)	1,075	(21.8)	154	(18.4)	199	(14.9)
30	Rubber and miscellaneous plastics products	290	(4.1)	207	(4.2)	39	(4.7)	44	(3.3)
33	Primary metal industries	325	(4.6)	189	(3.8)	59	(7.1)	77	(5.7)
34	Fabricated metal products, except machinery and transportation equipment	318	(4.5)	205	(4.2)	64	(7.6)	49	(3.7)
35	Industrial and commercial machinery and computer equipment	1183	(16.6)	746	(15.1)	38	(4.5)	399	(29.8)
36	Electronic and other electrical equipment and components, except computer equipment	974	(13.7)	722	(14.6)	83	(9.9)	169	(12.6)
38	Measuring, analyzing, and controlling instruments; photographic, medical and optical goods; watches and clocks	588	(8.3)	413	(8.4)	76	(9.1)	99	(7.4)
73	Business services	1,574	(22.1)	1,042	(21.1)	295	(35.2)	237	(17.7)
Total		*7,112*	*100*	*4,936*	*100*	*837*	*100*	*1,339*	*100*

APPENDIX B

T-TEST

Table B.1 presents the results of the assessment of the mean differences on firm performance measures between these two groups. The USA data set indicates that firm performance, as measured by the mean values for Tobin's q and market to book (assets), was better for firms which had a SME as a member of the TMT for the entire period of interest than the firms which did not during the same period. The UK data indicates a marginal positive firm performance effect of having a SME in the top management on return on sales. The Germany data actually indicates lower firm performance on market to book (assets), sales growth and return on assets for firms with a SME as a member of the TMT.

The distribution of both groups across two-digit industry segments were similar, but deviated substantially in segments 28, 36 and 73 (see Table B.2). Part of the performance differences seen in the mean variance analysis may be due to differences between the two groups in their distribution across industry segments (McGahan and Porter, 1997).

Table B.1: T-test of firm performance measures

	SME		No SME				
	mean	sd	mean	sd	T-test	df	sig
USA							
Tobin's q	0.72	0.06	0.21	0.02	-7.61	734	***
Market to Book(assets)	0.65	0.06	0.22	0.02	-6.54	727	***
Market to Book(equity)	1.02	0.14	1.19	1.15	0.15	1710	ns
Sales Growth	0.77	0.53	0.42	0.21	-0.61	680	ns
Return on Assets	-0.00	0.01	-0.01	0.01	-0.49	1695	ns
Return on Sales	0.45	0.05	0.13	0.29	-1.09	595	ns
UK							
Tobin's q	1.26	0.66	1.85	0.46	0.73	139	ns
Market to Book(assets)	1.29	0.66	1.87	0.46	0.71	140	ns
Market to Book(equity)	2.34	0.83	5.67	1.88	1.62	464	ns
Sales Growth	0.04	0.03	0.04	0.02	-0.03	96	ns
Return on Assets	0.02	0.01	0.01	0.01	-0.79	129	ns
Return on Sales	0.03	0.01	0.01	0.01	-1.92	103	*
Germany							
Tobin's q	0.27	0.07	0.44	0.12	1.23	329	ns
Market to Book(assets)	0.39	0.12	9.29	2.29	3.88	642	***
Market to Book(equity)	0.45	0.14	2.67	2.54	0.87	643	ns
Sales Growth	0.02	0.01	0.05	0.01	1.67	680	*
Return on Assets	0.00	0.01	0.53	0.18	2.89	614	***
Return on Sales	0.01	0.01	-0.00	0.01	-1.00	616	ns

*p<.1, **p<.05, ***p<.01, ns= not significant

Table B.2: Industry segment distribution of T-test data

SIC 2	SME present		SME not present	
Segment	Firms	%	Number	%
25	3	3.9	4	1.6
26	4	5.2	12	4.7
28	9	11.7	57	22.4
30	4	5.2	7	2.7
33	2	2.6	16	6.3
34	3	3.9	17	6.7
35	9	11.7	40	15.7
36	17	22.1	31	12.2
38	7	9.1	22	8.6
73	19	24.7	48	18.8
Total	77	100	255	100

APPENDIX C

MISSING DATA ANALYSIS

Missing data can pose problems for statistical inference (Rubin, 1988). The missing completely at random (MCAR) assumption is typically not achievable, and not necessary for efficient estimates. However, missing at random (MAR) data patterns are assumed for most estimation procedures, including GEE and GLS procedures.

The data set used in this research was complete for over two thirds of the observations. Table C.1 lists the number of missing values for each of the variables used in the models and the percentage of the total observations which were missing.

The MCAR assumption was tested using the correlation technique (Hair, 1998). Dummy dichotomous variables were created for each variable in the model with more than 1% of their data missing. Then a value of 0 was assigned for each missing value, and 1 for each present value. Table C.2 presents the resulting correlation table. As an example, it can be seen that there is very little correlation between the missing information in the variable *MTB(equity)* and *Internationalization* (r = 0.02), but it is high between *ROA* and *ROS* (r = 0.88). This indicates that the missing data for both *ROA* and *ROS* were related to the data sources used. A high missing data correlation between a covariate and a response variable was seen between *Turbulence* and *Sales Growth* (r = 0.97). Other high correlations were not of concern since they were between response

variables or with controls. This technique is coarse, so a more formal missing data test was also conducted.

Table C.1: Missing data per variable

	Variable	#Missing	%Missing
	Dependent Variables		
1	Tobin's q	91	1.3
2	MTB(equity)	395	5.6
3	MTB(assets)	399	5.6
4	Sales growth	777	10.9
5	ROA	119	1.7
6	ROS	112	1.6
7	SME presence	0	0
	Institutional Variables		
8	Isomorphic pressure	0	0
9	Marketing acceptance	0	0
10	Unitary governance	0	0
	Structural Variables		
11	Industry turbulence	752	10.6
12	Market internationalization	336	4.7
	Strategic Variables		
13	Corporate brand	16	0.2
14	House of brands	16	0.2
15	Business to business	32	0.4
16	Business to customer	32	0.4
17	Service product	0	0
	Control Variables		
18	Firm size	240	3.4
19	R&D intensity	1361	19.1
20	CEO tenure	219	3.1
21	COO presence	176	2.5
22	CEO change	180	2.5
23	Year	0	0

Little's MCAR Chi-square test was used to formally test whether the missing data patterns within the data set might be an issue to the analytic methods used, and to assess the degree of relatedness of missing data between the covariate and dependent variables (Li, 2013). The test gave strong evidence that the pattern of missing data in the response variables were not MCAR (X^2 distance=4518, p<0.00). However, the covariate dependent missing data (CDM) pattern between the covariate and response variables indicated that the dependence was not significant (X^2=775, p<0.07). So, although the data is not MCAR, it does pass the CDM test at the 0.05 level. A moderate CDM level supports the veracity of estimation results achieved with both GEE and GLS methods.

Table C.2: Missing data correlation

	Variable	% Missing	1	2	3	4	5	6	7	8	9	10	11	12
1	Tobin's q	1.3	1											
2	MTB(equity)	5.6	0.14	1.00										
3	MTB(assets)	5.6	-0.16	-0.99	1.00									
4	Sales growth	10.9	0.00	-0.09	0.09	1.00								
5	ROA	1.7	-0.24	-0.17	0.20	0.11	1.00							
6	ROS	1.6	-0.11	-0.13	0.13	0.12	0.88	1.00						
7	Turbulence	10.6	0.00	-0.05	0.05	0.97	0.06	0.05	1.00					
8	Internationalization	4.7	0.01	0.02	-0.02	0.03	0.06	0.07	0.02	1.00				
9	Firm size	3.4	-0.01	-0.20	0.19	0.05	0.16	0.17	0.00	0.05	1.00			
10	R&D intensity	19.1	0.05	-0.11	0.11	0.05	0.16	0.19	0.03	0.12	0.10	1.00		
11	CEO tenure	3.1	0.01	-0.07	0.07	0.04	0.01	0.02	0.05	0.00	-0.02	0.01	1.00	
12	COO presence	2.5	0.00	-0.12	0.11	0.03	0.06	0.05	0.03	0.06	0.00	0.00	0.56	1.00
13	CEO change	2.5	0.00	-0.09	0.09	0.03	0.03	0.04	0.02	0.01	0.05	0.03	0.56	0.63

APPENDIX D

NATH & MAHAJAN DATA AND REPLICATE DATA SETS

Following Nath and Mahajan (2008), a replicate data set was constructed in order to retest their findings and to extend their original five-year time horizon. This replicate data set and analyses are presented here, along with comparisons and contrasts with their original published findings.

Replicated Data Set

In general, the replicated data shows strong similarities in the summary statistics, variable values and firm distribution across industry segments when compared with the original information published by Nath and Mahajan (2008). But, they are not identical.

Table D.1 presents a comparison of the two data sets based on the distribution of firms in the data across industry segments, categorized using the two-digit Standard Industrial Code format. The dispersion of firms across the SIC segments in the respective data sets is between 0.3-3.0 percentage points of each other. Further, there are 167 individual firms in the base year (2002) in the Nath and Mahajan (2008) data set and 166 firms in the same year of the replicate data set. This indicates a very similar composition and distribution across industries for the two data sets.

Table D.1: Comparison of Nath & Mahajan (2008) data and replicate data across industry segments

		Number of firms		Percentage (%)	
SIC industry code	Description of industry segment	N&M data	Replicate data	N&M data	Replicate data
25	Furniture and fixtures	4	5	2.4	3
26	Paper and allied products	3	3	1.8	1.8
28	Chemicals and allied products	21	27	12.6	16.3
30	Rubber and miscellaneous plastics products	7	3	4.2	1.8
33	Primary metal industries	3	2	1.8	1.2
34	Fabricated metal products, except machinery and transportation equipment	6	5	3.6	3
35	Industrial and commercial machinery and computer equipment	37	34	22.1	20.5
36	Electronic and other electrical equipment and components, except computer equipment	29	28	17.4	16.9
38	Measuring, analyzing, and controlling instruments; photographic, medical and optical goods; watches and clocks	19	16	11.4	9.6
73	Business services	38	43	22.7	25.9
Total		*167*	*166*	*100*	*100*

Tables D.2 and D.3 present the descriptive statistics and correlations of both the replicate data and the published information for Nath and Mahajan's (2008) data respectively. The mean values, standard deviations and correlations of the replicate data are very similar to those of the published values.[13] None of the correlations in the replicate data exceeded 0.5 and the variance inflation factors for the indicator and control variables were low. The VIF average was 1.18 for the replicate set of variables and none of the individual VIF values exceeded 4. This result matches the reported results of Nath and Mahajan (2008).

[13] It is important to note here that the variables "Total diversification", "TMT marketing experience" and "TMT general management experience" that were present in Nath and Mahajan's (2008) article were not replicated because they were not statistically significant and were not of theoretical interest for the additional comparative analyses done in this research. Therefore, they don't appear in any of the tables or figures.

Table D.2: Descriptive statistics and Pearson correlation coefficients for replicate data set

Variable	*Mean*	*s.d.*	1	2	3	4	5	6	7	8	9	10	11	12
1 CMO presence	0.35	0.48	1.00											
2 Innovation$_{t-1}$[a]	0.02	0.08	0.11***	1.00										
3 Differentiation$_{t-1}$[a]	0.01	0.04	0.06	-0.05	1.00									
4 Corportate branding[b]	0.49	0.50	0.14***	0.31***	-0.17***	1.00								
5 Outsider CEO$_t$	0.12	0.39	0.01	-0.03	0.19***	0.03	1.00							
6 Market Concentration$_{t-1}$[c]	0.09	0.05	0.11***	-0.16***	-0.15***	0.16***	0.01	1.00						
7 Log(number of employees)$_t$	8.68	1.35	-0.01	-0.08	0.02	-0.05	-0.17***	-0.12***	1.00					
8 Year	2002.1	1.38	0.04	-0.02	-0.03	0.02	-0.01	0.05	0.00	1.00				
9 CEO tenure$_t$	6.71	7.52	0.07	-0.07	-0.11**	-0.06	-0.19***	-0.10**	-0.11***	-0.03	1.00			
10 COO presence$_t$	0.31	0.46	0.04	-0.02	-0.05	-0.01	0.00	-0.04	0.06	-0.02	0.19***	1.00		
11 Prior performance$_{t-1}$[f]	-0.04	0.24	0.01	-0.04	0.01	0.03	0.04	0.21***	-0.04	-0.09**	0.02	0.05	1.00	
12 Business type ratio[b]	0.63	0.48	0.00	-0.20***	0.23***	-0.36***	0.07	0.04	0.20***	-0.02	-0.05	0.04	0.03	1.00
13 Tobin's q	2.10	1.69	0.02	0.20	0.08	0.04	-0.06	0.03	0.11***	-0.08**	0.08**	0.10***	0.20***	0.01

Notes: Data set constructed following N&M (2008) instructions; pooled across 168 firms over four years, 770 firm years.

*p<.1,**p<.05, ***p<.01

a = ratios of R&D(innovation) and advertising (differentiation) to revenue, less industry median ratio.

b= assumed to be constant over period.

c= Herfindahl-Hirschman industry concentration index (HHI).

d= sales growth, less industry median values.

Table D.3: Descriptive statistics and Pearson correlation coefficients for Nath and Mahajan (2008) data set

Variable	*Mean*	*s.d.*	1	2	3	4	5	6	7	8	9	10	11	12
1 CMO presence	0.42	0.50	1.00											
2 Innovation$_{t-1}$[a]	-0.03	0.09	0.20***	1.00										
3 Differentiation$_{t-1}$[a]	0.01	0.03	0.16***	-0.05	1.00									
4 Corportate branding[b]	0.53	0.50	0.26***	0.31***	-0.09**	1.00								
5 Outsider CEO$_t$	0.32	0.47	0.14***	0.01	0.12***	0.05	1.00							
6 Market Concentration$_{t-1}$[c]	0.04	0.02	0.00	0.20***	0.03	-0.06	0.15***	1.00						
7 Log(number of employees)$_t$	8.65	1.37	-0.06	-0.15***	0.07*	-0.32***	-0.05	0.08**	1.00					
8 Year	2002.50	1.12	-0.02	0.08*	0.04	0.00	0.00	0.11**	0.01	1.00				
9 CEO tenure$_t$	6.72	7.71	-0.08**	-0.07*	-0.12***	0.11***	-0.05	-0.08**	-0.10**	0.02	1.00			
10 COO presence$_t$	0.29	0.45	-0.08**	-0.09**	0.08*	0.06	0.03	-0.12**	0.05	-0.03	0.13***	1.00		
11 Prior performance$_{t-1}$[r]	0.06	0.35	0.04	0.04	0.12**	-0.07**	0.00	-0.05	-0.08**	-0.13***	-0.02	0.07*	1.00	
12 Business type ratio[b]	0.43	0.49	-0.07*	-0.24***	0.43***	-0.42***	0.08**	0.06	0.26***	0.00	-0.18***	-0.18***	0.02	1.00

Notes:Nath and Mahajan (2008) published data; pooled across 167 firms over four years, 668 firm years.

*p<.1,**p<.05, ***p<.01

a = ratios of R&D(innovation) and advertising (differentiation) to revenue, less industry median ratio.

b= assumed to be constant over period.

c= Herfindahl-Hirschman industry concentration index (HHI).

d= sales growth, less industry median values.

Another important sample characteristic to note is the percentage of firms with CMOs in the data. Nath and Mahajan (2008) reported that the average incidence of firms with a senior marketing executive in their data was 41.4%, and for marketing executives having the CMO title it was 19.6%.[14] The replicate data set presented an average incidence for senior marketing executives of 37.8%, and 10.7% for executives with the CMO title (Figure D.1). In the replicate data set, the percentage of senior marketing executives with the CMO title increased over the time frame of interest, but senior marketing executive positions in aggregate actually decreased slightly. The identification of a CMO and TMT members, although defined in both prior work and in this research, is open to some

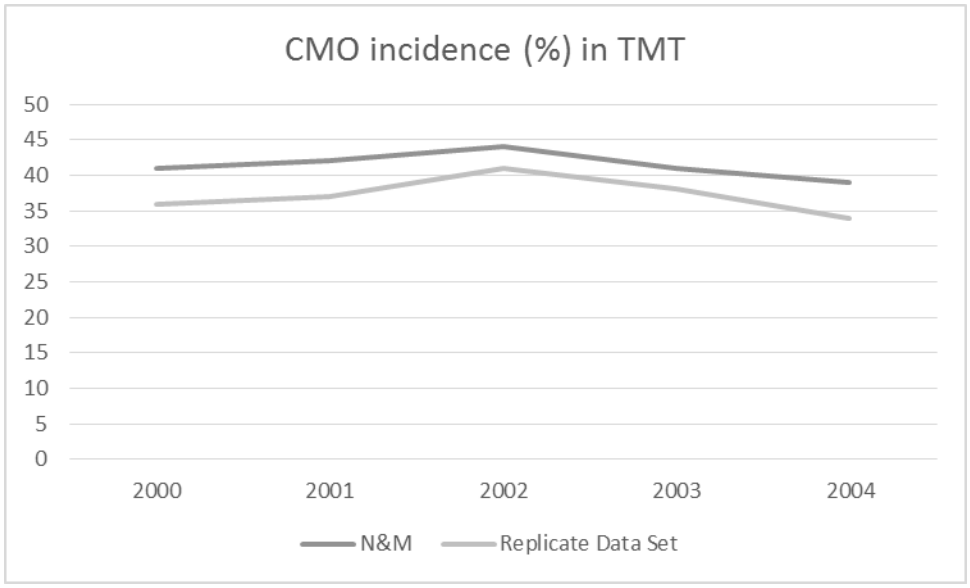

Figure D.1: The rate of the presence of a senior marketing executive in the top management team (Nath and Mahajan use the CMO identification) comparison between the replicate data set and Nath and Mahajan's (2008) published results

[14] Nath and Mahajan (2008) use the label "CMO" to mean a senior marketing executive in the top management team. However, they also acknowledge that there is a subgroup of senior marketing executives which carry the "Chief Marketing Officer" title. However, their analyses use "CMO" is the analyses and discussion to mean "SME," and is followed here for continuity.

interpretation when the researcher is attempting to identify these constructs in financial and company reports. This might be partial explanation for the difference.

Because the replicated data set is comparable in overall composition to the original data set described by Nath and Mahajan (2008), it was concluded that the replicate data set can reasonably be used for analytic comparisons. Table D.4 describes the variables, as defined by Nath and Mahajan (2008), which were used for the comparative analyses. The data were analyzed using the generalized estimating equation (GEE) approach (Zeger and Liang, 1986) following Nath and Mahajan (2008).

Table D.4: Explanation of the Nath and Mahajan (2008) variables used

Variable	Definition
CMO presence	A marketing executive in the top management team as identified by a firm in its annual filings with the Securities and Exchange Commision.
Innovation	The ratio of R&D expenditure to sales.
Differentiation	The ratio of advertising expenditures to sales.
Corporate branding	The corporate brand is dominant in endorsement of firm products or services (Agarwal and Dahlhoff, 2004).
Outsider CEO	A newly appointed CEO with less than one year with the firm.
Market concentration	The Herfindahl-Hirschmann index at the two digit SIC level.

In general, the results for the antecedent model using the replicated data set (USA, years 2000-2004) did not support prior published findings (see Table D.5). Nath and Mahajan (2008) had predicted that the presence of a CMO in the TMT would be positively associated with higher levels of R&D expenditures, advertising expenditures, a

corporate branding strategy, a CEO from outside the firm, and would be negatively associated with a highly concentrated market segment. They found support for all of these hypotheses, except in the case of high market concentration. The replicated data only supported the hypothesized positive association between CMO presence in the TMT and higher R&D expenditures.

Table D.5: Hypotheses from Nath and Mahajan (2008) with predicted and actual results compared to the actual results of the replicated data set

			Results	
Hypothesis	**Description**	**Predicted**	**N&M (2008)**	**Replication**
Hypothesis 1	A firm's level of innovation is positively related to the likelihood of CMO presence in its TMT.	Positive	Yes	Yes
Hypothesis 2	A firm's level of differentiation is positively related to the likelihood of CMO presence in its TMT.	Positive	Yes	No
Hypothesis 3	The likelihood of CMO presence in the TMT is higher in firms that have a corporate branding strategy than in firms that pursue other branding strategies.	Positive	Yes	No
Hypothesis 4	*Not included in tested model*			
Hypothesis 5	*Not included in tested model*			
Hypothesis 6	*Not included in tested model*			
Hypothesis 7	The likelihood of CMO presence in the TMT is higher in firms with an outsider CEO than in firms with an insider CEO.	Positive	Yes	No
Hypothesis 8	The degreee of market concentration in a firm's primary industry is negatively related to the likelihood of CMO presence in its TMT.	Negative	No	No
Hypotheses 9a-d	Firm performance is improved by CMO presence in the TMT for firms that:			
	a: have relatively high levels of innovation.	Positive	No	No
	b: have relatively high levels of differentiation.	Positive	No	No
	c: have a corporate branding strategy.	Positive	No	No
	d: have an outsider CEO.	Positive	No	No
	e: are in industries that are relatively less concentrated.	Positive	No	No

Table D.6, presents the detailed results of the logistic generalized estimating equation analyses of the antecedent model over the same time frame (2000-2004) and compares them to the results published by Nath and Mahajan (2008). As mentioned,

Nath and Mahajan (2008) found significant support for their hypothesized positive relationships between the presence of a CMO in the TMT with the variables *Innovation*,

Table D.6: Logistic regression comparison with CMO as the dependent variable using replicated data from 2000-2004

	Model 1[a]		Model 2[b]		Model 3[c]		Support for Hypotheses	
							A†	B†
Constant	66.18	125.1	33.46	126.87	-1.57 ***	0.43	-	-
Innovation	3.18 ***	1.03	3.64 ***	0.99	3.21 ***	1.02	Yes	Yes
Differentiation	1.12	2.75	3.05	2.87	1.39	2.79	No	Yes
Corporate branding	0.25	0.30	0.16	0.31	0.26	0.30	No	Yes
Outsider CEO	0.02	0.15	0.01	0.15	0.02	0.15	No	Yes
Market Concentration	3.92 *	2.18	-	-	3.84 *	2.18	No	No
Firm size	0.04	0.10	0.1	0.11	0.04	0.10	-	-
Year	-0.03	0.06	-0.02	0.06	-	-	-	-
CEO tenure	0.03 *	0.01	0.03 **	0.01	0.03 *	0.01	-	-
COO presence	0.11	0.17	0.08	0.1	0.18	0.16	-	-
Prior performance	-0.49 *	0.29	-0.61 **	0.29	-0.55 *	0.28	-	-
Customer ratio	0.13	0.33	0.23	0.34	0.13	0.33	-	-
SIC2	-	-	included		-	-	-	-
Wald X^2	19.7 **		19.37 **		19.02 **			

*p<.1, **p<.05, ***p<.01
a= pooled logistic GEE regression over 2000-2004 period; N=636.
b= same as Model 1, but including industry segment and without market concentration. N=636
c= same as Model 1, but without year. N=636.
†A= replicated data set; B= reported in Nath & Mahajan (2008)

Differentiation, *Corporate Branding* and *Outsider CEO*, but not for their hypothesized negative relationship with *Market Concentration* (see †B). Models 1, 2, and 3 represent the same modeling presented by Nath and Mahajan (2008), but contrary to the prior published results, only the hypothesized positive relationship between *Innovation* and the presence of a CMO was supported across the three models. The relationship between *Market Concentration* and the presence of a CMO was actually positive and significant,

contrary to their prediction, in the replicate data ($p<.1$). None of the other relationships hypothesized by Nath and Mahajan (2008) were significantly supported in the replicated data. Also, it is interesting to note that the control variable, *Prior Performance*, was negatively and significantly related to the presence of a CMO in the replicate data. This was not the case in the original data and might indicate that firms that are experiencing difficulty with their revenues are more apt to choose to have a senior marketing executive in the TMT as a response to these difficulties. As discussed earlier, the differences in the results might also be because the replicate data are not identical to the data analyzed by Nath and Mahajan (2008). However, given the large effect sizes and high level of significance previously reported, it was expected that these relationships were robust enough to overcome these small differences.

In order to test the generalizability of Nath and Mahajan's (2008) hypotheses, the same analyses were applied to two additional time periods, first, the nine-year period from 2000 to 2007 in which economic and market conditions were similar to the period from 2000 through 2004, and second, the recessionary/post-recessionary three-year period from 2008 to 2010 in which the economic and market conditions were arguably very different. [15]

Table D.7 presents the results from 2000-2007. Here the antecedent relationship between the variable *Innovation* and the presence of a CMO in the TMT remains, as it is

[15] The National Bureau of Economic Research (NBER) identified the beginning of the recession in December of 2007 and lasting through June of 2009. For simplicity, this research identifies the recession time frame as starting in January, 2008 and continuing through January, 2009 in the USA, with a recovery period extending through 2010. The exact recession beginning and end dates identified by the NBER for the USA, by Office for National Statistics for the UK, and by the Statistisches Bundesamt for Germany, are slightly different, but fall reasonably within the 2008 through 2009 period. All three economies were in a recovery phase by 2010.

in the 2000-2004 period, positive and significant, supporting Nath and Mahajan's (2008) results. However, the variable *Differentiation*, which previously did not indicate a significant association, now indicates partial support for an antecedent relationship to the

Table D.7: Logistic regression comparison with CMO as the dependent variable using replicated data from 2000-2007

	Model 1[a]		Model 2[b]		Model 3[c]		Support for Hypotheses	
	coef	se	coef	se	coef	se	A†	B†
Constant	114.94	77.85	104.08	79.02	-1.28 ***	0.36	-	-
Innovation	2.71 ***	0.86	2.20 ***	0.80	2.64 ***	0.86	Yes	Yes
Differentiation	3.10	2.27	4.63 *	2.57	3.50	2.24	Partial	Yes
Corporate branding	0.39	0.26	0.30	0.25	0.40	0.26	No	Yes
Outsider CEO	-0.04	0.14	-0.04	0.15	-0.04	0.14	No	Yes
Firm size	0.03	0.08	0.08	0.09	0.02	0.09	-	-
Year	-0.06	0.04	-0.05	0.04	-	-	-	-
CEO tenure	0.02	0.01	0.01	0.01	0.02	0.01	-	-
COO presence	-0.09	0.13	-0.09	0.14	-0.08	0.14	-	-
Prior performance	-0.05	0.16	0.04	0.16	-0.01	0.15	-	-
Customer ratio	-0.02	0.28	0.01	0.28	-0.02	0.28	-	-
SIC2	-	-	included		-	-	-	-
Wald X^2	20.96		29.37		18.87			

*p<.1, **p<.05, ***p<.01
a= pooled logistic GEE regression over 2000-2007 period. N=1071.
b= same as Model 1, but including industry segment. N=1071
c= same as Model 1, but without year. N=1071.
†A= replicated data set; B= reported in Nath & Mahajan (2008)

presence of a CMO. When selecting only the recessionary years (2008-2010), none of the hypothesized relationships are significant (Table D.8). When looking at the entire data time frame from 2000 through 2010, we see (Table D.9) that none of the hypothesized relationships tested are significant, except for a rather weakly significant association with *Corporate branding* that appears (the previous positive and significant association with

Innovation disappears). Leaving the impact of the economically turbulent three years from 2008 through 2010 aside, the results from 2000 onward are stable. They show that

Table D.8: Logistic regression comparison with CMO as the dependent variable from 2008-2010

	Model 1[a]		Model 2[b]		Model 3[c]		Support for Hypotheses	
	coef	se	coef	se	coef	se	A†	B†
Constant	14.86	174.95	-46.38	185.38	-1.15	0.52	-	-
Innovation	0.02	0.03	0.01	0.04	0.02	0.03	No	Yes
Differentiation	-0.13	0.13	0.19	0.15	0.13	0.13	No	Yes
Corporate branding	0.27	0.37	0.20	0.41	0.28	0.37	No	Yes
Outsider CEO	0.39	0.36	0.42	0.38	0.38	0.36	No	Yes
Firm size	0.13	0.14	0.11	0.15	0.11	0.14	-	-
Year	-0.01	0.08	0.02	0.09	-	-	-	-
CEO tenure	0.01	0.02	0.01	0.02	0.01	0.02	-	-
COO presence	0.36	0.30	0.44	0.28	0.35	0.26	-	-
Prior performance	-0.02 *	0.01	-0.03 *	0.02	-0.02 *	0.01	-	-
Customer ratio	-0.26	0.41	-0.37	0.44	-0.26	0.42	-	-
SIC2	-	-	included		-	-	-	-
Wald X^2	10.17		13.79		10.17			

*p<.1, **p<.05, ***p<.01

a= pooled logistic GEE regression over 2008-2010. N= 350.

b= same as Model 1, but controlling for industry effects at two digit SIC level. N= 350.

c= same as Model 1, but without year. N= 350.

† A= USA data 2008-2010; B= reported in Nath & Mahajan (2008)

only research and development expenditure is a significant predictor for the presence of a CMO in the TMT. This result contrasts with the prior published results.

Nath and Mahajan (2008) also looked at the possible impact of the presence of a CMO on firm performance, as measured by Tobin's q and sales growth. They hypothesized that firm performance is improved by the presence of a CMO in firms with 1) relatively high levels of innovation, 2) differentiation, 3) an outsider CEO, 4) a corporate branding strategy, and 5) in industry segments with lower market

concentration. They reported no main effects and no significant interaction effects between the presence of a CMO and firm performance (Table D.10).

Table D.9: Logistic regression comparison with CMO as the dependent variable from 2000-2010

	Model 1[a]		Model 2[b]		Model 3[c]		Support for Hypotheses	
	coef	se	coef	se	coef	se	A†	B†
Constant	102.68 *	57.65	93.21 *	57.38	-1.15 ***	0.32	-	-
Innovation	0.02	0.03	0.02	0.03	0.02	0.03	No	Yes
Differentiation	-0.04	0.09	0.06	0.13	-0.06	0.09	No	Yes
Corporate branding	0.40 *	0.23	0.34	0.24	0.41 *	0.23	Partial	Yes
Outsider CEO	0.07	0.13	0.01	0.13	0.07	0.13	No	Yes
Firm size	0.01	0.08	0.04	0.08	-0.01	0.08	-	-
Year	-0.05 *	0.03	-0.05 *	0.03	-	-	-	-
CEO tenure	0.01	0.01	0.01	0.01	0.01	0.01	-	-
COO presence	-0.04	0.12	-0.09	0.12	-0.03	0.12	-	-
Prior performance	-0.01	0.01	-0.02	0.02	-0.01	0.01	-	-
Customer ratio	-0.10	0.27	-0.05	0.26	-0.08	0.26	-	-
SIC2	-	-	included		-	-	-	-
Wald X^2	13.82		22.48		11.1			

*p<.1, **p<.05, ***p<.01

a= pooled logistic GEE regression over 2000-2010. N= 1348.

b= same as Model 1, but controlling for industry effects at two digit SIC level. N= 1348.

c= same as Model 1, but without year. N= 1348.

† A= USA data 2000-2010; B= reported in Nath & Mahajan (2008)

The same replicate data set was used to assess the firm performance analyses done by Nath and Mahajan (2008) in the same way as was completed for the hypothesized antecedents. Table D.11 presents a summary of Nath and Mahajan's (2008) hypothesized and reported direct and moderated effects of the presence of a CMO on firm performance (tobin's q and sales growth). Table D.12 presents the GLS regression results for the dependent variables *Tobin's q* and *Sales Growth* for the USA data over the 2000-2004, time frame. No main effect was found for the presence of a CMO on either

Tobin's q or *Sales Growth.* Each variable hypothesized to have an association with the presence of a CMO from the antecedent model was introduced separately as an interaction term for each firm performance variable. Only one interaction was significant; the interaction

Table D.10: Summary of hypothesized direct and interaction effects of the presence of a CMO on firm performance and actual results

				Dependent Variable	
		†Predicted	†Reported	Tobin's q	Sales Growth
Direct effect	CMO presence		no effect	no effect	no effect
Interactions	a. Innovation x CMO	positive	no effect	negative ***	no effect
	b. Differentiation x CMO	positive	no effect	no effect	no effect
	c. Corporate branding x CMO	positive	no effect	no effect	no effect
	d. Outsider CEO x CMO	positive	no effect	no effect	no effect
	e. Market concentration x CMO	positive	no effect	no effect	no effect

*p<.1, **p<.05, ***p<.01
†Nath & Mahajan (2008)

between the presence of a CMO and *Innovation* with *Tobin's q* (Table D.11) was significant and negative, rather than positive, as predicted. The replicated data set results confirmed the prior published results of Nath and Mahajan (2008). Support was not found for the hypotheses that there is a positive and significant relationship between firm performance and the interaction of a CMO and, 1) innovation, 2) differentiation, 3) corporate branding, 4) an outsider CEO, and 5) a concentrated market segment.

Table D.11: GLS regression results with firm performance as the dependent variable 2000-2004

	Dependent Variable				Dependent Variable					
	Tobin's q		Tobin's q		Sales Growth		Sales Growth		Support for Hypotheses	
	Model 1[a]		Model 1[b]		Model 2[a]		Model 2[b]			
	coef	se	coef	se	coef	se	coef	se	A†	B†
Constant	0.57 ***	0.14	0.62 ***	0.14	0.04	0.03	0.03	0.03	-	-
Innovation	1.47 ***	0.49	2.46 ***	0.67	0.39 ***	0.13	0.29 ***	0.11	-	-
Differentiation	2.45 ***	0.95	2.42 ***	0.94	0.34	0.24	0.36	0.24	-	-
Corporate branding	-0.09	0.08	-0.10	0.08	-0.03	0.02	-0.03	0.02	-	-
Outsider CEO	0.12	0.14	0.12	0.14	0.01	0.02	0.01	0.02	-	-
Market Concentration	0.59	0.67	0.44	0.67	0.14	0.15	0.15	0.15	-	-
Firm size	0.02	0.04	0.02	0.03	0.01	0.01	0.01	0.01	-	-
CEO tenure	0.01	0.01	0.01	0.01	0.01 *	0.01	0.00 *	0.00	-	-
COO presence	0.01	0.08	0.01	0.08	0.02	0.02	0.02	0.02	-	-
Prior performance	0.53 ***	0.05	0.53 ***	0.05	0.27 ***	0.06	0.27 ***	0.06	-	-
ROA	0.37	0.23	0.36	0.23	-0.15	0.05	-0.04	0.05	-	-
Sales growth	1.34 ***	0.29	1.34 ***	0.29	-	-	-	-	-	-
CMO presence	-0.04	0.08	-0.02	0.08	-0.02	0.02	-0.02	0.02	No	No
Innovation x CMO	-	-	-2.27 ***	0.82	-	-	0.21	0.21	No	No

*p<.1, **p<.05, ***p<.01

1a= with CMO direct effect; N=757, groups=166,Wald $X^2(12)=495.73$, Prob > $X^2=.0001$

1b= with direct and interaction term; N=653, groups=166,Wald $X^2(12)=511.68$, Prob > $X^2=.0001$

2a= with CMO direct effect, N=505, groups=166,Wald $X^2(11)=47.67$, Prob > $X^2=.0001$

2b= with dirct and interaction term; N=505, groups=166,Wald $X^2(11)=47.67$, Prob > $X^2=.0001$

† A= USA data 2000-2004; B= reported in Nath & Mahajan (2008)

APPENDIX E

COUNTRY LEVEL COMPARISONS

The country level firm performance comparisons for the 2000-2010 time period are presented here. The GLS results are presented first for the USA, Germany and UK, and then the GEE results. The summary support for the proposed hypotheses follow. Finally, the performance results for each country over the recessionary period from 2008-2010 are presented.

Table E.1: GLS random effects analysis of SME impact on firm performance for the USA from 2000-2010

	Industry Adjusted Market Based Performance						Industry Adjusted Revenue Based Performance					
	Tobin's q		MTB(assets)[a]		MTB(equity)[a]		Sales Growth[a]		ROA[a]		ROS[a]	
	coef	se	coef	se	coef	se	coef	se	coef	se	coef	se
Constant	0.25 **	0.12	0.18	0.16	2.68	5.02	-2.64	3.4	-0.05 *	0.03	-0.25	0.19
SME presence	0.04	0.06	0.04	0.11	2.83	2.22	-0.00	2.06	-0.05	0.04	-0.21	0.48
Institutional Interactions												
Isomorphic pressure x SME	0.19	0.15	0.13	0.14	-7.56 *	4.46	0.33	1.09	0.06	0.04	0.60	0.83
Marketing acceptance x SME	-0.03	0.04	-0.06	0.04	-2.47	1.52	-0.04	1.03	0.01	0.01	-0.16	0.27
Board membership x SME	-0.33 **	0.20	-0.37 **	0.14	0.26	1.53	-1.22	0.96	0.12 ***	0.04	0.22	0.28
Structural Interactions												
Industry turbulence x SME	-0.01	0.02	-0.02	0.02	0.71	0.49	-4.87	4.07	0.01	0.01	0.04	0.12
Internationalization x SME	-0.02	0.04	-0.02	0.04	2.52 **	1.20	0.47	0.85	-0.00	0.01	0.02	0.08
Strategic Interactions												
Corporate brand x SME	-0.10	0.11	0.13	0.11	3.36	3.21	-2.82	2.18	-0.02	0.02	0.07	0.28
House of brands x SME	-0.19	0.15	-0.04	0.16	4.98	3.47	-0.19	0.92	-0.02	0.04	0.06	0.24
Business to customer x SME	0.05	0.11	0.11	0.21	6.38	4.35	2.30	3.06	0.07	0.04	0.08	0.10
Business to business x SME	0.04	0.12	-0.06	0.11	1.01	2.85	3.81	2.69	0.04	0.02	0.19	0.10
Service product x SME	-0.15	0.14	-0.06	0.14	-7.52	5.63	1.49	1.32	0.01	0.03	-0.08	0.23
Year[c]	-0.02 **	0.01	-0.01	0.01	-0.18	0.23	0.36	0.24	0.01 **	0.00	0.02	0.02
Wald X^2	239.63 ***		225.10 ***		93.46 ***		94.52 ***		64.60 ***		225.8 ***	
R sq	0.44		0.51		0.01		0.028		0.01		0.162	
Observations	3296		3142		3140		2917		3292		3291	

*p<.1, **p<.05, ***p<.01

a= Tobin's q, MTB(assets), MTB(equity), Sales Growth, ROA and ROS, R&D intensity, and Prior performance are centered at the country and two digit SIC level to control for industry segment effects.

b=Prior performance is the lagged form of the dependent variable.

c= Year is controlled for as a dummy variable.

Table E.2: GLS random effects analysis of SME impact on firm performance for Germany from 2000-2010

	Industry Adjusted Market Based Performance						Industry Adjusted Revenue Based Performance					
	Tobin's q		MTB(assets)[a]		MTB(equity)[a]		Sales Growth[a]		ROA[a]		ROS[a]	
	coef	se	coef	se	coef	se	coef	se	coef	se	coef	se
Constant	-0.87	0.54	-2.10	10.50	-24.5	29.35	0.18	0.1	1.80	1.90	0.08	0.09
SME presence	0.76	0.85	3.47	5.64	-16.14	14.10	-0.25	0.28	-0.49	0.56	-0.12	0.08
Institutional Interactions												
Isomorphic pressure x SME	0.47	0.32	-7.47	7.64	-7.27	7.81	0.06	0.08	-0.09	0.24	-0.02	0.05
Marketing acceptance x SME	0.25	0.23	-1.6	4.30	-2.90	2.74	-0.06	0.08	-0.11	0.14	-0.02	0.03
Board membership x SME	-0.06	0.18	-0.31	0.36	0.05	1.72	0.04	0.03	-0.09	0.11	0.03	0.02
Structural Interactions												
Industry turbulence x SME	0.08 *	0.05	-0.32	0.36	5.81	4.88	0.00	0.01	-0.04	0.05	-0.00	0.00
Internationalization x SME	-0.03	0.07	-1.98	1.42	-1.15	1.69	0.02 *	0.01	-0.30	0.32	0.00	0.01
Strategic Interactions												
Corporate brand x SME	-0.15	0.23	-4.47	3.30	-6.30	5.39	-0.05	0.04	0.63	0.62	-0.02	0.03
House of brands x SME	0.29	0.28	1.24	1.74	9.20	8.02	0.68 ***	0.14	0.92	0.99	-0.02	0.03
Business to customer x SME	0.15	0.36	5.51	4.20	17.46	15.64	0.03	0.04	0.73	0.85	0.03	0.03
Business to business x SME	-0.24	0.28	4.03	2.92	14.72	13.59	0.01	0.05	-0.86	0.89	0.02	0.02
Service product x SME	0.44	0.33	3.02	2.44	-0.21	3.34	0.06	0.05	0.36	0.39	0.07 **	0.03
Year[c]	0.03 **	0.01	0.25	0.32	1.97	1.99	-0.01	0.00	-0.04	0.04	-0.00	0.00
Wald X^2	244.9 ***		$6.2x10^5$ ***		19.41		184.63 ***		$1.9x10^6$ ***		172.9 ***	
R sq	0.65		0.74		0.03		0.10		0.55		0.04	
Observations	806		848		848		782		840		841	

*p<.1, **p<.05, ***p<.01

a= Tobin's q, MTB(assets), MTB(equity), Sales Growth, ROA and ROS, R&D intensity, and Prior performance are centered at the country and two digit SIC level to control for industry segment effects.

b=Prior performance is the lagged form of the dependent variable.

c= Year is controlled for as a dummy variable.

Table E.3: GLS random effects analysis of SME impact on firm performance for the UK from 2000-2010

	Industry Adjusted Market Based Performance						Industry Adjusted Revenue Based Performance					
	Tobin's q		MTB(assets)[a]		MTB(equity)[a]		Sales Growth[a]		ROA[a]		ROS[a]	
	coef	se	coef	se	coef	se	coef	se	coef	se	coef	se
Constant	-0.05	0.33	-0.24	0.51	2.79	41.06	-0.02	0.09	0.09	0.14	0.02	0.08
SME presence	0.36	0.66	0.27	0.52	-14.31	12.56	0.08	0.08	-0.06	0.09	0.16 **	0.07
Institutional Interactions												
Isomorphic pressure x SME	-0.32	0.69	-0.69	0.98	-8.42	8.71	-0.19	0.13	-0.16	0.14	-0.06	0.07
Marketing acceptance x SME	0.02	0.16	-0.03	0.19	4.30	4.67	-0.03	0.03	-0.02	0.03	-0.01	0.02
Structural Interactions												
Industry turbulence x SME	-0.03	0.09	-0.50	0.15	-0.85	1.85	0.02	0.01	0.01	0.03	-0.01	0.01
Internationalization x SME	-0.03	0.15	-0.08	0.27	7.17	5.37	0.12	0.04	-0.02	0.05	0.01	0.02
Strategic Interactions												
Corporate brand x SME	0.75 **	0.39	0.86 *	0.76	16.86	17.12	0.03	0.08	0.05	0.06	-0.14	0.13
House of brands x SME	0.39	0.46	0.22	0.41	13.35	11.87	0.17	0.09	0.05	0.05	-0.10	0.15
Business to customer x SME	-0.41	0.42	-0.40	0.56	16.06	13.52	-0.31	0.08	0.11	0.10	-0.01	0.06
Business to business x SME	-1.25 **	0.65	-0.92 *	0.69	2.20	21.20	-0.33	0.17	0.12	0.11	0.02	0.16
Service product x SME	0.26	0.48	-0.02	0.72	5.91	16.22	0.26	0.19	0.11	0.07	0.09	0.06
Year[c]	0.03 **	0.01	-0.03	0.03	0.84	1.51	0.01	0.01	0.00	0.00	0.00	0.00
Wald X^2	163.99[d] ***		127.37[d] ***		16.58[d]		73.49[d] ***		63.88[d] ***		108.06[d] ***	
R sq	0.58		0.30		0.06		0.15		0.45		0.29	
Observations	471		477		482		436		477		490	

*p<.1, **p<.05, ***p<.01

Note: There were no observed instances of a SME being a board member, so the "*Board membership x SME*" variable was dropped from the UK analyses.

a= Tobin's q, MTB(assets), MTB(equity), Sales Growth, ROA and ROS, R&D intensity, and Prior performance are centered at the country and two digit SIC level to control for industry segment effects.

b=Prior performance is the lagged form of the dependent variable.

c= Year is controlled for as a dummy variable.

d= Bootstrap of 50 replications.

Table E.4: GEE random effects analysis of SME impact on firm performance for the USA from 2000-2010

	Industry Adjusted Market Based Performance						Industry Adjusted Revenue Based Performance					
	Tobin's q		MTB(assets)[a]		MTB(equity)[a]		Sales Growth[a]		ROA[a]		ROS[a]	
	coef	se	coef	se	coef	se	coef	se	coef	se	coef	se
Constant	0.78 ***	0.18	0.54 ***	0.14	2.83	4.95	-3.04	3.8	-0.06 **	0.02	-0.27	0.19
SME presence	0.27 *	0.14	0.21	0.13	2.57	2.13	-0.66	3.01	-0.01	0.02	-0.18	0.61
Institutional Interactions												
Isomorphic pressure x SME	0.08	0.13	0.05	0.13	-6.77 *	3.99	0.79	2.76	0.03	0.03	0.52	0.87
Marketing acceptance x SME	-0.13 ***	0.05	-0.14 ***	0.04	-2.35 *	1.40	-0.24	1.09	-0.00	0.01	-0.18	0.29
Board membership x SME	-0.39 *	0.21	-0.43 **	0.21	0.39	1.43	-0.54	0.96	0.04 **	0.02	0.25	0.27
Structural Interactions												
Industry turbulence x SME	0.00	0.02	-0.01	0.03	0.82	0.63	-4.67	4.01	0.00	0.01	0.04	0.11
Internationalization x SME	-0.06	0.04	-0.06	0.04	2.17 **	1.05	0.57	0.93	-0.01	0.01	0.03	0.09
Strategic Interactions												
Corporate brand x SME	-0.10	0.14	-0.13	0.12	3.42	2.99	-3.40	2.52	-0.00	0.02	-0.11	0.31
House of brands x SME	-0.33 **	0.14	-0.32 **	0.13	3.65	3.10	-0.03	1.46	-0.01	0.03	0.01	0.19
Business to customer x SME	-0.05	0.19	0.13	0.17	5.15	3.74	3.85	3.97	0.05	0.05	0.12	0.40
Business to business x SME	0.06	0.15	0.10	0.13	0.61	2.52	4.93	3.14	-0.02	0.02	0.22	0.42
Service product x SME	-0.20	0.21	-0.16	0.18	0.17	0.02	2.29	1.68	0.01	0.02	-0.02	0.26
Year[c]	-0.06 ***	0.01	-0.04 ***	0.01	-0.18	0.23	0.53	0.36	0.00	0.00	0.02	0.02
Wald X^2	236.03 ***		194.73 ***		2002.14 ***		$1.1x10^5$ ***		134.42 ***		496.8 ***	
Observations	3232		3091		3085		2868		3228		3236	

*p<.1, **p<.05, ***p<.01

a= Tobin's q, MTB(assets), MTB(equity), Sales Growth, ROA and ROS, R&D intensity, and Prior performance are centered at the country and two digit SIC level to control for industry segment effects.

b=Prior performance is the lagged form of the dependent variable.

c= Year is controlled for as a dummy variable.

Table E.5: GEE random effects analysis of the SME impact on firm performance for Germany from 2000-2010

	Industry Adjusted Market Based Performance						Industry Adjusted Revenue Based Performance					
	Tobin's q		MTB(assets)[a]		MTB(equity)[a]		Sales Growth[a]		ROA[a]		ROS[a]	
	coef	se	coef	se	coef	se	coef	se	coef	se	coef	se
Constant	0.89	0.62	-1.98	11.88	-29.47	33.35	0.33 **	0.2	1.06	1.12	0.04	0.09
SME presence	0.29	1.08	-5.04	6.55	-17.93	15.02	-0.33	0.32	-0.37	0.44	-0.10	0.09
Institutional Interactions												
Isomorphic pressure x SME	0.73 *	0.42	-6.67	6.94	-9.42	9.32	0.07	0.09	-0.04	0.14	-0.03	0.04
Marketing acceptance x SME	0.06	0.28	-2.05	3.11	-3.56	3.16	-0.07	0.10	-0.05	0.08	-0.02	0.03
Board membership x SME			-0.07	0.48	0.50	1.95	0.03	0.04	-0.02	0.05	0.03	0.02
Structural Interactions												
Industry turbulence x SME	0.07	0.06	0.18	0.32	6.25	5.13	0.00	0.01	-0.02	0.03	-0.00	0.00
Internationalization x SME	0.00	0.09	-1.61	1.17	-1.44	1.35	0.03 **	0.01	-0.15	0.16	0.00	0.01
Strategic Interactions												
Corporate brand x SME	-0.13	0.27	-4.54	3.11	5.77	5.02	0.05	0.06	-0.33	0.34	0.03	0.02
House of brands x SME	0.69	0.33	1.20	1.64	8.71	7.62	0.93 **	0.02	0.13	0.23	0.00	0.02
Business to customer x SME	-0.44	0.48	8.68	5.77	18.08	16.37	0.01	0.08	0.79	0.83	0.00	0.01
Business to business x SME	-0.74	0.40	4.11	2.76	15.18	13.70	-0.04	0.06	0.42	0.46	-0.02	0.02
Service product x SME	0.48	0.57	3.42	2.81	-0.98	4.33	0.18	0.06	0.32	0.33	0.05 **	0.02
Year[c]	-0.02	0.02	0.29	0.34	2.21	2.16	-0.01	0.01	-0.02	0.02	-0.00	0.00
Wald X^2	26.66		$8.4x10^5$ ***		19.05		219.96 ***		$8.4x10^6$ ***		1219.8 ***	
Observations	750		790		790		714		781		782	

*p<.1, **p<.05, ***p<.01

a= Tobin's q, MTB(assets), MTB(equity), Sales Growth, ROA and ROS, R&D intensity, and Prior performance are centered at the country and two digit SIC level to control for industry segment effects.

b=Prior performance is the lagged form of the dependent variable.

c= Year is controlled for as a dummy variable.

Table E.6: GEE random effects analysis of the SME impact on firm performance for the UK from 2000-2010

	Industry Adjusted Market Based Performance						Industry Adjusted Revenue Based Performance					
	Tobin's q		MTB(assets)[a]		MTB(equity)[a]		Sales Growth[a]		ROA[a]		ROS[a]	
	coef	se	coef	se	coef	se	coef	se	coef	se	coef	se
Constant	0.48	0.93	-0.25	0.44	-3.40	12.17	0.06	0.06	0.06	0.04	0.04	0.03
SME presence	-0.12	0.74	0.48	0.51	-13.47	8.91	0.04	0.08	0.03	0.06	0.07	0.05
Institutional Interactions												
Isomorphic pressure x SME	-0.19	1.07	-0.67	0.67	-28.95 *	15.09	-0.23	0.14	0.07	0.08	-0.05	0.05
Marketing acceptance x SME	0.04	0.13	0.12	0.17	6.74	7.05	-0.04	0.03	0.02	0.02	0.01	0.02
Structural Interactions												
Industry turbulence x SME	-0.13	0.17	-0.09	0.10	-2.11	1.70	0.03	0.01	-0.02	0.01	-0.01	0.01
Internationalization x SME	0.05	0.57	-0.27	0.21	7.79	4.97	0.05	0.03	-0.03	0.02	-0.01	0.01
Strategic Interactions												
Corporate brand x SME	1.15 ***	0.25	1.33 ***	0.34	27.10	19.67	0.18	0.05	0.03	0.07	-0.01	0.02
House of brands x SME	1.50 ***	0.43	1.13 ***	0.48	40.34 **	20.38	0.12	0.12	-0.00	0.06	-0.02	0.02
Business to customer x SME	-0.92	0.29	-0.70 *	0.32	7.04	9.72	-0.23	0.08	0.02	0.05	0.00	0.02
Business to business x SME	-1.54	0.59	-1.27 **	0.66	-3.19	11.39	-0.16	0.07	-0.14	0.09	-0.05	0.03
Service product x SME	0.16	0.47	0.10	0.47	22.75	16.87	0.19	0.06	0.06	0.06	0.04	0.03
Year[c]	-0.33	0.21	0.01	0.02	1.60	2.31	0.02 **	0.01	0.00	0.00	0.00	0.01
Wald X^2	$1.1x10^{5d}$ ***		$4.7x10^{4d}$ ***		195.99		$3.4x10^{3d}$ ***		$5.3x10^{4d}$ ***		$1.2x10^{4d}$ ***	
Observations	288		339		340		274		477		302	

*p<.1, **p<.05, ***p<.01

Note: There were no observed instances of a SME being a board member, so the "*Board membership x SME*" variable was dropped from the UK analyses.

a= Tobin's q, MTB(assets), MTB(equity), Sales Growth, ROA and ROS, R&D intensity, and Prior performance are centered at the country and two digit SIC level to control for industry segment effects.

b=Prior performance is the lagged form of the dependent variable.

c= Year is controlled for as a dummy variable.

d= Bootstrap of 50 replications.

Table E.7: Summary of findings of SME impact on market based firm performance metrics using GEE

		Tobin's q			MTB(assets)			MTB(equity)		
Hypothesis	**Predicted**	**USA**	**Germany**	**UK**	**USA**	**Germany**	**UK**	**USA**	**Germany**	**UK**
Hypothesis 8	Positive	Yes (*)	No	No	No	No	No	No	No	Yes (**)
Hypothesis 9	Positive	No	Yes (*)	No	No	No	No	No	No	No
Hypothesis 10	Positive	No	No	No	No	No	No	No	No	No
Hypothesis 11	Positive	No	No	No	No	No	No	No	No	No
Hypothesis 12	Positive	No	No	No	No	No	No	No	No	No
Hypothesis 13	Positive	No	No	No	No	No	No	No	No	No
Hypothesis 14	Positive	No	No	Yes (***)	No	No	Yes (***)	No	No	No
Hypothesis 15	Positive	No	No	No	No	No	No	No	No	No
Hypothesis 16	Positive	No	No	No	No	No	No	No	No	No

*p<.1; **p<.05; ***p<.01

Note: all independent variables testing hypotheses were lagged one year.

Variables for hypotheses 3 & 4 were centered by two digit SIC code.

The year was controlled by using a dummy variable with 2000 as the reference year.

Table E.8: Summary of findings of SME impact on accounting based firm performance metrics using GEE

		Sales Growth			ROA			ROS		
Hypothesis	**Predicted**	**USA**	**Germany**	**UK**	**USA**	**Germany**	**UK**	**USA**	**Germany**	**UK**
Hypothesis 8	Positive	No	No	No	No	No	No	No	No	No
Hypothesis 9	Positive	No	No	No	No	No	No	No	No	No
Hypothesis 10	Positive	No	No	No	No	No	No	No	No	No
Hypothesis 11	Positive	No	No	No	Yes (**)	No	No	No	No	No
Hypothesis 12	Positive	No	No	No	No	No	No	No	No	No
Hypothesis 13	Positive	No	Yes (**)	No	No	No	No	No	No	No
Hypothesis 14	Positive	No	No	No	No	No	No	No	No	No
Hypothesis 15	Positive	No	No	No	No	No	No	No	No	No
Hypothesis 16	Positive	No	No	No	No	No	No	No	Yes (**)	No

*p<.1; **p<.05; ***p<.01

Note: all independent variables testing hypotheses were lagged one year.

Variables for hypotheses 3 & 4 were centered by two digit SIC code.

The year was controlled by using a dummy variable with 2000 as the reference year.

Table E.9: GLS random effects analysis of USA SME impact on firm performance 2008-2010

	Industry Adjusted Market Based Performance						Industry Adjusted Revenue Based Performance					
	Tobin's q		MTB(assets)[a]		MTB(equity)[a]		Sales Growth[a]		ROA[a]		ROS[a]	
	coef	se	coef	se	coef	se	coef	se	coef	se	coef	se
Constant	-0.29	0.29	0.54	0.29	-39.77	30.47	9.26	22.84	-0.35	0.08	-3.27	3.98
SME presence	0.09	0.09	0.90	0.10	2.39	1.88	-1.49	3.71	-0.01	0.04	-0.91	1.66
Institutional Interactions												
Isomorphic pressure x SME	0.05	0.12	0.04	0.13	-5.71	4.38	2.41	2.69	-0.06	0.06	1.77	2.53
Marketing acceptance x SME	-0.11	0.07	-0.11	0.07	-3.28 *	1.89	-1.49	2.04	-0.08 ***	0.02	0.26	0.94
Board membership x SME	-0.30 **	0.15	-0.34 *	0.19	-0.28	1.83	-6.24	7.42	0.10 *	0.06	-0.37	2.21
Structural Interactions												
Industry turbulence x SME	-0.07	0.05	-0.10 *	0.06	-1.02	1.37	-4.19	3.15	-0.01	0.02	-0.55	0.89
Internationalization x SME	0.01	0.03	0.02	0.03	2.39	1.95	-0.79	1.12	0.01	0.01	0.19	0.34
Strategic Interactions												
Corporate brand x SME	0.10	0.08	0.09	0.09	1.27	2.44	-3.11	4.79	0.01	0.04	0.35	1.13
House of brands x SME	-0.11	0.16	-0.07	0.10	5.74	3.57	-0.86	2.62	0.02	0.06	-0.53	0.68
Business to customer x SME	-0.00	0.19	0.05	0.20	0.06	3.56	2.49	6.46	0.06	0.09	-0.06	0.77
Business to business x SME	-0.08	0.09	-0.08	0.10	2.29	2.57	4.91	4.61	0.00	0.04	0.38	1.16
Service product x SME	-0.05	0.09	-0.04	0.10	-0.90	1.74	4.29	3.19	-0.04	0.04	-0.41	1.09
Year[c]	0.02	0.03	-0.06	0.03	3.81	2.97	-0.76	2.01	0.03 ***	0.01	0.32	0.42
Wald X^2	2501.7 ***		3271.40 ***		845.69 ***		21.94		82.94 ***		92.6 ***	
R sq	0.66		0.63		0.02		0.02		0.06		0.12	
Observations	835		804		804		830		835		833	

*p<.1, **p<.05, ***p<.01

Note: There were no observed instances of a SME being a board member, so the "*Board membership x SME*" variable was dropped from the UK analyses.

a= Tobin's q, MTB(assets), MTB(equity), Sales Growth, ROA and ROS, R&D intensity, and Prior performance are centered at the country and two digit SIC level to control for industry segment effects.

b=Prior performance is the lagged form of the dependent variable.

c= Year is controlled for as a dummy variable.

Table E.10: GEE random effects analysis of USA SME impact on firm performance 2008-2010

	Industry Adjusted Market Based Performance						Industry Adjusted Revenue Based Performance					
	Tobin's q		MTB(assets)[a]		MTB(equity)[a]		Sales Growth[a]		ROA[a]		ROS[a]	
	coef	se	coef	se	coef	se	coef	se	coef	se	coef	se
Constant	-0.34	0.29	0.58 *	0.30	-37.78	28.32	9.20	22.57	-0.04	0.10	-1.72	4.61
SME presence	0.06	0.09	0.07	0.10	2.45	1.90	-1.58	3.65	0.02	0.02	-1.62	2.29
Institutional Interactions												
Isomorphic pressure x SME	0.05	0.11	0.03	0.12	-5.11	3.78	2.32	2.58	-0.01	0.03	1.61	2.76
Marketing acceptance x SME	-0.12 *	0.07	-0.13 *	0.07	-3.46 *	2.04	-1.61	2.11	-0.09	0.03	0.04	0.83
Board membership x SME	-0.24	0.17	-0.27	0.21	-0.49	1.78	-6.09	7.43	-0.01	0.03	0.83	2.56
Structural Interactions												
Industry turbulence x SME	-0.06	0.06	-0.08	0.07	-0.81	1.25	-4.23	3.18	-0.01	0.02	-0.70	0.90
Internationalization x SME	0.01	0.02	0.02	0.02	2.29	1.85	-0.73	1.10	-0.01	0.01	0.49	0.47
Strategic Interactions												
Corporate brand x SME	0.06	0.07	0.03	0.07	1.15	2.31	-3.00	4.81	0.01	0.01	-0.30	1.59
House of brands x SME	-0.11	0.14	-0.07	0.14	5.65	3.55	-0.60	2.64	-0.01	0.03	-0.41	0.82
Business to customer x SME	-0.03	0.18	0.04	0.18	0.37	3.50	2.66	6.76	-0.01	0.04	0.23	1.28
Business to business x SME	-0.02	0.07	0.00	0.07	2.02	2.51	4.95	4.63	0.00	0.01	1.51	1.82
Service product x SME	-0.04	0.08	-0.03	0.09	-0.99	1.76	4.52	3.27	-0.03 **	0.02	-0.06	1.41
Year[c]	0.03	0.03	-0.06 **	0.03	3.61 *	2.78	-0.76	1.98	0.01	0.01	0.16	0.46
Wald X^2	3612.3 ***		4703.10 ***		179.23		143.90 ***		1128.49 ***		399.65 ***	
Observations	816		786		786		811		816		815	

*p<.1, **p<.05, ***p<.01

Note: There were no observed instances of a SME being a board member, so the "*Board membership x SME*" variable was dropped from the UK analyses.

a= Tobin's q, MTB(assets), MTB(equity), Sales Growth, ROA and ROS, R&D intensity, and Prior performance are centered at the country and two digit SIC level to control for industry segment effects.

b=Prior performance is the lagged form of the dependent variable.

c= Year is controlled for as a dummy variable.