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ORIGINAL PAPER

Exploring strategic planning outcomes: the influential role of top versus middle management participation

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Abstract This paper explores whether the relationships among different dimensions of strategic planning outcomes are moderated by the predominant participation of top via middle managers in the strategic planning process. Drawing on survey data from 164 large firms, we use structural equation modeling to examine the relationships among four outcome variables. We provide support for three major findings. First, the Strategically Aligned Behavior of middle and lower managers is positively associated with both successful strategy implementation and the effectiveness of strategic planning, while the former is also positively related with the latter. These relationships are robust to accounting for the extent of participation by top or middle managers in the strategic planning process. Second, having top managers play a predominant role the strategic planning process fosters the positive relationship between successful strategy implementation and Organizational Performance. Third, having middle managers play a dominant role in the strategic planning process supports the significantly positive effect of Strategic Planning Effectiveness on Organizational Performance. Overall, we conclude that improvements in Organizational Performance result from the choice of participation of top and/or middle management in the strategy process.

Keywords Strategic planning process · Aligned Behavior · Implementation success · Strategic Planning Effectiveness · Organizational Performance · Top management · Middle management

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1 Introduction

For at least 20 years, the role of managers at different levels, especially of top management teams (TMT) and middle managers (MM), in strategy making has been discussed in light of the dichotomy between 'rational planning' and 'planned emergence' (e.g., Miller 1987; Burgelman 1988; Wooldridge and Floyd 1990; Floyd and Wooldridge 1992; Dutton et al. 1997; Huy 2002; Boone and Hendriks 2009; Anderson and Nielsen 2009). Grant (2003) argues that the strategic planning process should be integrative. The strategic planning process can be defined 'as a more or less formalized, periodic process that provides a structured approach to strategy formulation, strategy implementation, and control' (Wolf and Floyd 2013, p. 5), a concept that Schendel and Hofer (1979) defined as the strategic management process.

The intensity of participation by top and middle management in the strategic planning process is an essential design characteristic of this process (Kuerschner and Guenther 2012) because performance improvement necessitates interactions among different management levels in formulating and implementing strategies (e.g., Grant 2003; Andersen 2004).

Furthermore, research on top or middle management participation in the strategic planning process is characterized by different views, conceptualizations, and theories (e.g., upper echelon, role theory, the concepts of locus of planning, corporate entrepreneurship, and strategic renewal). Thus, empirical evidence obtained to date on the relationship between top and/or middle management participation and Organizational Performance (OP) is ambiguous (see, e.g., the meta-analysis of Kuerschner and Guenther 2012). Traditional role concepts of top-down or bottom-up strategic planning assign ratifying, recognizing, and directing strategies to top management, whereas middle management is involved in presenting and selling issues to top management and in facilitating and implementing intended strategies (Floyd and Lane 2000). Furthermore, Burgelman (1983b)'s idea of induced and autonomous strategic initiatives can be related to top or middle management participation.

Thus, it is necessary to better understand the outcomes of top and middle management participation in the strategic planning process. Recent publications highlight the importance of interactions among different management levels for corporate success (e.g., Jarzabkowski and Balogun 2009; Rouleau and Balogun 2011; Abdallah and Langley 2013; Paroutis and Heracleous 2013). In brief, these contributions argue that multi-level participation in the strategic planning process is crucial for the companywide acceptance of strategies and, thus, goal convergence (Ketokivi and Castañer 2004), which in turn appears to be associated with managerial effectiveness because goal convergence is primarily goal- and performance-oriented (Grant 2003). Highlighting the complementary role of top and middle managers, Glaser et al. (2015) show that a common understanding on strategic initiatives tend to have a positive impact on strategic planning outcomes, e. g., strategic renewal and exploratory innovation. A top management approach to corporate entrepreneurship in the form of strategic renewal may be most effective as top managers play a key role in developing exploratory innovation. Thereby, the authors foster the idea of empirically examining the effects of different roles and by "uncovering the benefits and costs of social exchanges for strategic renewal" (Glaser et al. 2015, p. 305).

Following Chenhall (2003) and Raes et al. (2011), using Organizational (Financial) Performance as an outcome measure may generate biased results due to a multitude of effects that generally cannot be controlled for in empirical studies. Moreover, Raes et al. (2011) state that proximate outcome measures such as 'strategic decision quality' or 'implementation quality' have seldom been investigated and argue for using both in their conceptual model. Thus, we disentangle 'performance' as an outcome measure for top vs. middle management participation in the strategy process by examining diverse and less distant outcome measures that are able to more explicitly and directly reveal the effects of management participation. Thus, for our study we use 'Strategically Aligned Behavior' of subordinates, 'Strategy Implementation Success', and 'Strategic Planning Effectiveness' as already validated more proximate outcome constructs and Organizational Performance, which is the more commonly used and more distant outcome measure (Wolf and Floyd 2013). A literature review indicates that Organizational (Financial) Performance is the most common outcome measure for the effect of management participation (e.g., Wooldridge and Floyd 1990; Floyd and Wooldridge 1997; Mair 2005; Boone and Hendriks 2009; Ahearne et al. 2014, and the literature review of Wooldridge et al. (2008)). Some more recent papers also examine or suggest more proximate outcome measures (e.g., Ren and Guo 2011; Raes et al. 2011; Mirabeau and Maguire 2014; Glaser et al. 2015), but focus on one or two measures or do not analyze the relationship between financial and non-financial measures. Methodologically, the relationships those studies analyze are mostly direct and not moderating effects.

From a methodological perspective, the participation of top or middle managers is a moderating variable representing the context of a firm in the broader sense of contingency theory (e.g., Burns and Stalker 1961; Lawrence and Lorsch 1967; Donaldson 2001), when we explore relationships among outcome variables. When we measure direct effects, by construction, we omit many other potential antecedents (rigid vs. open context, centralized vs. decentralized planning system, strategic control vs. financial control by HQ, risk-averse or risk-loving actors, etc.) of the strategic planning process that we have to control for but cannot because the antecedents are too numerous. Thus, we believe that a moderating model improves our ability to explore the importance of management participation as one conditional or moderating variable (see also Hayes 2013).

Our study contributes to current literature in three ways. First, we disentangle 'performance' by separating four outcome dimensions that are better suited to assessing the different effects of top and middle management participation in the strategic planning process. These outcome dimensions also allow us to differentiate between more distant, but ultimately financial and more proximate, non-financial aspects of performance. The latter might ultimately be positively associated with financial performance. Second, we extend the literature by simultaneously exploring all four outcome variables in a single study. To do so, we use structural equation modeling (SEM) based on cross-sectional data from a survey of 164 large companies to explore the relationships among the four outcome measures of the strategic planning process (baseline model). We choose the context of large firms because 81 % of large companies worldwide across all industries practice strategic planning (Rigby 2001; Rigby and Bilodeau 2007). Third, we apply a multi-group approach to analyze the moderation effect of

top management vs. middle management participation on the baseline model. Thus, we expand role theory and upper echelon theory by exploring whether the relationships between organizational outcomes are moderated by top or middle manager's predominant participation in the strategic planning process has significant moderating effects and by examining the types of relationships for which a dual actor perspective of jointly participation of both management levels might be fruitful.

Our findings provide evidence that top and middle management participation in the strategy process tends to be equally important for improving specific organizational outcomes, i.e. Strategic Implementation Success and Strategic Planning Effectiveness. First, and regardless of whether top or middle management is centrally involved in the strategic planning process, we show that Strategically Aligned Behavior on the part of subordinates has a significant and positive association with both the success of strategic implementation and the effectiveness of strategic planning. Moreover, successful implementation is substantially related to the effectiveness of strategic planning. Thus, we shed some light on the relationships among the proximate outcome measures of the strategic planning process. Our results confirm that by including multiple levels of management (e.g., Wooldridge et al. 2008; Wolf and Floyd 2013; Mirabeau and Maguire 2014) strategic planning becomes both a social and a rational analytic process that highlights the integrative nature of strategic planning (Grant 2003). Thus, our results show that having two sets of actors that are balanced in their participation in the strategic planning process fosters positive relationships among outcome variables. Second, we show that successful strategic implementation fosters Organizational Performance when top managers are central participants in the strategic planning process. Thus, it tends to be necessary for top managers to fully commit to strategy and facilitate its implementation to ensure that the strategic plan can be implemented via the delegation of actions and responsibilities to ultimately improve Organizational Performance (e. g., Floyd and Lane 2000). In other words, strategy implementation drives performance when the influence of middle managers is limited (Floyd and Wooldridge 1997). Third, we find that the effectiveness of strategic planning is positively associated with Organizational Performance in the opposite case in which middle managers play a prominent role in the strategic planning process. Thus, we reiterate the argument that strategic planning at the middle management level should play a coordinating role (e.g., Grant 2003; Jarzabkowski and Balogun 2009). Our findings expand and challenge traditional role concepts as supported by upper echelon and role theory.

The remainder of this paper is organized as follows. First, we discuss the theoretical foundation and underlying literature. This is followed by a presentation of the research model and the development of hypotheses. The subsequent section presents the research methods, including sample definition, data collection, measurement and validation of constructs, and SEM model used. Subsequently, we describe the results of our analyses, which are supported by statistical robustness tests. Finally, major findings are discussed, limitations are identified, and conclusions are drawn.

2 Theoretical foundation and research model

Next, we review related strategic management literature that inspired our study and present our research model.

2.1 Theoretical foundation

To consistently translate intended into realized corporate strategy, participation in the strategic planning process is a major challenge for managerial practice (Canales and Wooldridge 2009; Wolf and Floyd 2013).

Following Hutzschenreuter and Kleindienst (2006), strategy processes can be described as a combination of three main elements: the strategists, the issue, and the sequence of actions. One essential element of the latter is the 'extent of participation' by management in the strategic planning process, which is the focus of our paper.[1] In our context, the extent of participation is defined by its quantitative dimension, whereas its qualitative dimension describes 'the actual degree of influence on strategic decisions' (Gerbing et al. 1994, p. 17). However, the qualitative dimension cannot be examined at the organizational level because the object of analysis must shift to the level of single, distinct decisions (Gerbing et al. 1994). Thus, the extent of participation is the degree of involvement of different management levels throughout the strategic planning process from strategy formulation to implementation and control (Wolf and Floyd 2013). This approach impedes dichotomization by separating the strategic planning process into different phases (Mintzberg 1978; Simons 1990). According to upper echelon theory, top managers represent the upper echelons that are primarily responsible for a firm's strategic direction and choices that determine overall performance (Hambrick and Mason 1984; Hambrick 2007). In contrast, middle managers are 'those actors who combine access to top management with knowledge of operations' (Schmid et al. 2010, p. 143).

Participation by different management levels in strategy processes is comprehensively discussed in the strategic management literature from different perspectives and using different concepts or theories. The literature review of Wooldridge et al. (2008) lists the following diverse set of "theoretical lenses" in the papers they analyze, but they are unable to be exhaustive: role theory, conversation theory, contingency theory, information theory, evolutionary theory, organizational learning, strategy as practice, etc. Furthermore, analyzing the theories addressed in case studies, surveys or conceptual papers connected to the focus of our paper confirms this diversity of theoretical foundations: normative and behavioral decision theory (Hart 1992), role theory (Floyd and Lane 2000), complexity theory (Grant 2003), activity theory (Jarzabkowski and Balogun 2009), structuration theory (Jarzabkowski 2008), communication theory (Spee and Jarzabkowski 2011), etc. This diversity of theories or conceptualizations addressed is confirmed by Grant (2003), who states, "… there is little theory relating to the design and functions of strategic planning systems within organizations. Analysis of the impact of organizational and environmental factors on the characteristics of strategic planning processes … has been based upon ad hoc hypothesizing rather than any integrated theory of the design and role of strategic planning processes" (Grant 2003: 495).

[1] In the literature, the construct 'extent of participation' is also termed 'extent of involvement' in strategic planning (e.g., Freeman 1989; Gerbing et al. 1994; Wolf and Floyd 2013).

Nevertheless, within the narrower focus of our paper, i.e., examining the moderating effect of top vs. middle management participation in the strategic planning process on various strategic planning outcomes, given the absence of an integrating theory, our theoretical foundation lies in upper echelon theory, role theory, the locus of planning concept, the concepts of corporate entrepreneurship and strategic renewal, which reveals the influence of different streams of research and underlying theories.

Following upper echelon theory, top management is influenced by psychological and observable characteristics and makes crucial strategic decisions that impact Organizational Performance (Hambrick and Mason 1984; Hambrick 2007). Upper echelon theory accords considerable importance to top management in the strategic planning process. Inspired by field observations, role theory (Biddle 1979,1986) identifies different strategic roles for managers in various strategic processes (Wooldridge and Floyd 1990; Hart 1992; Bartlett and Ghoshal 1995; Floyd and Wooldridge 1992, 1997; Currie and Procter 2005). Typically, the role of top management lies in ratifying, recognizing, and directing strategies, whereas middle management is involved in presenting and selling issues to top management, and in facilitating and implementing intended strategies (Floyd and Lane 2000). Thus, the two management levels fulfill different roles that both have positive but diverse effects on strategic planning outcomes.

At a more technical level, the locus of planning literature discusses the effects of centralized or decentralized strategic planning (e.g., Barringer and Bluedorn 1999; Entrialgo et al. 2000). Locus of planning refers to the depth of employee involvement in a firm's strategic planning activities. The meta-analysis of Kuerschner and Guenther (2012) reports mixed results with a small, positive effect of decentralization.

The research streams on corporate entrepreneurship (Barringer and Bluedorn 1999; Entrialgo et al. 2000; Hornsby et al. 2002; Hornsby et al. 2009; Glaser et al. 2015) and strategic renewal of the firm (e.g., Simons 1994; Floyd and Lane 2000) also address management participation as an antecedent of strategic change. Corporate entrepreneurship is considered a means of revitalizing established companies that is associated with risk taking, innovation, and proactive competitive behaviors, activities that are typically initiated by top management (Zahra 1991; Zahra and Covin 1995). However, middle management can also drive such activities (e.g., Hornsby et al. 2002). Strategic renewal concerns evolutionary models of strategic change (Burgelman 1983b; Huff et al. 1992; Barnett and Burgelman 1996). These models regard strategic renewal as an iterative process of values, actions, and learning to align the firm's strategy to changes in the environment. Literature addresses two major questions, first, whether top or middle managers are driving renewal activities. Thus, the role that top or middle managers play in strategic renewal is challenging and may result in role conflicts (e.g., Floyd and Lane 2000; Glaser et al. 2015) and conflicting results in research (Hornsby et al. 2002; Raes et al. 2011). On the one hand, top managers take over predominantly decision-making roles (Carpenter et al. 2004), whereas, on the other hand, middle managers communicate information between operations and top management, develop tactical objectives, and implement strategies (Huy 2001; Kuratko et al. 2005). Fourné (2014) argues that it may not be one or the other, but the joint involvement of both levels that determines the impact on outcome of renewal activities. Concerning the second question, the role of social exchanges, i.e., boundary

spanning, of different actors within the hierarchy as a manifestation of corporate entrepreneurship is discussed (Dess et al. 2003; Kleinbaum et al. 2007; Glaser et al. 2015).

According to the above mentioned theories and concepts, middle managers play a beneficial and supporting role that is associated with positive relationships with organizational outcomes (Grant 2003; Vilà and Canales 2008; Penrose 2009; Jarzabkowski and Balogun 2009; Spee and Jarzabkowski 2011), and these theories and concepts call for a stronger, more active role of middle management in the strategic planning process. However, middle management may also play a detrimental role, especially in strategic change and renewal processes, when, for example, middle managers' beliefs and emotions concerning their bosses are closely associated with the strategy plans initiated by top management and may call into question the legitimacy of strategy and top management itself, generate resistance to structural changes initiated by top management and create barriers to change and implementation. Middle managers who believe that chosen strategies challenge their self-interest may redirect these strategies, delay implementation or reduce the quality of implementation (e.g., Guth and MacMillan 1986). Furthermore, middle managers may react with resistance in the case of failures at the top (e.g., Ford et al. 2008; Huy et al. 2014). Finally, paradox theory has addressed the contrasts between various organizational demands (e.g., flexibility vs. efficiency, individual vs. collective, exploration vs. exploitation) that create tensions in an organization. Furthermore, the participation of top vs. middle management may be considered such a tension in the firm in the form of top-down vs. bottom-up planning or command vs. communication, in the context of efforts to support strategy implementation. These kind of tensions can be seen as such a paradox. Thus, we also address paradox theory as an umbrella theory for our setting.

In summary, the topic of our paper is characterized by diverse underlying conceptual and theoretical foundations. Our paper is primarily informed by upper echelon and role theory.

2.2 Outcome dimensions and literature review

The outcomes of strategic planning can be differentiated into intermediate and distal outcomes, and the intermediate outcomes in particular can be divided into several outcome dimensions (Wolf and Floyd 2013). Intermediate outcome dimensions play an important role because they identify 'the causal or processual mechanisms that explain how strategic planning influences organizational outcomes' (Wolf and Floyd 2013, p. 7). Our selection of outcome dimensions is informed by the review and framework of Wolf and Floyd (2013). They list different proximate outcome variables of the strategy process. As our focus is on the role of top or middle management participation in the strategy process, we select three intermediate outcomes and, finally, Organizational Performance (OP) as the more distant outcome that has been previously validated and employed in the empirical literature. We believe that the broad measurement of our constructs covers most of the outcome variables of Wolf and Floyd (2013) concerning the role of top vs. middle management.

The behavioral dimension of outcomes indicates the alignment of the behavior of subordinates (middle and lower managers) with strategies (Aligned Behavior) (Van Riel et al. 2009), which is important for establishing a shared understanding of and commitment to strategies (Wooldridge et al. 2008). Implementation Success (Impl Success), as a second outcome dimension, is defined as the success of 'the communication, interpretation, adoption, and enactment of strategic plans' (Noble 1999, p. 120) and, thus, focuses on the implementation of intended into realized strategies (Canales and Wooldridge 2009). Strategic Planning Effectiveness (SP Effectiveness) indicates whether a firm enhances both its key capabilities and major objectives intended by the strategic planning process (Venkatraman and Ramanujam 1987). Hence, SP Effectiveness should implicitly be a consequence of both Aligned Behavior, to foster managerial motivation and commitment, and Impl Success to stress communication and coordination abilities to ultimately achieve strategic goals. However, note that Aligned Behavior, Impl Success and SP Effectiveness focus on different aspects of the outcomes of the strategic planning process, which makes it interesting to examine the relationships among them. Finally, OP captures the financial success of an organization (Ramanujam et al. 1986). Based on the fact that these outcome dimensions are interrelated, we assume that all of them are moderated by the extent of participation in the strategic planning process.

Nevertheless, although participation in the strategic planning process tends to institutionalize Strategically Aligned Behavior, and thus is crucial for achieving strategic consensus among managers (Burgelman 1983b; Floyd and Wooldridge 1992), how participation affects the relationships among different organizational outcomes remains unclear. Therefore, attempts to develop a picture of the relationship between strategic planning and Organizational Performance have produced rather fragmented results (e. g., Boyd 1991; Miller and Cardinal 1994; Kuerschner and Guenther 2012). Thus, it is crucial to provide a more complete picture of the relationships between strategic planning and outcomes (Wooldridge et al. 2008; Wolf and Floyd 2013). In addition, knowledge on participation in the strategic planning process remains limited (Mantere and Vaara 2008).

Next, we review the current literature on the relationship of participation with the four outcome measures.

Regarding Aligned Behavior, Burgelman (1991) reports that the diagnostic and interactive use of strategic planning promotes induced (i.e., top-down by top managers) and autonomous (i.e., bottom-up by subordinate management levels) aligned strategic behavior in an organization. In a recent contribution, Ren and Guo (2011) argue that even if Aligned Behavior is induced top-down by top managers, middle managers may also generate new strategic impetuses that encourage multi-level strategic (re-)thinking processes. The authors conclude that one of the major challenges facing the firm is to determine the proper balance between these two management levels to enhance managerial practices and effectiveness. This is in line with Westley (1990), who holds that balanced participation by top and middle managers in the strategic planning process is desirable.

With respect to Impl Success, Raes et al. (2011) develop a processual interaction model for top (TMT) and middle managers (MM) to enhance strategy formulation and implementation processes that ultimately affect OP. The authors report that top and

middle managers influence one another with respect to quality of decision making and, thus, Impl Success (e.g., Floyd and Wooldridge 1992; Noble 1999). Hence, Raes et al. (2011) emphasize that Impl Success will become stable once the role behaviors and mutual expectations of the TMTs and MMs become aligned with high levels of participative leadership for TMTs and active engagement for MMs (p. 117). Westley (1990) reports that middle management participation in the strategic planning process is positively related to the existence of an interaction process between middle management and top managers.

In one of the first empirical studies on the relationship between participation and SP Effectiveness, Dyson and Foster (1982) provide evidence that a high level of participation increases complexity and the difficulty of remaining effective. Conversely, Gerbing et al. (1994) find that SP Effectiveness is strongly and positively influenced when different management levels participate in the strategic planning process. Furthermore, the authors show that SP Effectiveness is positively and significantly related to OP. However, again, effective participation appears to depend on the balance between the internal and external contingencies shaping it (e.g., Floyd and Wooldridge 1997; Raes et al. 2011; Wolf and Floyd 2013).

The literature provides inconsistent findings regarding the direct effects of middle management's participation in the strategic planning process on the more distant OP. While Andersen (2004) reports no positive association between the extent of participation in strategic decision making and OP, by contrast, Wooldridge and Floyd (1990) provide empirical support for a significantly positive relationship between participation in strategy formulation and OP. Floyd and Wooldridge (1997) confirm the latter by showing that a higher level of strategic influence on the part of middle managers fosters OP. In their meta-analysis, Kuerschner and Guenther (2012) report mixed results for the overall effect of decentralization and for the involvement of middle managers on OP and call for additional research, particularly concerning the effect of participation by middle managers. Interestingly, thus far research on the effect of participation by top management in the strategic planning process on OP appears relatively limited, perhaps due to implicit assumptions that it has inherent (positive) relationships with considered outcomes.

To summarize, the literature on participation in the strategic planning process focuses on two major actors, top and middle managers. However, the literature is primarily focused on direct effects and primarily examining the relationship between middle management participation in the strategic planning process and organizational outcomes.

Thus, from a top management perspective, participation in the strategic planning process is influenced by upper echelons theory (Hambrick and Mason 1984; Hambrick 2007), suggesting the conclusion that top managers are the primarily actors in strategy formulation because they provide a vision for the firm (e.g., Floyd and Lane 2000; Grant 2003). However, this understanding does not contradict the notion that subordinate management participation in the strategic planning process contributes to the development of the firm's vision and overall strategy (Mantere et al. 2012). This is particularly desirable if 'top managers are unsure about direction, middle managers are uncertain about what to implement, and operating-level managers no longer know what standards define conformance' (Floyd and Lane 2000, p. 200).

Moreover, from a middle management perspective, participation in the strategic planning process tends to be crucial to motivate and engage middle managers in strategic thinking (e.g., Westley 1990; Ketokivi and Castañer 2004), and to enhance communication and coordination among managers (e.g., Vilà and Canales 2008; Jarzabkowski and Balogun 2009; Spee and Jarzabkowski 2011). This is in turn fundamental for managerial effectiveness (e.g., Grant 2003) and, ultimately, 'may' positively influence OP (e.g., Wooldridge and Floyd 1990; Floyd and Wooldridge 1997).

Overall, on the one hand, the direct effects of management participation in the strategic planning process on organizational outcomes remain controversial. On the other hand, the relationship between various dimensions of outcomes has been scarcely examined in the literature. Furthermore, the moderating effects of management participation on relationships between outcomes represent a major gap in the literature. Thus, the basic understanding so far is that participation is an antecedent of outcome dimensions. However, as more recent studies (e.g., Grant 2003; Vilà and Canales 2008; Penrose 2009; Jarzabkowski and Balogun 2009; Spee and Jarzabkowski 2011) hold that both top and middle managers play a significant role in the strategic planning process, a model that includes a moderation effect of management participation as a conditional factor appears in order and has yet to be considered. With our study, we therefore extend the literature by analyzing the moderating role of management participation on relationships between various outcomes of strategic planning, which acts as our baseline model.

2.3 Theoretical research model

Following Grant (2003), we expect that, especially in large firms, the strategic planning process is integrative. Thus, we conclude that strategic planning is simultaneously both a top-down and bottom-up process (Bower 1970). Strategic planning, therefore, becomes a multi-level management tool that fosters participation and, thus, appears essential for developing strategic consensus in an organization (e.g., Floyd and Wooldridge 1992; Rapert et al. 2002; González-Benito et al. 2012). Thus, and as indicated by previous research (e.g., Vilà and Canales 2008; Jarzabkowski and Balogun 2009; Spee and Jarzabkowski 2011), one of the major challenges tends to be achieving an equitable balance among the various concerns of participants in the strategic planning process.

Consequently, each management level makes a contribution to organizational success. Penrose (2009) terms this phenomenon the 'metamorphosis' or the 'new theory' of the firm because it captures that the use of strategic planning 'may not be based so much on the exercise of controls as on consensus emerging from shared goals and mutual dependence among the participants' (p. 242). To explore the various outcomes of strategic planning, we differentiate among three more proximate (Aligned Behavior, Impl Success, and SP Effectiveness) and OP, as a more distant and financial outcome dimension. Our baseline model examines the relationships among all four outcome dimensions to ultimately explore the moderating effect of the dominant participation by top or middle management on the relationships among the outcome dimensions in the baseline model. Figure 1 illustrates our theoretical research model.

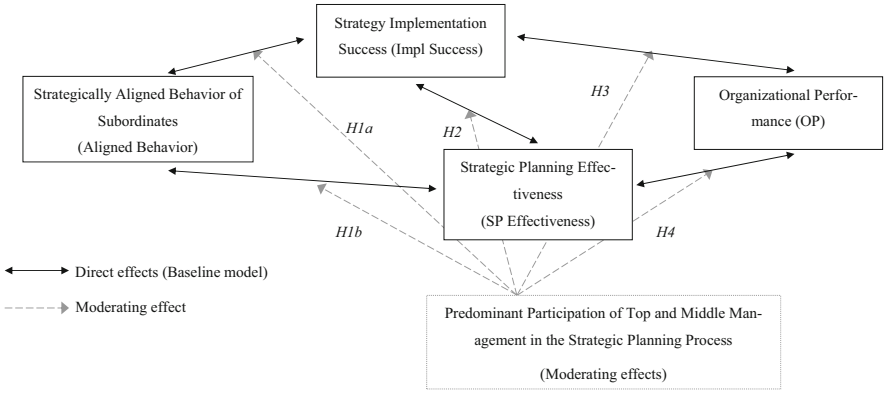

Fig. 1 Theoretical research model

In detail, following Burgelman (1983a), Aligned Behavior is potentially influenced in both ways, top-down and bottom-up. Thus, Aligned Behavior tends to result from both induced and autonomous strategic behavior because it involves both types of behavior (Burgelman 1983a, 1991; Van Riel et al. 2009). This is clearly important for goal achievement, i.e., Impl Success (e.g., Simons 1995), and SP Effectiveness (e.g., Jarzabkowski and Balogun 2009), whereby the former may influence the latter. Finally, both are strong antecedents of OP (Ramanujam et al. 1986). Hence, we generally assume that the relationships among various strategic planning outcomes are significantly positive (baseline model).[2] In our baseline model, we do not explore the direct relationship between Aligned Behavior and OP because Aligned Behavior is primarily an antecedent of Impl Success and SP Effectiveness. Thus, Aligned Behavior tends, most notably, to be a major driver of the interrelated processes of strategy formulation and implementation (Chimhanzi and Morgan 2005).

Based on this model, the aim of our paper is to explore the question of the extent to which top and middle management's predominant participation in the strategic planning process moderates the outcome relationships as illustrated in the baseline model. Overall, we conclude that Aligned Behavior, Impl Success, SP Effectiveness, and OP are essential outcome parameters that need to be considered in conjunction due to the multifaceted nature of strategic planning (Ramanujam et al. 1986).

3 Development of hypotheses

3.1 Relationships between proximate outcomes of the strategic planning process

Paradoxically, strategic or long-range planning should reduce uncertainty while remaining flexible (Thompson 1967). Furthermore, the strategic planning process

[2] The baseline model displays the interplay of proximate strategic planning outcomes and Organizational Performance (see Fig. 1) but does not consider the moderating effects of top and middle managers' predominant participation in the strategic planning process.

encourages alignment with strategy integration through coordination and communication throughout the company (Lorange and Probst 1990). Moreover, as a management control system, strategic planning can therefore be used in two different but complementary ways to promote consistent strategic behavior, first, as an output-oriented control system, i.e., diagnostically, to monitor and evaluate performance and, second, as a behavior-oriented or supervisory system, i.e., interactively, to align inputs with the firm's strategic direction irrespective of the management level considered (e.g., Thompson 1967; Ouchi 1979; Simons 1994, 1995; Grant 2003).

In addition to the induced behavior fostered by top managers, strategy follows the autonomous strategic behavior of middle and lower managers (e.g., Burgelman 1983a; Mirabeau and Maguire 2014). Therefore, as a combination of induced and autonomous behavior, Aligned Behavior is generally fostered by participation by both top and middle managers in the strategic planning process (e.g., Bourgeois and Brodwin 1984; Wooldridge and Floyd 1990; Hart 1992; Floyd and Lane 2000; Canales 2013). Further, Aligned Behavior tends to be an essential antecedent of both Impl Success and SP Effectiveness because behavioral commitment fosters a shared understanding of strategies. This supports the alignment of the organization with strategies and thus promotes the achievement of strategic goals (Vilà and Canales 2008). Hence, we assume that neither the predominant participation by top nor by middle managers in the strategic planning process moderates substantially the relationship between Aligned Behavior and Impl Success. Thus, we formally hypothesize:

H1a: *Aligned Behavior is positively related to Impl Success regardless of whether top or middle managers predominantly participate in the strategic planning process.*

Moreover, from a middle management perspective, Ketokivi and Castañer (2004) provide evidence that the participation by middle managers in the strategic planning process enhances both strategic thinking throughout the organization and goal prioritization. Thus, participation by middle management fosters the effectiveness of the strategic planning process as such.

Moreover, top managers primarily influence the strategic direction of the firm (e.g., Floyd and Lane 2000; Grant 2003). Additionally, upper echelons also become aware of and focus on subordinates' strategic behavior 'by becoming more involved in shaping the skills and relationships of key people in the middle levels and on the front lines of their organizations' (Bartlett and Ghoshal 1995, p. 137) to enhance internal communication and coordination across all management levels (e.g., Jarzabkowski and Balogun 2009). Thus, the strategic planning process appears to blur the classical 'segregation of duties' approach in strategic management, primarily inspired by role theory, by instead pooling forces to strategically align the organization both vertically and laterally (Canales and Wooldridge 2009). This is enabled by running the strategic planning process in a bi-directional manner, i.e., simultaneously from the top-down and bottom-up (e.g. Bower 1970; Burgelman 1983a; Grant 2003). Thus, we hypothesize:

H1b: *Aligned Behavior is positively related to SP Effectiveness regardless of whether top or middle managers predominantly participate in the strategic planning process.*

However, top managers seem to be instead focused on managing the strategic planning process (Bower 1970; Bower and Doz 1979) and, thus, represent a sort of 'linchpin' in strategic planning (Steiner 1979). Complimentarily, middle managers vitalize the strategic planning process by bridging upper and lower management levels and by supporting the implementation of intended strategies (Floyd and Wooldridge 2000; Floyd and Lane 2000). Watson and Wooldridge (2005) show that business unit managers, whose traditional role is associated with strategy implementation, also improve the formulation of corporate strategy. Thus, the realization of deliberate strategies as intended by top managers, i.e., the achievement of objectives and realization of strategies (i.e., Impl Success), is tightly coupled with SP Effectiveness across all management levels (e.g., Ramanujam et al. 1986; Ramanujam and Venkatraman 1987; Simons 1995). For this reason, we hypothesize:

H2: *Impl Success is positively related to SP Effectiveness regardless of whether top or middle managers predominantly participate in the strategic planning process.*

Having examined the interactions of proximate outcomes of the strategic planning process, we now explore how they are related to OP.

3.2 Relationships between proximate outcomes of the strategic planning process and Organizational Performance

In general, strategy can only be implemented successfully when the strategic plan focuses on company goals (Nutt 1987). Thus, Impl Success is a natural and crucial antecedent of OP (Noble 1999). Nevertheless, we have limited knowledge of how top (e.g., Johnson et al. 2003; Jarzabkowski 2008) and middle managers (e.g., Wooldridge et al. 2008; Wolf and Floyd 2013) shape the strategic planning process, i.e., influence the interdependent processes of formulating and implementing strategies. However, beyond considering the OP of the firm, strategic planning needs to be designed and used in a way that principally promotes Impl Success (Simons 1995); in particular, the extent of participation in the strategic planning process and the methods used to implement strategies affect Impl Success (Nutt 1987).

Beer and Eisenstat (2000) suggest six 'silent killers' of Impl Success that are primarily driven by an ineffective top management team, which constrains the quality of corporate direction, quality of learning, and the quality of strategy implementation, i.e., (1) a 'top-down or laissez-faire senior management style', (2) an 'unclear strategy and conflicting priorities', (3) 'an ineffective senior management team', (4) 'poor vertical communication', (5) 'poor coordination across functions, businesses or borders', and (6) 'inadequate down-the-line leadership skills and development' (p. 31). This demands a stronger role for middle managers in strategy implementation.

However, in a recent contribution, Jarzabkowski 2008 emphasizes that in an interactive managerial interplay between top and middle managers, the former tend to be privileged due to their position and greater influence in ongoing strategy implementation. She concludes that the successful implementation of corporate strategies depends on top management's participation in an integrative strategizing process to ensure that

strategic objectives are implemented over time. Thereby, the author provides empirical evidence that an integrative strategic planning process is especially successful when implementing weakly institutionalized strategies over time.

In support of this argument, Wooldridge and Floyd (1990) conclude that effective strategy implementation depends on the proper mix of top and middle managers. Thus, top managers should frame the strategic context and develop corresponding structures, while middle managers should adopt strategic thinking. In particular, the authors stress that middle managers' participation in the strategic planning process implies improving 'the quality of decisions [during strategy formation], not [primarily] to facilitate implementation' (p. 240). This is in contrast to the implementing role of middle managers suggested by role theory (e.g., Floyd and Lane 2000; Wooldridge et al. 2008). In addition, Mantere (2008) confirms that middle managers strive for effective strategy implementation when top managers include them in strategy formation or strategic planning processes, thus, developing their strategic thinking, which in turn promotes strategy execution. Similarly, Rapert et al. (2002) outline that top managers' vertical communication is indispensible in fostering a shared understanding of values, attitudes, and strategies.

Additionally, especially in light of strategic change, renewal and planned, radical organizational change, some studies report negative effects of middle management participation due to self-interest (Guth and MacMillan 1986) or middle management resistance caused by top management failures (e.g., Ford et al. 2008; Huy et al. 2014). Middle managers' self interest may prevent them from facilitating and supporting strategy implementation, redirect strategies or even reduce the quality of strategy implementation. Participation by middle management may also generate negative effects due to their beliefs and emotions concerning top management that are associated with top management's plan and strategies. This empirical evidence contradicts role theory, which attributes an enabling and implementing role to middle managers (Floyd and Lane 2000).

In summary, if middle managers' traditional role concerns strategy implementation (Wooldridge et al. 2008) a general premise needs to be fulfilled: Middle managers should be committed to the strategy established by top managers (Floyd and Lane 2000), who should act as 'premise-setters and judges' (Bourgeois and Brodwin 1984) while encouraging subordinates to develop and implement strategies that are aligned with the corporate vision and mission. We therefore conclude that strategy implementation is primarily a top-down process because, on the one hand, 'upper echelons' have the power, the symbolic and material resources to transform desired goals into actions to further enhance OP (e.g., Hambrick and Mason 1984; Hambrick 2007); on the other hand, top managers are dominant in their role as initiators who determine the extent of middle management's inclusion in the process (e.g., Westley 1990; Mantere 2008). Thus, we formally hypothesize:

H3: *Impl Success is more strongly positively related to OP when top managers (relative to middle managers) are the dominant participants in the strategic planning process.*

Next, we focus on the interaction of SP Effectiveness and OP. Empirical studies conducted to date provide inconsistent findings. Some report a positive relationship between middle management participation and Strategic Planning Effectiveness

(e.g., Ramanujam and Venkatraman 1987; Andersen 2004), while others observe no definite impact (e.g., Dyson and Foster 1982; Elbanna 2008). Gerbing et al. (1994), for instance, report that the inclusion of subordinate management levels in the strategic planning process positively affects both the attainment of strategic goals and the development of managerial skills. Freeman (1989) concludes that only high-quality management participation tends to foster the effectiveness of strategic planning. Contrarily, Elbanna (2008) observes no significant relationship between management participation and Strategic Planning Effectiveness. However, his empirical study is limited because he fails to differentiate between the two dimensions of participation in the strategic planning process, quantity and quality (Gerbing et al. 1994).

Nevertheless, increased levels of decentralization and discretion in large firms strengthen the integrating nature of the strategic planning process (Grant 2003). This tends to be favorable because it promotes commitment to strategic goals throughout the firm (e.g., Wooldridge and Floyd 1990; Floyd and Lane 2000). However, Wooldridge and Floyd (1990) note that a shared understanding and commitment are certainly fostered by participation in the strategic planning process but are not necessarily supportive of OP. Hence, the authors underline that it is necessary for middle managers to also participate in strategy formulation, and not only in strategy implementation, to improve OP. For this reason, having middle managers play a dominant role in strategy development supports their role in coordinating and communicating both intended and emergent strategies across all management levels and, thus, enhances managerial effectiveness and SP Effectiveness in particular (e.g., Venkatraman and Ramanujam 1987; Grant 2003). Thus, following the integrative character of strategic planning, which is primarily fostered by middle managers (e.g., Ketokivi and Castañer 2004; Jarzabkowski and Balogun 2009; Spee and Jarzabkowski 2011), we follow Floyd and Wooldridge (1997) and emphasize that a high level of middle management participation in the strategic planning process should have a positive moderating effect on the relationship between SP Effectiveness and OP. Thus, we hypothesize that:

H4: *SP Effectiveness is more strongly positively related to OP when middle managers (relative to top managers) dominate participation in the strategic planning process.*

4 Methods

4.1 Data and sampling

The sample is selected using the AMADEUS database.[3] As strategic planning plays a central role for large firms (Grant 2003), we focused on large firms. In total, the database contains information on 27,670 firms in Germany that AMADEUS classifies as

[3] AMADEUS is a database containing financial information on over 14 million public and private companies in 43 European countries as of October 2011, when we began the survey. It combines data from over 30 regional information providers using publicly mandated data disclosures.

'large' or 'very large'.[4] For these firms, archival data, i.e., financial and structural data, were available to enable analysis of non-response bias. We then restricted our sample further to all firms with at least or more than 500 full time employees (FTE)[5] over the past 3 years, thus leaving 3526 firms. Basing our analysis on industries with similar structures, we discarded all firms from the primary (agriculture and forestry, fisheries, mining), financial services (finance and insurance services), and public sectors (public administration, education, health and social services, arts and entertainment, and exterritorial organizations) according to the NACE revision 2 classifications. This resulted in 2951 potential firms for this study. To enhance the likelihood that the data represent a broad cross-section of firms, we then restricted the sampling frame to the 2000 firms with the highest sales volume. From this population, we then randomly chose 500 firms for final analysis.

We used a six-page structured web survey instrument developed by using questionnaire design checklists, which we pre-tested on 16 strategic or financial experts for clarity, understandability, ambiguity, and face validity (Dillman et al. 2014). Data were collected through a personalized web survey following respective guidelines (Dillman et al. 2014) by addressing members of the top management teams (CEOs, CFOs, Chief Strategy Officers (CSOs)) of the target firms. We asked for executive, financial, or strategy officers because all three should be involved in the strategic planning process and knowledgeable of the firm's management control system. Hence, we rely on top managers' knowledge because they are primarily responsible for the management of the strategic planning process (Steiner 1979).

To collect the contact data from our sample source, we contacted the firms by telephone and, whenever possible, pre-notified the respondents. To increase the response rate, each invitation was personally addressed via an e-mail that provided clear instructions on how to participate in the survey while ensuring the privacy and anonymity of participant data (Dillman et al. 2014). In addition, we sent two follow-up e-emails. Based on a continuous decline in the response rates of top managers (Van der Stede et al. 2005; Cycyota and Harrison 2006), we yield an above-average response rate of 32.8 %. On average, the respondents had worked for 4.9 years in their current positions and for 10.7 years with their current organizations. The distribution of respondents is as follows: CFOs and controllers (31.10 %), CEOs (27.44 %), and CSOs and strategists (26.22 %). In sum, having 164 responses appears adequate to perform advanced statistics. Consisting of top managers (a total of 95) and middle managers (69) that play dominant roles in the strategic planning process, the sample is adequate to assess between-group differences (e.g., Qureshi and Compeau 2009). Panel A of Table 1 reports the descriptive characteristics of our sample.

We performed a multilevel non-response analysis. Item non-response can be excluded in advance because survey participation could only be successfully completed if all questions were answered. In the next step, we compared non-respondents and respondents with respect to significant differences in total assets, net sales, num-

[4] AMADEUS classifies firms as 'large' that have revenues $\geq$ 10 million EUR, total assets $\geq$ 20 million EUR, and $\geq$ 150 employees and as 'very large' with revenues $\geq$ 100 million EUR, total assets $\geq$ 200 million EUR, employees $\geq$ 1000, and when listed.

[5] By definition, we follow Miller and Cardinal (1994).

Table 1 Descriptive statistics of sample structure

Panel A: Sample structure by size

Mean values	Top Management (n=95)			Middle Management (n=69)		
	firms < 10,000 employees (n=83)	firms > 10,000 employees (n=12)	Total (n=95)	firms < 10,000 employees (n=53)	firms > 10,000 employees (n=16)	Total (n=69)
Sales (turnover) (in millions USD)	724.69	37,423.96	5,360.39	1,001.31	28,590.25	7,398.75
Total assets (in millions USD)	743.42	53,189.00	7,368.12	987.94	37,237.98	9,393.75
Number of employees	1,980	90,508	13,162	2,312	93,793	23,525

Notes: n=164 (top and middle managers). This table reports the means of financial and structural firm data according to three characteristics (sales, total assets, and number of employees), firms with fewer and more than 10,000 employees and in total.

Panel B: Unit Non-response Bias for Firm Characteristics

Variable (firms </= 10,000 employees)	Respondents (n=136)	Non-respondents (n=308)	*t*-statistics (n=444)	*p*-value	Survey population (n=1,862)	*t*-statistics (n=1,862)	*p*-value
Total assets (in millions USD)	838.71	732.12	t=0.768	p=0.443	729.07	t= 0.945	p=0.346
Net sales (in millions USD)	787.72	927.02	t=-1.048	p=0.299	827.58	t=-0.415	p=0.680
Number of employees (in thousands)	2.11	2.01	t=0.527	p=0.599	1.93	t= 1.173	p=0.242
EBIT (in millions USD)	40.79	37.93	t=0.222	p=0.825	44.90	t=-0.230	p=0.820
Variable (firms > 10,000 employees)	Respondents (n=28)	Non-respondents (n=28)	*t*-statistics (n=56)	*p*-value	Survey population (n=138)	*t*-statistics (n=138)	*p*-value
Total assets (in millions USD)	44,074.13	26,969.47	t=1.106	p=0.274	20,149.94	t=2.155	p=0.045*
Net sales (in millions USD)	29,704.63	21,051.65	t=0.909	p=0.367	15,870.75	t=2.057	p=0.053
Number of employees (in thousands)	92.39	54.25	t=1.347	p=0.184	49,126.75	t=2.052	p=0.057
EBIT (in millions USD)	2,387.69	980.97	t=1.621	p=0.112	826.03	t=2.379	p=0.034*
Total	Respondents (n=164)	Non-respondents (n=336)	Sample (n=500)		Survey population (n=2,000)		

Notes: n=164 (top and middle managers). This table reports variable means, *t*-statistics and related *p*-values for the comparison of means of variables between respondents and addressed non-respondents, as well as the survey population.
*: Means are significantly different at *p*-value < 0.05 (two-tailed).

Table 1 continued

Panel C: Test of homogeneity

Construct	Top Management (n=95)				Middle Management (n=69)			
	Mean rank of construct values (<10,000 employees, n=83)	Mean rank of construct values (>10,000 employees, n=12)	Mann-Whitney-U-Test	*p*-value (exact significance*, two-tailed)	Mean rank of construct values (<10,000 employees, n=53)	Mean rank of construct values (>10,000 employees, n=16)	Mann-Whitney-U-Test	*p*-value (exact significance*, two-tailed)
Strategically Aligned Behavior	47.83	49.21	480.000	p=0.842	37.28	27.44	303.000	p=0.108
Strategy Implementation Success	47.78	49.50	458.250	p=0.675	34.50	36.66	387.625	p=0.602
Strategic Planning Effectiveness	47.89	48.74	462.625	p=0.728	33.90	38.65	354.375	p=0.438
Organizational Performance	47.78	49.53	471.125	p=0.780	34.62	36.25	404.000	p=0.785

Notes: n=164 (top and middle managers). This table reports Mann-Whitney U-Test values and related *p*-values (exact, two-tailed) on the difference in construct rank means for firms with fewer and more than 10,000 employees. No significant differences (p>0.05) were found between firms with fewer and more than 10,000 employees. The exact significance was used due to the moderate sample size.

Panel D: Early vs. late respondents analysis

Construct rank means	Top Management (n=95)				Middle Management (n=69)			
	Early respondents (before follow-up procedure) (n=55)	Late respondents (after follow-up procedure) (n=40)	Mann-Whitney-U-Test	*p*-value (exact significance*, two-tailed)	Early respondents (before follow-up procedure) (n=38)	Late respondents (after follow-up procedure) (n=31)	Mann-Whitney-U-Test	*p*-value (exact significance*, two-tailed)
Strategically Aligned Behavior	48.70	47.04	1,045.500	p=0.698	35.07	34.92	576.500	p=0.880
Strategy Implementation Success	49.45	46.01	1,020.250	p=0.556	35.62	34.24	564.125	p=0.776
Strategic Planning Effectiveness	51.88	42.67	886.875	p=0.112	37.27	32.21	502.625	p=0.309
Organizational Performance	51.38	43.35	913.875	p=0.216	39.44	29.56	420.375	p=0.045**

Notes: n=164 (top and middle managers). This table reports Mann-Whitney U-Tests on the difference in construct rank means for early and late respondents. Early respondents are respondents who returned the questionnaire before the remainder action; late respondents are respondents who returned the questionnaire after the remainder action. No significant differences (p>0.05) were found between early and late respondents with only one marginal exception (**).
* The exact significance was used due to the moderate sample size.

ber of employees, and EBIT (Table 1, Panel B). With the slight exception of firms with more than 10,000 employees, we found no statistically significant differences across all four financial firm characteristics. However, firms with more than 10,000 employees are over-represented. To be conservative and ensure that the final sample of 164 firms can be used as a single unit and need not be separated content-wise into different groups according to firm size, we conducted a Mann–Whitney *U* test showing that the investigated constructs do not significantly differ between firms with fewer or more than 10,000 employees (Table 1, Panel C). Thus, the final 164 questionnaires constitute a homogenous sample.

Finally, we compared the responses of early and late respondents on all survey constructs to further approximate unit non-response bias (Armstrong and Overton 1977). Using the Mann–Whitney *U* test, we did not find significant differences in construct rank means at the 5 % level between early and late respondents for both the top and middle management levels (Table 1, Panel D), with the only exception being that early respondents in the sub-sample of firms with predominant participation by middle management have higher OP scores than late respondents.

Overall, the results support the representative character of our sample and the absence of significant non-response bias. However, because the data come from a single respondent from each organization, there is a possibility of response or function bias. Given that our respondents were carefully targeted senior-level managers, we are confident that this is not a significant limitation (Ramanujam and Venkatraman 1987). To emphasize our confidence in our sample and the absence of significant single-source bias (Podsakoff and Organ 1986), we performed a Harman's single-factor test on the 16 survey items used to design the constructs, revealing for both top and middle managers four factors with eigenvalues >1.0; the first factor explained 41.85 and 37.64 % of the total variance for the two management types, respectively. Overall, the results support the absence of significant common method bias in the data.

4.2 Measurement of constructs

All measures are drawn from existing and validated instruments and slightly adapted for the setting of strategic planning using a seven-point fully anchored Likert-scale. The locus of planning scale adopted from Barringer and Bluedorn (1999), which is used to measure the *participation of top and middle managers* in the strategic planning process, as a grouping variable was slightly adjusted with respect to measurement. The respondents could distribute a total of 100 points depending on the extent of participation by four (non-) management levels (top, middle, and lower management and rank-and-file employees) in each phase of the strategic planning process. Thus, to categorize the extent to which top and middle managers play a predominant role in the strategic planning process, we sum each management level across all five predefined phases of the strategic planning process, i.e., (1) strategic goal formation, (2) strategic analysis and forecast, (3) the development, evaluation, and selection of competitive strategies, (4) implementing the competitive strategy, and (5) evaluation and control. Based on this scale, we compare the top and middle management levels' scores across all phases. The management level with the highest score is defined as

the predominant level. The results show that top managers play the predominant role in strategic planning in 95 firms and that middle managers do so in 69 firms.[6]

The exploratory factor analysis (EFA) (principal component extraction with varimax rotation) (see Table 3) reveals the uni-dimensionality of the predefined constructs (Hair et al. 2009). The constructs are reflective in nature, which ensures that excluding an item from the original instrument would not change its meaning (Nunnally 1978).

Reflecting different perspectives, we build on well-established measurement constructs for organizational outcomes of the strategic planning process. Aligned Behavior is theoretically grounded in the scale of Van Riel et al. (2009).[7] The factor analysis reveals that Aligned Behavior is uni-dimensional with an explained variance of 85.2 % for top and 87.0 % for middle managers that predominantly participate in the strategic planning process. The Cronbach's Alphas are 0.939 and 0.947 for top and middle managers, respectively.

Impl Success is developed using the concept developed by Chimhanzi and Morgan (2005).[8] Factor analysis reveals that Impl Success is uni-dimensional with explained variance of 73.1 % for top and 76.5 % for middle managers. The corresponding Cronbach's Alpha is 0.876 for top and 0.884 for middle managers.

SP Effectiveness is measured using a refined version of Elbanna (2008) model.[9] Factor analysis reveals that SP Effectiveness is uni-dimensional with explained variance of 76.0 % for top and 77.6 % for middle managers. The Cronbach's Alphas are 0.889 and 0.877 for top and middle managers, respectively.

The subjective approach of measuring OP has been widely adopted (Rudd et al. 2008). The measures for relative competitive performance are based on Khandwalla (1977), Dess and Robinson (1984), and Ramanujam and Venkatraman (1987). We ask the respondents to assess their performance relative to their industry average according to four performance criteria: profit growth (EBIT or EBITDA), profitability (return on investment, ROI), liquidity (Free Cash Flow), and overall firm performance. These items are typically of interest to shareholders and, in turn, generally capture strategic planning issues. The variance explained is 72.4 and 84.0 % while the corresponding Cronbach's Alpha is 0.854 and 0.932 for top and middle man-

[6] Unreported descriptive analyses show that the means of the extent of participation with respect to individual phases of the strategic planning process indicate that top managers primarily attend the phases of goal and strategy formulation (phases 1 and 3), while middle managers are mainly involved in the process of strategy implementation (phase 4). Phases 2 (environmental scanning) and 5 (evaluation and control) tend to be equally addressed by managers at the two levels. Thus, at the level of individual phases, the results are in line with traditional role settings posited by role theory. However, the standard deviation is significant, and we found 24 cases (14.6 %) and 64 cases (39.0 %) in which middle managers have the same or higher importance for strategic goal formation and for development of the competitive strategy, respectively. This indicates that this traditional role patterns only persist in the average across firms. As we are focused on the overall process of strategic planning, we include all phases for both the top and middle management together.

[7] The non-loading item 'subordinates actively discuss major goals amongst themselves' was omitted.

[8] The two non-loading items, i.e., 'overall, competitive strategies are implemented', and 'competitive strategies are implemented within the anticipated time frame', are removed from the final scale.

[9] The three non-loading items, i.e., 'improved the communication of strategic goals among managers', 'led to building commitment to action among managers', and 'led to a good fit between the external environment and the internal capabilities', are removed from the final scale.

agers, respectively. The OP measure covers three out of the four dimensions of OP as suggested by Hamann et al. (2013). The stock market performance dimension had to be excluded because not all firms in our sample are listed. Panel A of Table 2 reports descriptive statistics for the items and constructs of our study variables, and Panel B of Table 2 provides the Bravais–Pearson correlations between the construct variables.

4.3 Validation of constructs

We exclusively use measures from existing and validated instruments to meet reliability and validity criteria established in the literature (e.g., Nunnally 1978; Churchill 1979; Fornell and Larcker 1981). To ensure content validity, we spoke with experts in the respective domain (academics and practitioners) and pilot tested the questionnaire with 16 potential respondents and experts. This procedure led to slight adjustments in the wording and format of the questionnaire (see Appendix). In assessing nomological validity, i.e., whether the correlations among the constructs in a measurement concept are reasonable, the construct correlation-matrix can be useful (Hair et al. 2009). The results in Table 2 Panel B do not show evidence of misspecifications.

To ensure both construct reliability and construct validity, we performed a multi-level analysis using 1st and 2nd generation criteria (Fornell 1982) considering the inter-item-correlations (IIC), item-to-total correlations (ITC), Cronbach's Alpha, and exploratory factor analysis (EFA). Each of the 16 survey items complies with the common thresholds used in the literature. In addition, the Cronbach's Alphas (ranging from 0.854 to 0.947) exceed the correlation coefficients (ranging up to 0.534), i.e., the dimensions are distinct (Churchill 1979). Table 3 presents the results of the factor analysis yielding a four-factor solution with eigenvalues >1.0 and item loadings ≥ 0.689 of the final constructs in support of convergent and discriminant validity for both top and middle managers.

However, construct reliability is a necessary prerequisite but not sufficient for construct validity (Nunnally 1978). Thus, to overcome these shortcomings, the 2nd generation criteria are based on SEM using confirmatory factor analysis (CFA) to assess convergent and discriminant validity, and commonly used fit indexes for each construct are employed (Kline 2011). Thus, we tested for convergent validity on both levels, at the item level, i.e., the standardized loadings and the individual reliability, and at the construct level, i.e., the composite reliability and the average variance extracted (AVE). Common thresholds for these measures are generally met. The robustness test of discriminant validity as suggested by Fornell and Larcker (1981) shows that the AVE for each construct (ranging from 0.621 to 0.829) in all cases exceeds the squared correlations of the measures. Thus, we conclude that the measures satisfy both convergent validity, as AVE > 0.50 (Chin 1998), and robust discriminant validity across multiple tests. Finally, completing the CFA, we examined the model fit for each measurement construct. Each measurement construct is identified, i.e., having at least three indicators (Kline 2011), and exceeds the common threshold values. Table 4 displays the results of the 2nd generation criteria testing for both sub-groups.

Table 2 Descriptive statistics of survey variables

Panel A: Descriptives of items and constructs of study variables

	Top Management (n=95)					Middle Management (n=69)				
Item	Mean	Median	Std. dev.	Min	Max	Mean	Median	Std. dev.	Min	Max
Strategically Aligned Behavior	**4.06**	**4.00**	**1.50**	**1.0**	**7.0**	**4.35**	**4.25**	**1.34**	**1.0**	**7.0**
HelpEmployees	4.00	4.00	1.53	1.0	7.0	4.33	4.00	1.27	1.0	7.0
HelpColleagues	4.04	4.00	1.44	1.0	7.0	4.32	4.00	1.29	1.0	7.0
PursueStratGoals	4.23	4.00	1.51	1.0	7.0	4.52	5.00	1.31	1.0	7.0
ExplainEmployees	3.95	4.00	1.50	1.0	7.0	4.22	4.00	1.47	1.0	7.0
Strategy Implementation Success	**4.77**	**5.00**	**1.17**	**2.0**	**7.0**	**4.89**	**5.00**	**0.97**	**2.0**	**7.0**
StratGoalsImplementation	4.79	5.00	1.14	2.0	7.0	4.91	5.00	1.04	2.0	7.0
MethodSatisfaction	4.76	5.00	1.14	2.0	7.0	4.72	5.00	0.94	2.0	7.0
ResultsSatisfaction	4.77	5.00	1.14	1.0	7.0	4.91	5.00	0.95	2.0	7.0
ImplementAsExpected	4.78	5.00	1.26	1.0	7.0	5.01	5.00	0.95	2.0	6.0
Strategic Planning Effectiveness	**5.03**	**5.25**	**1.34**	**1.0**	**7.0**	**5.12**	**5.00**	**1.34**	**1.0**	**7.0**
GoalEffective	5.24	6.00	1.30	1.0	7.0	5.13	5.00	1.33	1.0	7.0
SustainCompPos	5.11	5.00	1.39	1.0	7.0	5.07	5.00	1.46	1.0	7.0
ReflectImpact	5.07	5.00	1.28	1.0	7.0	5.16	5.00	1.28	2.0	7.0
CoordinateDecision	4.68	5.00	1.37	1.0	7.0	5.13	5.00	1.31	1.0	7.0
Organizational Performance	**4.82**	**5.00**	**1.21**	**2.0**	**7.0**	**4.77**	**5.00**	**1.23**	**2.0**	**7.0**
Earnings	4.61	5.00	1.24	2.0	7.0	4.59	5.00	1.20	2.0	7.0
Profitability	4.65	5.00	1.21	2.0	7.0	4.57	5.00	1.29	2.0	7.0
Liquidity	4.98	5.00	1.31	2.0	7.0	4.91	5.00	1.25	2.0	7.0
OverallPerformance	5.05	5.00	1.08	2.0	7.0	5.01	5.00	1.17	2.0	7.0

Notes: n=164 (top and middle managers). This table reports the descriptive statistics for the study variables split by the two sub-groups of predominant participation by top or middle management in the strategic planning process.

Table 2 continued

Panel B: Bravais-Pearson correlation matrix of construct variables

	Top Management (n=95)				Middle Management (n=69)			
Construct	1	2	3	4	1	2	3	4
Strategic Aligned Behavior	1.000				1.000			
Strategy Implementation Success	0.413**	1.000			0.362**	1.000		
Strategic Planning Effectiveness	0.534**	0.439**	1.000		0.381**	0.274	1.000	
Organizational Performance	0.076	0.290*	0.172	1.000	0.194	0.168	0.304*	1.000

Notes: n=164 (top and middle managers). This table reports the correlation coefficients (r) between latent constructs.
*, **: The correlation is significant at p-value < 0.05, 0.01, respectively (two-tailed).

Table 3 Exploratory factor analysis

Item	Top management (n = 95)				Middle management (n = 69)			
	Strategically Aligned Behavior of subordinates (aligned behavior) (0.852)	Strategy Implementation Success (impl success) (0.731)	Strategic Planning Effectiveness (SP Effectiveness) (0.760)	Organizational Performance (OP) (0.724)	Strategically aligned behavior of subordinates (aligned behavior) (0.870)	Strategy Implementation Success (Impl Success) (0.765)	Strategic planning effectiveness (SP Effectiveness) (0.776)	Organizational Performance (OP) (0.840)
HelpEmployees	0.837				0.891			
HelpColleagues	0.859				0.897			
PursueStratGoals	0.843				0.908			
ExplainEmployees	0.836				0.837			
StratGoalsImplement		0.804				0.787		
MethodSatisfaction		0.717				0.733		
ResultsSatisfaction		0.815				0.905		
ImplementAsExpected		0.750				0.865		
GoalEffective			0.771				0.851	
SustainCompPos			0.749				0.794	
ReflectImpact			0.748				0.689	
CoordinateDecision			0.765				0.850	
EarningsGrowth				0.824				0.877
Profitability				0.823				0.879
Liquidity				0.773				0.907
OverallPerformance				0.857				0.903

n = 164 (top and middle managers). This table reports the factor loadings of exploratory factor analysis. We use principal component extraction with varimax rotation to estimate the factor analyses and extract all factors with eigenvalues >1. The variance extracted for each factor is reported in parentheses in the top row. The results of the exploratory factor analysis confirm the latent constructs as uni-dimensional. Significant loadings ≤0.500 are omitted

Table 4 Validity of measurement constructs

Construct	Item	Top management (n = 95)				Middle management (n = 69)			
		Item level		Construct level		Item level		Construct level	
		Standardized loading (CFA)	Individual item reliability	Composite reliability	Average variance extracted (AVE)	Standardized loading (CFA)	Individual item reliability	Composite reliability	Average variance extracted (AVE)
Strategically Aligned Behavior	HelpEmployees	0.943***	0.889	0.941	0.801	0.964***	0.929	0.951	0.829
(Aligned behavior)	HelpColleagues	0.922***	0.850			0.931***	0.867		
	PursueStratGoals	0.921***	0.848			0.927***	0.859		
	ExplainEmployees	0.784***	0.615			0.814***	0.663		
Strategy Implementation Success	StratGoalsImplement	0.832***	0.692	0.881	0.650	0.786***	0.618	0.881	0.653
(Impl Success)	MethodSatisfaction	0.780***	0.608			0.680***	0.462		
	ResultsSatisfaction	0.848***	0.719			0.836***	0.699		
	ImplementAsExpected	0.763***	0.582			0.912***	0.832		
Strategic Planning Effectiveness	GoalEffective	0.962***	0.925	0.878	0.648	0.932***	0.869	0.864	0.621
(SP Effectiveness)	SustainCompPos	0.836***	0.699			0.867***	0.752		
	ReflectImpact	0.678***	0.460			0.567***	0.321		
	CoordinateDecision	0.713***	0.508			0.735***	0.540		

Table 4 continued

Construct	Item	Top management (n = 95)				Middle management (n = 69)			
		Item level		Construct level		Item level		Construct level	
		Standardized loading (CFA)	Individual item reliability	Composite reliability	Average variance extracted (AVE)	Standardized loading (CFA)	Individual item reliability	Composite reliability	Average variance extracted (AVE)
Organizational Performance	EarningsGrowth	0.819***	0.671	0.873	0.632	0.876***	0.767	0.937	0.789
(OP)	Profitability	0.797***	0.635			0.861***	0.741		
	Liquidity	0.755***	0.570			0.914***	0.835		
	OverallPerformance	0.808***	0.653			0.900***	0.810		

n = 164 (top and middle managers). This table reports the results of convergent validity on both the item and construct levels. The common threshold values in the literature are as follows: Standardized loadings ≥ 0.60 and significantly different from zero; individual item reliability ≥ 0.40 (Bagozzi and Baumgartner 1994); composite reliability ≥ 0.6 (Bagozzi and Yi 1988); and average variance extracted (AVE) ≥ 0.5 (Fornell and Larcker 1981). Common thresholds for these measures are generally met, and only one item of the strategic planning effectiveness construct (ReflectImpact) has slight departures from the threshold

*, **, *** Significant at p-value < 0.05, 0.01, and 0.001, respectively (two-tailed)

Table 5 Model fit of measurement constructs

Construct	RMSEA	SRMR	χ^2/d.f.	*p*-value	CFI
Strategically Aligned Behavior of subordinates (aligned behavior)	0.026	0.0154	1.108	$p = 0.350$	0.999
Strategy Implementation Success (Impl Success)	0.053	0.0196	1.462	$p = 0.211$	0.995
Strategic Planning Effectiveness (SP Effectiveness)	0.000	0.0110	0.743	$p = 0.476$	1.000
Organizational Performance (OP)	0.039	0.0055	1.242	$p = 0.289$	0.999

n = 164 (top and middle managers). This table reports the most commonly used fit indexes. The common threshold values in the literature are as follows: RMSEA $\leq$ 0.05 (close fit) and $\leq$ 0.08 (fair fit) (Browne and Cudeck 1993), SRMR $\leq$ 0.08 (Hu and Bentler 1999), the normed chi-square (NC = χ^2/d.f.) $\leq$ 2.00 (Byrne 1989) while p-value > 0.05, and the incremental fit index CFI $\geq$ 0.95 (Hu and Bentler 1999). The descriptive chi-square statistics are only used for the sake of completeness and its notoriety. However, 'it should have no role in model fit assessment' because 'there is little statistical or logical foundation for NC (normed chi-square test)' (Kline 2011, p. 204)

The model fit results provide additional evidence for construct validity and good measurement practice (Hair et al. 2009). Table 5 reports the commonly used fit indexes for each construct.

Overall, the analyses for 1st and 2nd generation criteria confirm the unidimensionality, reliability, and validity of constructs.

4.4 Structural equation modeling

The theoretical model discussed in our study contains several interdependent relationships among latent constructs. Using SEM, which allows for the simultaneous study of several causal relationships between endogenous and exogenous constructs (Mueller 1996), we follow the classical strictly confirmatory approach proposed by Jöreskog (1993).

However, to ensure that the theoretical model is statistically comparable for both top and middle managers, we test in advance for invariance in both the measurement and structural model (Byrne 2004). Unreported results confirm full invariance of both items and the structural model (Cheung and Rensvold 2002).

Data collected from the survey were analyzed using the AMOS 23 software program with maximum likelihood (ML) estimation. ML assumes multivariate normality of data. Thus, we perform Mardia's test for multivariate kurtosis and skewness, which indicates that the data are within tolerable levels of univariate normality, i.e., skewness $\leq |-1.09|$ and $\leq |-1.10|$ (threshold <3.0) and kurtosis $\leq |1.34|$ and $\leq |1.51|$ (threshold <10.0) (Kline 2011) for top and middle managers, respectively. Additionally, we perform analyses of multicollinearity by calculating the variance inflation factor (VIF) and condition number (CN) to detect highly correlated or redundant items that need to be excluded from further analyses. The results reveal no evidence of multicollinearity (highest VIF = 5.437 $\leq$ threshold VIF of 10.0; highest CN = 26.968 $\leq$ threshold CN of 30.0 (Kline 2011)).

5 Results

Next, we challenge the theoretically proposed SEM illustrating the relationships among organizational outcomes (baseline model in Fig. 1). Further, we screen the baseline model for the moderating effects of predominant participation by top and middle management in the strategic planning process by testing for significant differences between path coefficient estimates. Finally, we check for statistical robustness and then discuss the findings in greater detail with respect to our formulated hypotheses (*H1a/b, H2, H3, and H4*).

5.1 Model testing

First, we estimate a SEM for the theoretical baseline model to detect significant path relationships among strategic planning outcome variables, as mentioned above. The baseline model, as shown in Table 6, reflecting the total sample (n = 164), indicates a good model fit (CFI = 0.974; TLI = 0.968; RMSEA = 0.056; PCLOSE = 0.271; CMINDF = 1.520 with $\chi^2 = 147.454$, and $df = 97$ while $p = 0.001$). Furthermore, each predicted relationship of strategic planning outcomes (see Fig. 1) reveals strong significance ($p < 0.01$, one-tailed) with the exceptions of the impact of both Impl Success ($p < 0.10$, one tailed) and SP Effectiveness (non-significant) on OP. This result is contrary to findings in the literature (e.g., Ramanujam et al. 1986) and provides a further major reason for plunging a more detailed investigation using sub-group analysis to compare the moderating effects of predominant participation by top and middle managers in the strategic planning process on interactions between outcome variables.

Table 6 also presents the results of the SEM sub-group testing of both top and middle managers' extent of participation in the strategic planning process, revealing a good model fit (CFI = 0.959, TLI = 0.949, RMSEA = 0.051 with a PCLOSE = 0.439). Although the p-value for the closeness of fit (PCLOSE) is less than the recommended value (>0.5; Jöreskog and Sörbom 1996), the RMSEA's 90 % confidence interval [0.036–0.064] still provides supporting evidence for a good overall model fit. In addition, to address the robustness of the results, we use 5000 bootstrap samples for cross-validation due to the smaller sample size. The bootstrapping procedure does not reveal significant qualitative changes and confirms the robustness of our results.

The SEM results show, as expected, significant relationships between Aligned Behavior and both antecedents of OP, Impl Success (path coeff. = 0.583 for top managers and 0.490 for middle managers, both $p < 0.01$) and SP Effectiveness (path coeff. = 0.494, $p < 0.01$/path coeff. = 0.324, $p < 0.01$). Furthermore, Impl Success and SP Effectiveness are significantly positively associated (path coeff. = 0.360, $p < 0.01$/path coeff. = 0.286, $p < 0.05$) for top and middle managers, respectively. However, Impl Success is only associated with OP when top managers are the predominant participants in the strategic planning process (path coeff. = 0.492, $p < 0.01$) whereas SP Effectiveness is substantially correlated with OP when middle managers are the predominant participants (path coeff. = 0.319, $p < 0.05$).

Table 6 Results of structural equation modeling

Dependent variable	Independent variable (expected sign)		Baseline model (n=164) Stand. estimates	Sub Group Model Originally predicted values Top Management (n=95) Stand. estimates	Sub Group Model Originally predicted values Middle Management (n=69) Stand. estimates	Sub Group Model Bootstrapping values (n=5,000) Top Management (n=95) Estimates	Top Management (n=95) Bias-corrected 95% confidence interval	Top Management (n=95) One-tailed significance	Middle Management (n=69) Estimates	Middle Management (n=69) Bias-corrected 95% confidence interval	Middle Management (n=69) One-tailed significance
Strategy Implementation Success (Impl Success)	Strategically Aligned Behavior (Aligned Behavior) (+)	H1a	**0.561*****	**0.583*****	**0.490*****	**0.491*****	[0.292-0.743]	0.000	**0.335*****	[0.158-0.531]	0.000
Strategic Planning Effectiveness (SP Effectiveness)	Strategically Aligned Behavior (Aligned Behavior) (+)	H1b	**0.398*****	**0.494*****	**0.324*****	**0.507*****	[0.220-0.850]	0.000	**0.327****	[0.048-0.613]	0.014
	Strategy Implementation Success (Impl Success) (+)	H2	**0.357*****	**0.360*****	**0.286****	**0.439*****	[0.138-0.735]	0.003	**0.422****	[-0.087-0.893]	0.047
Organizational Performance (OP)	Strategy Implementation Success (Impl Success) (+)	H3	**0.266***	**0.492*****	0.078	**0.493*****	[0.231-0.946]	0.001	0.100	[-0.326-0.509]	0.348
	Strategic Planning Effectiveness (SP Effectiveness) (+)	H4	0.132	-0.081	**0.319****	-0.067	[-0.431-0.184]	0.283	**0.276****	[-0.006-0.601]	0.030
	Model fit										
	Chi square (χ^2)		147.454	275.862							
	Df		97	194							
	p-value		0.001	0.000							
	CMINDF (χ^2/df)		1.520	1.422							
	RMSEA		0.056	0.051							
	RMSEA [90% confidence interval]		[0.037-0.074]	[0.036-0.064]							
	PCLOSE		0.271	0.439							
	TLI		0.968	0.949							
	CFI		0.974	0.959							

Table 7 Results of significance testing

Dependent variable	Independent variable (expected sign)	Hypotheses	z test statistics of difference tests for path coefficients for sub-groups of top vs. middle management
Strategy Implementation Success (Impl Success)	Strategically Aligned Behavior (Aligned Behavior) (+)	H1a	−1.196 (p = 0.116)
Strategic Planning Effectiveness (SP Effectiveness)	Strategically Aligned Behavior (Aligned Behavior) (+)	H1b	−1.018 (p = 0.154)
	Strategy Implementation Success (Impl Success) (+)	H2	−0.07 (p = 0.472)
Organizational Performance (OP)	Strategy Implementation Success (Impl Success) (+)	H3	−1.628* (p = 0.052)
	Strategic Planning Effectiveness (SP Effectiveness) (+)	H4	1.969** (p = 0.024)

n = 164 (top and middle managers). This table reports the results of pairwise difference testing of estimation paths in AMOS using a bootstrap resampling procedure (n = 5000) to enhance validity. Z test statistics are based on critical ratios of differences between path coefficients (one-tailed). A negative z test value signals that the path coefficients for the subgroup with predominant top management participation is higher than that for predominant middle management participation and vice versa
***, **, * Significant p-value < 0.01, 0.05, and 0.10

5.2 Testing for significant differences

We use a two-stage multigroup-analysis to test for differences between top and middle managers. First, we perform a pairwise z score difference test based on the critical ratios for the relationships as hypothesized (*H1a/b, H2, H3, and H4*) in the research model (Fig. 1). The results of pairwise difference testing of the estimated path coefficients are reported in Table 7.

Second, we use the Mann–Whitney *U* test to reveal substantial distinctions between the outcome variables influenced predominantly by top or middle managers.

For the SP Effectiveness—OP (z score = 1.969, p = 0.024 < 0.05) and for the Impl Success—OP (z score = −1.628, p = 0.052 < 0.1) relationships, we find significant differences between the effects of predominant participation by top and middle managers in the strategic planning process. Thus, for the relationships among the proximate outcome variables our findings provide strong support for the emphasis on strategic planning as an integrating instrument (e. g., Grant 2003). Our findings show no moderating effect on the relationship between these organizational outcomes (*H1a/b, H2*). However, in line with Andersen (2004), our findings support the notion that predominant participation by middle managers moderates the relationship between SP Effectiveness and OP. As can be seen from Table 6, the path coefficients of SP Effective-

ness and OP are non-significant when top management is predominantly involved but become significant when middle management is more strongly engaged in the strategy process. Thus, hypothesis H4 is confirmed. Furthermore, predominant participation by top managers in strategic planning primarily facilitates the relationship between Impl Success and OP, as hypothesized ($H3$), as we find a significant difference relative to predominant participation by middle managers. Thus, overall more balanced (in contrast to predominant) participation by both management levels seems to support positive relationships among the more proximate outcome of Aligned Behavior, SP Effectiveness and Impl Success. However, regarding the relationship with OP, the final outcome of strategic planning, having both management levels, depending on the focused relationships, play a more dominant role appears to be favorable.

In addition to testing the moderating effect on the association between the outcome constructs, and because previous studies primarily focus on direct strategic planning effects on outcomes, we further examine the influence of predominant participation by both top and middle managers on the level of each of the four outcome constructs by using the Mann–Whitney U test (exact significance, two-tailed). However, the results reveal no significant distinctions between the two management levels (Aligned Behavior: $p = 0.262$; Impl Success: $p = 0.514$; SP Effectiveness: $p = 0.503$; OP: $p = 0.800$), suggesting for OP the principle of equifinality (Katz and Kahn 1978; Drazin and Van de Ven 1985), i.e., that firms are equally effective irrespective of whether top or middle managers are the predominant participants in the strategic planning process. This result shows that the two management levels may complement one another, which confirms previous research (e.g., Hart 1992; Ketokivi and Castañer 2004; Vilà and Canales 2008; Wooldridge et al. 2008).

5.3 Validity tests for statistical robustness

In addition to the robustness checks for both the theoretical model tested using the bootstrap resampling procedure and significance testing, we perform six additional validity tests to ensure the robustness and cross-validation of our results (Browne and Cudeck 1993).

First, and as recommended in the literature (Dess and Robinson 1984; Van der Stede et al. 2005), we re-run the SEM using objective measures of OP in addition to the more subjective measures for perceived OP obtained from the survey respondents. Thus, we employ archival data by using return-on-assets (ROA)[10] as a second proxy for OP. The results in Table 8 for the sub-group model report unchanged statistical inferences and a good model fit (CFI = 0.953, TLI = 0.939, RMSEA = 0.062, CMINDF = 1.616 with $\chi^2 = 193.947$, and $df = 120$ while $p = 0.000$). The p-value for the path of SP Effectiveness to OP is now significantly negative (path coeff. = -0.276, $p < 0.1$, one-tailed; for perceived OP insignificant) for predominant participation by top managers and significantly positive (path coeff. = 0.189, $p<0.1$, one-tailed; for perceived OP $p < 0.05$) for predominant participation by middle managers in the strategic planning

[10] ROA is defined as pre-tax income divided by total assets and is used similarly in other studies (e.g., Dess and Robinson 1984; Widener 2007).

Table 8 Results of structural equation modeling with archival RoA as OP measure

Dependent variable	Independent variable (expected sign)		Baseline model (n=164) Stand. estimates	Sub Group Model Top Management (n=95) Stand. estimates	Sub Group Model Middle Management (n=69) Stand. estimates
Strategy Implementation Success (Impl Success)	Strategically Aligned Behavior (Aligned Behavior) (+)	H1a	**0.567*** **	**0.599*** **	**0.487*** **
Strategic Planning Effectiveness (SP Effectiveness)	Strategically Aligned Behavior (Aligned Behavior) (+)	H1b	**0.395*** **	**0.486*** **	**0.321** **
	Strategy Implementation Success (Impl Success) (+)	H2	**0.356*** **	**0.356** **	**0.289** **
Organizational Performance (OP)	Strategy Implementation Success (Impl Success) (+)	H3	**0.229** **	**0.421** **	-0.114
	Strategic Planning Effectiveness (SP Effectiveness) (+)	H4	-0.092	**-0.276***	**0.189***
	Model fit				
	Chi square (χ^2)		111.995	193.947	
	Df		60	120	
	p-value		0.000	0.000	
	CMINDF (χ^2/df)		1.867	1.616	
	RMSEA		0.073	0.062	
	RMSEA [90% confidence interval]		[0.052-0.094]	[0.045-0.077]	
	PCLOSE		0.040	0.115	
	TLI		0.956	0.939	
	CFI		0.966	0.953	

n = 164 (top and middle managers). This table reports the results of structural equation modeling. The models for both top and middle managers have an adequate model fit. The common threshold values in the literature are as follows: RMSEA $\leq$ 0.05 (close fit) and $\leq$ 0.08 (fair fit) (Browne and Cudeck 1993), TLI $\geq$ 0.90 (Bentler and Bonett 1980), and the normed chi-square (CMINDF = χ^2/d.f.) $\leq$ 2.00 (Byrne 1989), while p-value > 0.05, and the incremental fit index CFI $\geq$ 0.95 (Hu and Bentler 1999). The RMSEA's 90 % confidence interval provides supporting evidence for a good overall model fit. The fit indexes SRMR, GFI, and AGFI are not reported because they primarily tend to be affected by sample size (Tanaka 1993; Sharma et al. 2005). The 'performance of RNI and TLI [. . .] is the recommended index for evaluating model fit when the factor loadings are reasonably large (0.5 or above)' (Sharma et al. 2005, p. 942). Significant estimates are highlighted in bold

***, **, * Significant p-value <0.01, 0.05, and 0.10, respectively (one-tailed)

process. This confirms our different results for top versus middle managers. Thereby, and again in accordance with our previous results (Table 6), the path coefficient of Impl Success to OP measured by archival data is significantly positive for predominant participation by top (path coeff. = 0.421, p <0.05, one-tailed) and non-significant for predominant participation by middle managers in the strategic planning process (path coeff. = −0.114, p > 0.1, one-tailed). In addition, we also calculate the Bravais–Pearson correlation of our perceived OP measure with the RoA archival OP measure

(similar to Widener 2007) ($r = 0.185$, $p < 0.05$). Thus, using archival data instead of survey data for measuring OP shows that our results are robust.

Second, in unreported results, we also assess a model with direct instead of moderating relationships between the participation of top vs. middle management in strategic planning and the four outcome measures. Whereas the model fit is quite satisfactory (CFI = 0.973, TLI = 0.966, RMSEA = 0.054, PCLOSE = 0.331; CMINDF = 1.481 with $\chi^2 = 161.466$, and $df = 109$ while $p = 0.001$), all four path coefficients are not significant. Thus, a direct effects model does not appear to be adequate to explain the relationships of top vs. middle management with organizational outcomes.

Third, we examined whether further contingencies affecting the strategic planning process differ between the two sub-groups of top and middle managers. Hence, we examined a further eight constructs influencing the design (the intensity and formalization of the strategic planning process), context (the emergent-to-planned strategy formation process and the level of decentralization in making key decisions), and the integration and management control (beliefs and boundary system, diagnostic and interactive use of strategic planning) of the strategic planning process. All constructs were collected using our survey questionnaire.[11] As expected, but unreported, we found no significant differences between the two groups with respect to predominant participation by top and middle managers. This finding further indicates that both management levels tend to be equally essential to the organization in shaping and guiding strategies.[12]

Forth, we also tested in unreported results whether the relationships among the four outcome measures are moderated by the extent of diagnostic or interactive use of strategic planning. Both constructs address the levers of control framework of Simons (1995) and had also been collected via our survey instrument. The measurement of diagnostic use is adapted from Vandenbosch (1999) which was refined by Henri (2006). Diagnostic use measures the extent the formal strategic planning system is used diagnostically to monitor results on key measures and track progress towards goals. The operationalization of interactive use is adapted from Henri (2006), Bisbe et al. (2007), and Widener (2007). It measures the extent the formal strategic planning system is used in an interactive manner as a communication tool to facilitate communication within the firm. Using the moderation analysis following Hayes (2013) reveals no significant moderation effects for both constructs on relationships among outcome variables. Thus, our results are robust for differences in the extent of use of strategic planning.

[11] Only reliable and empirically validated measurement constructs from the existing literature are used: design constructs as 'the intensity of the strategic planning process' is a refined scale by Rudd et al. (2008), and 'formalization of the strategic planning process' is drawn from Segars et al. (1998); integration and management control constructs as 'beliefs and boundary systems' are based on Widener (2007), 'diagnostic use of strategic planning' is grounded in the scale of Vandenbosch (1999) refined by Henri (2006), and 'interactive use strategic planning' is operationalized on the basis of Henri (2006), Widener (2007), and Bisbe et al. (2007); contextual constructs as the 'emergent-to-planned strategy formation process' is taken from Slevin and Covin (1997), while the 'level of decentralization in making key decisions' is adapted from Abernethy et al. (2004).

[12] Due to the smaller sample size, we used a well established and, for small to large samples, recommended bootstrapping procedure (Buskirk et al. 2013) based on Efron and Tibshirani (1993), i.e., bias-corrected and accelerated (BCa) confidence intervals with 5000 re-samples (Hesterberg et al. 2003), to perform the Mann–Whitney U test for significant differences.

Fifth, we also run in unreported results[13] separate moderation analyses where we use the distance measure of participation as a continuous moderating variable in separate regressions for each outcome relationship in our baseline model using the procedure of Hayes (2013) instead of the sub-group analysis of the structural model. However, we could not find significant moderating effects of the distance measure on any outcome relation.

Finally, and because different types of respondents participated in the survey, i.e., CEOs, CFOs, and CSOs, we controlled for inter-rater reliability, which indicates different respondent's perceptions of subjectively scored measures (Kline 2011) and extends the above homogeneity analysis of survey respondents based on the Mann–Whitney *U* test. To evaluate inter-rater reliability, we calculated the intra-class correlation coefficients ICC (1,1) and ICC (2,1) (Shrout and Fleiss 1979) to capture one-way and two-way random effects, respectively. All measures report ICC values lying between [0.573–0.791] and [0.645–0.811] for ICC (1,1) and between [0.577–0.791] and [0.644–0.811] for ICC (2,1), which provides strong support for the reliability of the assessments of predominant participation by both sub-groups, top and middle managers, in the strategic planning process.

In conclusion, we find evidence that the design of our study has an acceptable level of validity. Thus, we are confident that our results are robust and that our findings are likely to be replicated in future studies.

6 Discussion of results

Concerning the measurement of strategic planning outcomes, our factor analysis shows that the four organizational outcomes load on different factors and thus are distinct constructs that measure different dimensions of the organizational outcomes of the strategic planning process. Furthermore, the results of the SEM from our baseline model show that the distinct outcome measures are positively associated with one another.

Applying sub-group modeling, our findings show that predominant participation by both top and middle managers in the strategic planning process fosters both the significantly positive relationships between Aligned Behavior and Impl Success and between Aligned Behavior and SP Effectiveness. This supports H1a and H1b, respectively. Thus, the two relationships are not moderated by predominant participation by top and middle management. It seems that a balance, but not a dominance of either management level, in the strategy process is necessary to enable the strategically aligned behavior of subordinates to result in better implementation of intended strategies and in improved performance of the strategic process itself. Hence, influencing the behavior of subordinates is an integral element of leading employees regardless of the management level (Frow et al. 2005). These findings strengthen the integrating character of the strategic planning process as previously expressed in the literature (e.g., Grant 2003; Ketokivi and Castañer 2004; Jarzabkowski and Balogun 2009; Spee and

[13] The results of the moderation tests of a continuous distance variable and of interactive and diagnostic use are available from the authors upon request.

Jarzabkowski 2011). This may extend role theory, as our results show that the function of aligning employees with firm strategy should be part of how both top and middle management understand their roles.

The traditional role model allocates responsibility for supporting implementation to middle management, whereas the design of an effective strategic planning process is more typically assigned to top management (e.g., Floyd and Lane 2000). This makes it interesting to explore the relationship between Impl Success (i.e., the implementation and realization of the plans underlying the strategy, e.g., Giraudeau 2008) on one side and SP Effectiveness (i.e., achieving the goals underlying the strategy and the outcomes of strategy implementation, e.g., Ramanujam et al. 1986; Simons 1995) on the other side. Our results provide support for H2, which confirms that we again need a balance between the two management levels to transfer implementation success in goal achievement through the strategy process. Thus, a rather classical, top-down approach to strategic planning (e.g., Chandler 1962; Ansoff 1965) carries the risk of uni-dimensional goal orientation focused on top managers' 'upper echelon' perspective, which could lead to a limited 'intraorganizational collaboration' (Floyd and Lane 2000, p. 173). This represents a challenge to conventional upper echelon theory. However, a rather bottom-up strategic planning process driven by middle managers bears the risk that the firm will lose its overall strategic direction while being focused on operational performance, which could in turn lead to chaos (e.g., Huy 2002). Thus, the ultimate ambition is to find the 'appropriate balance between the organization's need for control and flexibility' (Floyd and Wooldridge 1997, p. 465). Thereby, top managers' role has broadened from 'upper echelons' (Hambrick and Mason 1984) being responsible for the formation of deliberate plans to 'institutionalizing echelons' (Jarzabkowski 2008) to support and create 'an environment in which managers and employees monitor and correct themselves' (Bartlett and Ghoshal 1995, p. 139). These cross-sectional findings expand existing empirical evidence that is primarily based on case studies and broaden the traditional role understanding established by upper echelon or role theory.

Having participation by both top and middle management in the strategic planning process may create tensions (e.g., Simons 1995), but as our results show, the participation of both supports the relationship between Impl Success and SP Effectiveness. This finding may be connected with the paradox theory in organizational science showing that different, traditionally mutually exclusive characteristics may coexist beside one another, creating potential tensions, which also may be fruitful for the firm (e.g., Poole and Van de Ven 1989; Smith and Lewis 2011). Thus, existing role conflicts between top-down and bottom-up planning, between centralized and decentralized strategic making, and between top and middle management may initially appear to be a paradox, but as our results show, they may create fruitful tensions for the firm.

Furthermore, our results provide empirical evidence that, in contrast to middle managers, predominant participation by top managers in the strategic planning process indicates a stronger positive association between Impl Success and OP. The difference between the two sub-groups is statistically significant. Thus, H3 is formally confirmed. The higher path coefficients for top managers relative to middle managers for our cross-sectional analysis may also be explained by dysfunctional effects of middle management's involvement in strategic change projects reported by Guth and

MacMillan (1986) or by middle manager's resistance (e.g., Ford et al. 2008; Huy et al. 2014). Consequently, our findings challenge the classical role assigned to middle managers of being responsible for strategy implementation as indicated by role theory (Wooldridge et al. 2008; Floyd and Lane 2000). Firms with an emphasis on top management's participation in strategic planning may perform better in transferring implementation success into OP. Therefore, we also expand traditional role theory through this finding.

However, the traditional implementation role of middle management may cover activities by middle managers that lead to better strategic effectiveness by guiding, coordinating, communicating, and achieving strategic goals (Floyd and Wooldridge 2000). Thus, in their role as 'interaction echelons', they build an interface between upper and lower echelons (Schmid et al. 2010), which is a mutually influencing process (Raes et al. 2011). Hence, and in contrast to top managers, our findings provide evidence that SP Effectiveness is more strongly associated with OP if middle managers predominantly participate in the strategic planning process. The difference between the two sub-groups is statistically significant, confirming H4. Therefore, managerial practice should wisely include the 'crescive philosophy'[14] and strengthen the role of middle managers in strategic planning (Bourgeois and Brodwin 1984). In summary, our results show that stronger participation by middle management may strengthen the transmission of SP Effectiveness into OP. This may challenge both upper echelon and role theory, which primarily allocate the responsibility for strategy formulation and the strategy process to top management.

Overall, we conclude that both management levels, top and middle, are equally oriented in striving for Aligned Behavior to enhance both Impl Success and SP Effectiveness, which are in turn strong antecedents of OP, the latter if middle managers, the former if top managers predominantly participate in the strategic planning process. This underlines the complementary or mutually dependent relationship between top and middle managers, which essentially affects performance improvement. Hence, our results provide new insights into role and upper echelon theory and relate the resulting tensions between middle and top management to the general paradox theory.

Some limitations must be noted apart from our basic assumption that large firms have established a more or less formal strategic planning process (Grant 2003). First, even though our sample is biased towards large firms, Rigby and Bilodeau (2007) state that strategic planning is generally used throughout all industries and at all company sizes. Second, because our study follows a cross-sectional, survey-based approach, causality cannot be demonstrated by applying SEM. Thus, we can only speak of associations between constructs and not of a causal effect of one construct on another.[15] Nevertheless, theoretical support is available for the directionality presented in the research model. Third, despite the effort to ensure the generalizability of our study, the present theoretical and practical insights are focused on the specific national and

[14] In the crescive mode of strategic planning, 'strategy emerges from the bottom up, with little guidance (analytical or symbolic) from top management', and thus, 'organizational members play the critical role in the development of strategy' (Hart 1992, p. 332).

[15] Therefore, we use double-headed arrows in Fig. 1 to express that we explore associations and not causal effects.

industrial context of our setting. Fourth, as respondents are mostly from top management or are chief strategy officers, the extent of participation by top management in strategic planning might be overrated. However, we like to note that the full range of the scale of our items had been used by respondents. Dyadic studies might help to explore this issue in future research. Another issue with our survey instrument is common method bias (Podsakoff et al. 2003). Using Harman's single-factor test revealed that common method is not an issue with our survey data. Furthermore, as noted in our robustness section, we also use archival data to measure OP. Our results remain robust to this change, which is an indicator that common method bias is not an issue in our results. Finally, small sample sizes may limit the generalizability of study results. In our paper, analyses of non-response bias, good model fit and high significance levels show that our sample size of 164 firms may not be a major problem for our study's results.

7 Conclusion

The relationship between participation in the strategic planning process and its outcomes remains ambiguous (Mantere and Vaara 2008). Based on the contemporary and integral understanding of strategic planning (e.g., Grant 2003), our paper provides empirical evidence from a moderation perspective that both management levels, top and middle, are similarly supportive of strategic planning–outcome relationships when participating in this process.

We contribute to the literature in three ways. First, using factor analysis, we show that the organizational outcomes of the strategic planning process can be measured using different and distinct outcomes measuring different dimensions. Thus, future research may be inspired to separate different organizational outcome measures from one another. Second, using SEM, we show that these four outcome measures are positively associated. Specifically, Aligned Behavior is positively associated with Impl Success and SP Effectiveness, whereas Impl Success itself is positively related with SP Effectiveness. Furthermore, we find that both Impl Success and SP Effectiveness foster OP. Thus, we can expand the literature on the outcomes of strategic management by showing that these distinct measures support one another and have all to be considered regarding their ultimate influence on OP. Third, we expand the literature, especially that on role and upper echelon theory, by showing that the relationships among the proximate outcomes of Aligned Behavior, Impl Success and SP Effectiveness are not moderated by predominant participation by top vs. middle management in the strategic planning process. Our results indicate that the role understanding at both management levels has to be broadened, which challenges traditional role and upper echelon theory, and by demonstrating the tensions generated by both top-down and bottom-up strategy making, we contribute to paradox theory as an umbrella thesis. Having top-down and bottom-up strategic planning in place simultaneously may appear paradoxical, similar to the other paradoxes we find for other dimensions of organizing. Furthermore, we find that SP Effectiveness is associated with OP when middle managers predominantly participate in the strategic planning process, which allocates a different role to middle managers that might have traditionally been taken over by upper echelons. In contrast,

Impl Success has a stronger effect on OP when top managers take a predominant role in the strategic planning process.

Thomas et al. (2011) summarize that middle managers play an equally important role in strategic processes as top managers do 'by holding their senior managers to account by demanding success criteria, time lines, and action plans' and 'by acknowledging – and helping to bring into being—senior managers' responsibilities' (p. 35). Thus, the strategic planning process offers an escape from this 'paradox of embedded agency' (Floyd et al. 2011) by reconciling constraining and enabling patterns of interactions.

However, middle managers require the support of the upper level to implement and institutionalize strategies effectively when responsible for coordinating and communicating both strategic intentions (top-down) and opportunities (bottom-up). This finding highlights the essential roles of both top managers as 'enablers' (Mantere 2008) in managing, developing, and strategically shaping subordinates (e.g., Bower and Doz 1979; Bartlett and Ghoshal 1995) and middle managers as 'strategic thinkers' in leading strategies to actions and vice versa (e.g., Westley 1990; Ketokivi and Castañer 2004). For this reason, top and middle managers are complementary forces. As a consequence, we conclude that the strategic planning process is central to the strategic performance of organizations because it provides an integral basis for multilevel interactions between hierarchies, which in turn are fostered through the extent of participation.

To summarize, we suggest that future research should extend the examination of the complementarities between top and middle managers influencing or resulting from their participation in the strategic planning process to refine the managerial interplay of actors within organizations (Canales and Wooldridge 2009), e.g., by revealing feasible constellations of fit (Milgrom and Roberts 1995).

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Appendix: Survey questions

Extent of participation in the strategic planning process (Moderator variable)

Q1. How intensively are the following management levels involved in strategic planning in your company? Please assign 100 points for each phase to the specific categories (Definition: Top Management: Managing Board, Board of Directors; Middle Management: Head of Department and of Businesses; Lower Management: Head of Groups, Team Leader):

(a) Phase of strategic goal formation (e.g., mission, vision, philosophy/values, strategic goals).

(b) Phase of strategic analysis and forecast (e.g., environment analysis, competitor analysis, internal strengths and weaknesses).
(c) Phase of development, evaluation and selection of competitive strategies (i.e., the formulation of the competitive strategy).
(d) Phase of implementing the competitive strategy (e.g., short- and mid-term goal setting and action planning).
(e) Phase of evaluation and control (i.e., goal achievement of pursued objectives to implement the competitive strategy).

Strategically Aligned Behavior of subordinate managers (middle and lower level)

Q2. To what extent do the following statements hold for the subordinate management levels (e.g., the middle and lower management levels) of your company? Subordinate management levels …

(a) … actively explain the why behind major strategic goals to their employees.
(b) … actively take initiatives to pursue major strategic goals in their daily activities.
(c) … help colleagues to pursue major strategic goals in their daily work.
(d) … help their employees to pursue major strategic goals in their daily work.

Strategy Implementation Success

Q3. Please rate the extent to which you agree or disagree with the following statements (1 = strongly disagree, 7 = strongly agree):

(a) The competition-relevant strategic objectives are met.
(b) The methods of implementation are satisfactory to those involved.
(c) Implementation outcomes are satisfactory to those involved.
(d) The competitive strategy is implemented as intended.

Strategic Planning Effectiveness

Q4. Please rate the extent to which you agree or disagree with the following statements on strategic planning of your company. Strategic planning … (1 = strongly disagree, 7 = strongly agree)

(a) … increased effectiveness in achieving the organization's objectives.
(b) … led to developing a sustainable competitive position.
(c) … assisted management levels in considering future implications of current decisions.
(d) … improved the coordination of decentralized decision making of managers.

Organizational Performance

Q5. Please rate the performance of your company in relation to the industry average (1 = well below average, 7 = well above average):

(a) Profit growth (i.e., changes of EBIT margin or EBITDA margin)
(b) Profitability (i.e., ROI, ROCE or ROA)
(c) Liquidity (i.e., (Free) Cash Flow)
(d) Overall performance of the firm

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