STRATEGIC RESPONSIVENESS THROUGH PLANNING, AUTONOMOUS ACTIONS, AND INTERACTIVE CONTROL SYSTEMS

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ABSTRACT

The combined roles of strategic planning and decentralized decision-making remain an essential issue in strategy research and its resolution has real implications for management practice. To this end the current study considers the related influences of the corporate leadership style and interactive controls and uncovers new interesting insights. We use structural equation analyses to investigate these more fine grained relationships based on an updated cross-sectional dataset from among the largest companies in Denmark. This investigation considers the often ignored effects of interactive control systems and the downplayed role of the leadership style enacted by top management and thereby extends our current understanding of the complex strategy-making processes. The analyses find that a participative leadership style drives the application of interactive controls, which in turn has a positive interactive effect on the relationship between strategic planning and corporate performance. The participative leadership style also has a positive influence on autonomous strategic actions, which in turn has a negative relationship to performance. We discuss the theoretical foundation for these intricate relationships and use these findings to consider the wider implications and opportunities to extract further insights from this new comprehensive dataset.

Key words: Autonomous strategic actions, corporate performance, interactive control systems, participative leadership style, strategic planning
INTRODUCTION

Strategic planning and decentralized decision-making are often considered as opposing empirical phenomena offering a choice between efficiency effects from integration and coordination or the exploratory opportunities derived from decentralized decision nodes. The “paradoxical” nature of this theoretical and empirical confrontation has been resolved by arguments that both phenomena coexist and operate at the same time in the form of, e.g., intended and emergent strategies (Mintzberg and Waters, 1985), induced and autonomous strategic initiatives (Burgelman & Grove, 1995, 2007), centrally planned and decentralized decisions (Andersen, 2004; Andersen & Nielsen, 2007). The intricate nature of these processes have been reflected in studies of strategy as practice (e.g., Jarzabkowski, 2004; Johnson, 2007; Whittington, 1996) and strategy as resource committing decisions made in many parts of the organization (e.g., Bower, 1997; Bower and Gilbert, 2007; Noda and Bower, 1996).

Hence, it is generally recognized that the complex strategy-making process reflects combinations of central and decentralized processes displaying combinatorial capabilities across multiple strategy-making modes that can increase strategic responsiveness and adaptability (e.g., Andersen, Denrell and Bettis, 2007; Brews and Hunt, 1999; Hart, 1992). Yet, the deeper understanding of how these dual or multifaceted processes evolve over time to form and create strategy is rather wanting often relying on few cited studies with suggestive frameworks and reasoning to guide the interplay between the multiple process perspectives (e.g., Bower, 1972, 2005; Burgelman, 1983, 2005; Hart and Banbury, 1994). There are attempts to form an increasing pool of qualitative studies with detailed descriptions of different aspects of the firm-specific strategy-making processes (e.g., Chia and MacKay, 2007; Jarzabkowski, 2004; Whittington, 2007) but the evidence is harder to generalize into a neat theoretical framework due to the methodological diversity.
To possibly form more generalizable findings around the dual strategy-making conundrum, we suggest that consideration of new relevant theoretical perspectives may advance a more complete understanding of the complex strategy-making process. From the foundation of the strategy field the importance of leadership and strategic controls assumed central roles in the strategic management model. However, as the scope has been limited to primarily consider various aspects of strategy analysis including competitive market positioning and development of unique resources. While strategic control is an essential element of the strategy model, it has taken a ‘back seat’ in strategy studies (e.g., Goold and Quinn, 1990; Simons, 1994) gradually diverging this concern to the field of management accounting. Similarly, the leadership dimension of strategy-making has largely been confined to consider specific upper echelons perspectives (e.g., Hambrick and Mason, 1984; Hambrick, 2007) leaving this study to the burgeoning management fields of leadership and corporate governance.

We think it is timely to reconsider the essential aspects of leadership and management control systems as integral parts of the strategy-making process. The concept of strategic control is a prominent element of the conventional strategy model conceived as a diagnostic control process whereas the leadership dimension is embedded in the ‘black box’ phenomenon of somehow creating strategic vision and intent. We suggest that this confined interpretation can be extended to consider more relevant and timely control approaches while trying to specify the supportive leadership traits. Hence, we specifically investigate the potential effects of interactive control processes a basis for open dialogues across hierarchical management layers and the supportive role of participative leadership styles as constituting more contemporaneous proactive ways of dealing with changing environmental conditions. We frame this explorative study in the context of the multifaceted strategy-making process considering the role of inductive leadership postures and interactive control processes.
realizing that management matters in the way it influences decision structures and the use of management information systems across the organization.

In the following we first review essential aspects of the extended strategic management model with a focus on prevalent theories adopted in the relevant management literatures and use this to sketch a proposed model as the basis for conducting subsequent exploratory studies. We explain the adopted methodology, present preliminary findings, and consider the potential implications for our current understanding of the strategy-making process that may drive future extended research initiatives to advance the strategy field.

**BACKGROUND**

The conventional conceptualization of strategic management is a longitudinal process involving a sequence of analytics-based planning, organizational execution, and outcomes deriving from these actions. The ongoing sequences of environmental analysis, updated planning, business execution, and outcome controls are seen as repeated over time with regular (typically annual) intervals. The dynamic view of this formal strategy process consists of ex ante environmental risk assessments, generation of strategic alternatives, choice of an optimal strategic path, decisions on necessary actions to achieve the implied objectives, monitoring and ex post evaluation of the organizational outcomes from execution (e.g., Ansoff, 1988; Anthony, 1965; Richards, 1986; Schendel and Hofer, 1979).

The monitoring of outcomes is seen as an important part of the planning model where deviations between intended and realized outcomes can inform corrective action plans within the diagnostic control system (Simons, 1996, 2000). In dynamic contexts outcomes will differ from the plans where the strategic control process may foster learning and facilitate updating of strategic actions (Goold and Quinn, 1990, 1993; Simons, 1990). Environments that change frequently, abruptly, and possibly in unexpected ways may require extensive corrective actions that could differ substantially from the
initial plans, which is an argument for strategy-making that will embrace both intended and emergent perspectives (Mintzberg, 1978; Mintzberg and Waters, 1985).

The corporate decision structure and management information and communication systems are important infrastructures that influence the strategy-making process. A centralized structure confines decisions to the top echelons while decentralization with delegation of power allows decisions to take place at lower hierarchical levels around the specific functions as responsive actions. In dynamic environments the ability to deal with increasing complexity and information flows is obtained by moving the corporate decision nodes closer to the relevant operational information and functional expertise (Bigley and Roberts, 2001; Child and McGrath, 2001; Daft and Lewin, 1993; Volberda, 1996). However, while modern organizations typically are more decentralized and autonomous (e.g., Achrol, 1997; Castells, 1996; Galbraith, 1994) effective organizations also conduct corporate activities around centrally integrated processes (Hill, Martin and Harris, 2000) and more rigid organization structures (e.g., Jellinek and Schoonhoven, 1990). That is, there is a simultaneous need for autonomous initiatives and an integrated operational structure to coordinate the dispersed actions. This creates a challenge to effectively combine the dual structural elements with supportive strategic control features that can integrate insights from autonomous business responses and strategic action plans. The ongoing communication around current business activities and the management control systems comprise both informal conversations between upper echelons and (across) operating managers (Mintzberg, 2005) and open inquisitive conversation around interactive control systems (Simons, 1996, 2000).

A number of studies demonstrated the significance of low-level decisions as the source for building essential corporate competencies and ventures that can generate new strategic options (e.g., Bower, 1982; Burgelman, 1983, 1988; Noda and Bower, 1996). They depict decentralized initiatives as
opportunities with future strategic implications where strategy-making derives from functional managers engaging in new initiatives where the executive role is to form the organizational structure with proper policy support (e.g., Bower, 2005; Bower and Doz, 1979; Burgelman, 1996). This should also entail a leadership approach that supports involvement of employees in decision-making in a way that solicits and considers their ideas (Kaufman, 2002; Somech, 2006; Linder and Torp, 2016). This secures faster receipt of information from the operating business entities about emerging risks and opportunities that may require new strategic responses (e.g., Dutton, Ashford, Neill, Hayes and Wierba, 1997) making the planning process more current and relevant.

In this context, strategic planning and controls can be seen as the means to create a shared cognitive understanding of the competitive environment exchanging diverse insights about realized performance outcomes (Andrews, 1980; Ansoff, 1965, 1988; Hill, Martin and Harris, 2000). Lower-level managers may use management information and control systems to coordinate activities with other parts of the organization. These decentralized actions allow experimentation and the chance of finding successful business solutions but may also lead to a wild ‘goose chase’ without general direction, which calls for a model of strategy-making that consider both planning and interactive control processes to integrate the autonomous business initiatives. So, an effective strategy process must require a corporate structure that comprises elements of central planning, autonomous initiatives, and interactive processes of communicating and sharing information sharing across hierarchical levels and business operations.

**HYPOTHESIS**

Top management support for experimentation and entrepreneurship is a commonly suggested antecedent of autonomous strategic actions (Burgelman, 1983; Kuratko et al., 2005; Zahra, 2008). Top management can be instrumental in encouraging autonomy by facilitating
experimentation and risk-taking through their own behavior both at the individual and team levels (e.g., Lumpkin et al., 2009). Thus, for instance, Kanter (1983) identified insufficient support for experimentation and entrepreneurship as a core roadblock to innovation and change. Management support denotes a clear signaling of support for bottom-up initiatives for and experimentation with new product and service offerings, new market segments, and a readiness to actively discussing ideas in an honest, serious and interested manner (Burgelman, 1991; Choi, 2004). Such behavior by top managers not only shows that they trust middle managers (Dougherty and Hardy, 1996), but also that they have confidence in the abilities of the members of their organization to perform effectively and to succeed in working on challenging jobs and projects. It implies that knowledge and facts are decisive rather than hierarchical positions (e.g., Burgelman, 1991; Kanter, 1983). Moreover, by fostering open discussion of new ideas and by acknowledging the inherent risks of experimentation, i.e. that many—if not most of such initiatives will not turn out to be successful, top management support reduces the (career) risks of engaging in autonomous actions and discussions of strategic initiatives embedded in interactive controls (e.g., Wolcott and Lippitz, 2010). Hence, in line with the literature we expect that the signal of support by top management “is a strong antecedent of autonomous strategic behavior on the part of middle-level managers’ behavior as well as others in the firm” [Kuratko et al., 2005, p. 703]. Thus, our first hypotheses read as follows:

\[ H1.1: \quad \text{A participative leadership style is associated with autonomous actions} \]

\[ H1.2: \quad \text{A participative leadership style is associated with use of interactive controls.} \]

Much of the strategy and innovation literature highlights that bureaucratic decision-making processes can impede information sharing, initiatives, innovation and financial performance (Kuratko et al., 2005; Miller and Chen, 1994). Therefore the delegation of decisions rights especially to middle managers is often seen as a path to enhanced innovation, more rapid and better decisions
due to the closeness to the market and is therefore argued as a source of higher performance (Amabile, 1998; Choi, 2004). Despite an extensive literature emphasizing the effect on motivation, innovation and decision making (Hofman et al., 2012; Linder and Torp, 2017), the empirical evidence extending the effect to financial performance is limited. Some scholars has argued that the positive effect between enhanced innovations and performance can be difficult to determine due to the time lag, and that the short term effect can be negative due to the investment in innovation and product development. Other scholars argue that while the positive motivational effect can be expected to enhance performance the lack of control with and focus of the use of financial resources might also suggest a negative financial effect of middle manager autonomy. These arguments point to the next hypotheses:

\[ H2.1: \quad \text{Autonomous actions enhance financial performance} \]

\[ H2.2: \quad \text{Autonomous actions reduce financial performance} \]

Strategic planning is considered the benchmark of the strategy field as it has been founded as a rational analytical approach to strategy-making, but it needs to be updates as the surrounding environment changes. In this context, Simons (1995, p. 109) highlights “annual profit plans or budgets, second year forecasts, and strategic operating and financial plans” as examples of management tools that managers can use interactively. By drawing the attention of managers on all levels of an organization to strategic uncertainties the interactive use of management tools “stimulate search and learning, allowing new strategies to emerge as participants throughout the organization respond to perceived opportunities and threats” (Simons, 1995, p. 91). Consequently, interactive control tools should enhance innovation, creativity, learning, and development of new organizational capabilities (e.g., Henry, 2006; Laitinen et al., 2016). Interactive use of budgets involving both top and lower level managers in discussions of how resources should be committed
and in a dynamic way adjusts assumptions, strategies, action plans and risk assessments can be seen as a path to enhance innovation and performance. This leads to the final hypothesis:

\[ H3: \quad \text{Interactive control moderates the positive performance effect of strategic planning.} \]

The hypothesized relationships are depicted in Figure 1.

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INSERT FIGURE I ABOUT HERE
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**METHODOLOGY**

**Research design and data collection**

All items in the survey is based on existing instruments to ensure comparability with the existing literature. To further test the questionnaire, the items were pre-tested in face-to-face meetings with three managers to ensure initial reliability, subsequently the questionnaire was tested on a sample of 92 managers from 62 firms (not included in the main dataset). The pretests raised no concern.

Since the expected effects of interactions are not limited to a single industry, the data collection is conducted as a cross-sectional survey among the top 500 companies in Denmark measured by number of employees. The companies cover a broad set of industries including companies with at least 275 fulltime employees. The items were divided into two questionnaires, where the first containing questions regarding budget development, financial control, risk management and strategic planning sent to the CFO of the company, while the other including items on management style, middle manager autonomy and interactive use of controls was sent to the head of marketing and sales with a personalized cover letter. Three weeks later a second letter was sent to the managers that had not yet responded. These letters produced a total of 248 responses (141 from CFOs and 107 from Heads of marketing). In June 2013 a marketing bureau was engaged
to contact the remaining managers by phone resulting in a total of 345 extra responses providing a total of 593 responses (298 from CFOs and 295 from Heads of marketing) corresponding to a response rate of 59.3%. After careful inspection 171 double responses from the companies were included in the analysis. The survey was complemented by additional data collected from a national database on Danish firms (Koebmandsstandens oplysningsbureau - KOB), including the primary industry affiliation, number of employees, core financial data, and the firm’s founding year.

To test for potential a non-response bias, we conducted tests on information from KOB regarding sector, size, turnover, firm age, capital structure and legal form, comparing responding companies with non-respondents. None of the tests suggested significant differences.

To reduce the risk of common method bias a number of both procedural and statistical measures were imposed as recommended in the literature (Chang et al., 2010; Craighead et al., 2011; Podsakoff et al., 2012). The procedural remedies included both embedding the targeted items in a larger set of scales to address a number of different topics, thereby reducing the likelihood that respondents make associations between constructs of interest to the present study. Additionally, we pretested the different items to reduce ambiguity as much as possible, which is also suggested as a procedure to reduce the risk of common method bias. Finally, respondents were assures of the confidentiality of their responses, which should reduce the risk of biases responses. To further reduce the risk of common method bias and avoid single response bias, the data was collected from diverse sources. The different items used to measure the latent constructs were separated in two different questionnaires, and the dependent variable was measured by external financial data, thereby separating the sources of the independent and dependent variables.

We also applied a number of statistical tests, to check for the existence of common method bias (Chang et al., 2010). Firstly, a Harman’s one-factor test on all items underlying the latent variables suggests that no single factor accounted for the majority of the variance explained.
(variance explained of individual factors ranged from 4.6% to 32.0%), moreover, all items loaded on their conceptual factors. Secondly, following recommendations by Craighead et al. (2011), we conducted a confirmative factor analysis comparing a one factor model with a multifactor model, which corresponds to all items loading onto their conceptualized factors. Chi-Square difference testing ($\Delta \chi^2$) comparing these two models clearly indicated that the multifactor model provides a better fit with the data ($\Delta \chi^2 = 1,056.56; df = 38, p < 0.001$). Thirdly, we conducted the marker variable test (Craighead et al., 2011). We drew on several items that theoretically should not be related to performance, such as, the firms’ founding years and the tenure of respondents. None of these variables were significantly linked to performance, thus supporting the findings of the two previous tests that no common method bias is present. All three test and the procedural measures thereby suggest that common method variance is unlikely to bias our results (Podsakoff et al., 2012).

**Measurement instruments**

The independent variables are not direct observable, but are all latent constructs. To reduce potential measurement error all the constructs have been measured using multiple observed items based on theoretical rationales to form the developed constructs.

**Interactive controls.** A number of measures on interactive controls have been used in the literature where the majority has relied on reflective measures (e.g. Henri, 2006; Moulang, 2015; Shen and Perera, 2012; Widener, 2007). However, Simons’ (1995) original theory on levers on controls and a more recent study (Linden and Torp, 2016) points to the pertinence of a four-dimensional formative construct. The four dimensions correspond to the four characteristics of interactive controls as defined by Simons’ (1995, p. 97). To test the measurement of interactive controls as a formative construct, we followed the recommendations for assessing higher-order formative constructs by...
Steenkamp and Trijp (1991). First we conducted an exploratory factor analysis on the 12 items. The 12 items loaded onto their four conceptualized lower level constructs. To further test the formative construct a confirmative factor analysis was conducted comparing the formative higher order construct with a one factor model. The Chi-square difference test indicates (df=6, p < 0.001) that, the four-factor model (Chi2 = 204.94, df = 48; CFI = 0.93, RMSEA = 0.08) fits the data substantially better than a one-factor model (Chi2 = 335.09, df = 54, CFI = 0.87; RMSEA = 0.10). This supports the independence of the four lower-level constructs which are used to form the formative higher-order construct of interactive controls. Such independence is a prerequisite for a valid measurement of a higher-order formative construct.

**Participative leadership style.** Assessment of top management’s leadership style was based on Choi (2004). The instrument focuses specifically on the participatory leadership style leaving aside other aspects of more broadly defined leadership climate constructs including individual work effort, work duration and the like. The resulting four-item measure asked the managers to rate the degree to which top management was open to middle managers’ ideas and their willingness to let middle managers experiment with new concepts or products on a 7-point Likert scale (1=fully disagree, 7=fully agree). Cronbach’s alpha is 0.85

**Middle manager autonomy.** To measure the level of middle manager autonomy, we drew on a subset of three items from a reflective scale developed and validated by Andersen (2000), which has since been used in a number of studies (e.g., Linder and Bothello, 2015). The items used in the present study relate to middle managers’ market and product-related autonomy in the past three-years (2010-2013). We relied on 7-point Likert scales ranging from 1 = fully disagree to 7 = fully agree. Cronbach’s alpha is 0.80.

**Strategic Planning.** The strategic planning construct measures the organizations emphasis on the rational analytical elements of the strategic management process. The items are based on a scale
developed by Boyd and Reuning-Elliott (1998) and addresses the emphasis on mission statement, long term plans, annual goals, systematic evaluation of strategic objectives and objective and measurable performance goals. The construct is based on five items applying a 7-point Likert scales ranging from 1 = fully disagree to 7 = fully agree. Cronbach’s alpha is 0.81.

**Performance.** was measured by average return on assets (ROA) for the years 2012 – 14 (Burton et al., 2002). Since the primary data was collected in spring 2013, financial performance data was drawn from the KOB database for the fiscal year 2012 - 14. To adjust for sector, a standardized residual was calculated with ROA as a dependent variable and sector dummies as independent variables. For control purposes we also used self-reported performance measures indicating the firm’s relative performance compared to the industry peers (Dess and Robison, 1984; Andersen and Nielsen, 2009).

**Control variables:** We controlled for industry sector, based on 8 different sectors, using the national NACE (Nomenclature of Economic Activities) codes. Firm size and age have been linked to bureaucracy and firms’ entrepreneurial and innovative activities (e.g. Wolcott and Lippitz, 2010). To control for size, we follow common practice and apply a natural logarithm to the total amount of assets, as listed in the public database. Firm age draws on the founding year of a firm reported in the same database. Given that management style, decision autonomy and way of budget use are perceptual by nature, experience with the pivotal firm is important. Therefore, we follow Larsen (1993) and considered the respondents’ tenure with their respective organizations. The average tenure was 13.07 years, suggesting that they were sufficiently acquainted with their organizations to provide accurate responses. The effect of organizational and strategic practices on company performance has been questioned since the effect often seems to disappear when controlling for past performance (Kaufman, 2015). To address this concern, past performance measured by ROA 2009 was used as control variable, none of the latent or moderating variables had a significant effect on past performance thus raising no concerns with respect to reverse causality.
Analysis.

All latent constructs were measured by multiple items, thereby increasing construct validity. Internal consistency and reliability were assessed by Cronbach’s Alpha, factor loadings, composite reliability and average variance extracted for all latent constructs (Table 1). The constructs display high levels of reliability, as indicated by composite reliabilities (CR) above 0.80 and average variance extracted (AVE) ranging from 0.50 to 0.96 (Fornell & Larcker, 1981). The latent constructs meet the convergent criteria with each loading being significantly related to its underlying factor. Likewise, a series of chi-square difference tests on the factor correlations showed that the degree to which the constructs differ from each other (discriminant validity) is achieved (Anderson & Gerbing, 1988). Finally, we conducted a test of normality as recommended by Hult et al. (2006). Both variables were significantly normally distributed at the 0.001 level based on the Kolmogorov-Smirnov test of normality.

The hypotheses were tested in a structural equation model using AMOS 22 SEM software in a two-stage procedure recommended by Anderson and Gerbing (1988). The first stage involved estimation of the measurement model, using confirmatory factor analysis (CFA) to determine convergent and discriminant validity. The second stage compared the theoretical model with the measurement model. Based on the results of the test, the structural model was used to provide path coefficients for hypothesis testing. Additional fit measures like the goodness-of-fit index (GFI) and the root mean square residual (RMSEA) were calculated to test the model fit, as recommended by Gerbing and Anderson (1992). A sequence of theory based nested (competing) structural models were evaluated
in order to determine the model representing the best fit between the hypothesized relationships and the observed variance in the data as recommended by Kline (2005).

RESULTS

Table 2 shows the correlations between the different variables and all correlations, raising no concern for multi-collinearity.

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Following the two-step procedure of Anderson and Gerbing (1988), we first estimated the measurement model before analyzing the structural model which serves us to test the hypothesized relations in SEM. The chi-square test of the measurement model was significant; however, its sensitivity to sample size is well-known and criticized (Kline, 2005). Thus, reliance on multiple fit indices rather than on the chi-square test alone is recommended, and we included a number of comparative goodness-of-fit indices that measure the proportional improvement of the model fit by comparing the hypothesized model with a restricted baseline model. As recommended by Hult et al. (2006) and Gerbing and Anderson (1992), the fit of the models was tested using the root mean square error of approximation (RMSEA) and the global comparative fit index (CFI) in addition to the normed fit index (NFI) and the Tucker-Lewis index (TLI). The CFI (Bentler, 1980) takes into consideration sample size, and values of 0.90 or better indicate a model with a good fit. The root mean square error of approximation (RMSEA) is sensitive to the number of estimated parameters in the model, as it considers the error of approximation in the population where values below 0.08 indicate a good fit. The fit characteristics of the measurement model suggest that the model fits the
data well (NFI = 0.86, TLI = 0.89, CFI = 0.91, RMSEA = 0.05) and the measures used thus are suited to test the hypothesized relations in a structural model.

The causal structures among the latent variables represented by our theoretical model were assessed in the structural model. In accordance with theory (Hult et al., 2006), we began with a simple model, where all latent structures only have a direct effect on performance (model 1). This model fits the data at an acceptable level (NFI = 0.83, TLI = 0.86, CFI = 0.89, RMSEA = 0.06 and \( \chi^2 = 624.69 \); df = 245, p < 0.001). Next, we used the “model-building” approach (Kline, 2005) to compare a sequence of nested competing models, based on theoretical reasoning as presented above. Companies conducting a participative leadership style, supporting employee involvement and initiatives are often more likely to also use budgets and plans to engage in discussions of these plans with employees. We therefore test a model (model 2) where participative leadership style is partly mediated by interactive controls. This model fits the data better (NFI = 0.85, TLI = 0.88, CFI = 0.90, RMSEA = 0.05). The path is significant at the p< 0.001 level (\( \beta = 0.39, p < 0.001 \)), and the chi-square difference test revealed a significant model improvement (\( \Delta \chi^2_{1,df} = -57.49, p < 0.001 \)). It is also theorized that companies that engage in a participative leadership style are more prone to trust employees and thereby distribute decision authority to the relevant lower levels. This indicates that participative leadership style leads to enhanced autonomy, suggesting, that it is partly mediated by autonomy (model 3). This model fits the data better (NFI = 0.85, TLI = 0.89, CFI = 0.91, RMSEA = 0.05). The path is significant at the p< 0.001 level (\( \beta = 0.30, p < 0.001 \)), and the chi-square difference test revealed a significant model improvement (\( \Delta \chi^2_{1,df} = -17.29, p < 0.001 \)). While the positive effect of participative leadership style on performance is found in a number of studies (Sax and Torp, 2015), the above effects on interactive controls and autonomy suggests, that the effect might be fully mediated by these latent factors. We therefore test a model (model 4), where the effect of participative leadership style is fully mediated by both interactive controls and autonomy,
despite the fact that the path was almost significant at the 0.05 level (p=0.051). This model did not fit the data better (NFI = 0.85, TLI = 0.89, CFI = 0.91, RMSEA = 0.05), and the chi-square difference test revealed no significant model improvement ($\Delta \chi^2_{1df} = 2.55, p = 0.11$).

The importance of strategic planning has been argued in a number of conceptual and empirical papers. A number of scholars also argue that a combination of centralized formal planning and involvement and empowerment might increased information sharing, ownership toward the strategy and a more efficient implementation of the strategy in the organization. This suggests that the effect of strategic planning on company performance is moderated by interactive controls. This moderation effect is tested in model 5. The moderation variable was created using the unconstrained approach as recommended by Marsh, Wen and Hau (2004), centering the items and using the products of the centered items as indicators of the latent interaction term. This path was significant and positive ($\beta = 0.175, p = 0.006$), and the fit statistics remained largely similar to model 3 (NFI = 0.84, TLI = 0.88, CFI = 0.90, RMSEA = 0.05), with a significant chi-square difference test ($\Delta \chi^2_{23df} = +41.73, p < 0.01$). This support hypothesis 3 and suggests that the combined effect of planning and interactive controls has a significant positive effect on performance.

In model 6 we add a moderating effect of IC on autonomy, suggesting that the effect of middle managers autonomy on performance is enhanced if top management discusses the plans and budgets with the middle managers thereby guiding a direction of the autonomy actions. The interaction was not significant ($\beta = -0.11, p = 0.86$), the fit statistics remained largely similar to model 5 (NFI = 0.83, TLI = 0.88, CFI = 0.90, RMSEA = 0.05), with an insignificant chi-square difference test ($\Delta \chi^2_{24df} = +29.31, p = 0.21$). Finally we tested in a model 7 whether leadership style has both a mediating and moderating effect on autonomy, suggesting that the effect of autonomy is
enhanced, if top management is conducting a leadership style that supports and encourage middle managers initiatives. The path was not significant at the 0.05 level ($\beta = 0.086$ $p = 0.08$), the fit statistics remained largely similar to model 5 (NFI = 0.83, TLI = 0.88, CFI = 0.90, RMSEA = 0.05), with an insignificant chi-square difference test ($\Delta \chi^2_{24df} = + 35.44$, $p = 0.06$).

Based on the evaluation of the nested models above we find that model 5 to best fit theory and the data. The model is depicted in figure 2. The significant mediation of leadership by IC and autonomy supports hypothesis 1.1 and 1.2, suggesting that companies, whit top managers that exercise a supportive leadership style more often delegate decision authority to middle managers and also more often participate in discussion about plans and the direction of the company. The negative effect of middle manager autonomy supports hypothesis 2.2 highlighting that while autonomy in theory is expected to enhance performance through empowerment, more rapid decision making and identification of potential risks and opportunities, the findings suggest that autonomy in itself seems to reduce performance. These results render the potential positive effect, if any, a more complicated matter. The insignificant direct effect of strategic planning may suggest that strategic planning without interactive involvement has no effect. However, a combination of strategic planning and engagement in interactive discussions across hierarchies about plans and directions seem to have a significant positive effect on performance.

As a robustness test model 5 was also completed with self-reported performance measures measuring relative performance compared to peers based on return on sales, overall success, return
on assets (ROA) and sales growth. The robustness test supported the findings of model 5 thereby adding reliability of the findings.

**DISCUSSION AND CONCLUSIONS**

The findings of this study underpin that strategy research need to capture the often diffuse and multi-facetted reality in companies, including intended and emergent strategy development, different organizational processes and settings, managerial controls, incentives and systems and different leadership practices. The current study combines traditional strategic planning with a participative leadership style supporting employee involvement and interactive budget controls and middle manager autonomy as managerial and organization concepts often discussed in different literature steams within management accounting, leadership, corporate strategy and organizational studies. The strong positive relationship between participative leadership style and autonomy highlights that if employees should engage in autonomous strategic actions, top management need to exert a leadership style that creates a safe environment and a signal or cultural setting that demonstrates that initiatives are appreciated and that there will be no penalties even if the initiatives is not successful. Similarly if management wants to use budget in an interactive way as a tool to engage managers at all levels to discuss and question the use of resources in a dynamic and bottom up process, a leadership style that support and encourage involvement is an important antecedent. Both of these findings explain why so many strategy processes fail or budgeting processes becomes games, where departments and individuals try to use the process to gain benefits or minimize the risk of penalties. Employees will not willingly and full heated engage in discussions or autonomous actions if they do not feel safe and ensured that the activity is both appreciated and without the risk of punishment if they should question the status quo or the perception of the top management.
Another striking finding of the study is how the effect of strategy processes is moderated by managerial systems. The study demonstrates that strategic planning in itself does not significantly affect performance, but only if it is moderated by interactively used budgeting. The study thereby supporting earlier findings that centralized strategic planning need to be implemented and accepted in the organization through involvement. The study thereby gives a practical guidance to how companies can use budgeting processes as a way to engage and involve employees in strategic discussions and thereby enhance performance.

Finally we find a significant negative effect of autonomy on financial performance. While the majority of theory predicts that autonomy should enhance motivation and provide more sound decisions lead to enhanced financial performance, only a scarce amount of empirical studies has managed to prove this relationship. This raises the question if autonomy is in fact a path to enhanced performance, if it needs to be mediated by or moderated by different factors, if the effect is so lagged that it becomes difficult to measure or if it only is in certain dynamic environments that autonomy has it strengths. Autonomy can be argued to either lead to anarchy and lack of focus or foot-dragging and free rider problems if not implemented in an organization where employees has a high work ethics, the knowledge to make sound holistic decisions, that benefits the entire company and coordinates these initiatives with the rest of the organization. The current study thereby raise a warning flag, highlighting that autonomy per see might even reduce performance if not introduced in the right setting and that more research is needed in the area.

**LIMITATIONS**

Despite our efforts to develop our hypothesis based on theory, collect data in a sound way and conduct a number of tests as recommended in theory, it is still necessary to emphasis that SEM do not test
causality and that the discovered relationships can be bias and should be supported by more longitudinal studies. Similarly the study is conducted on a Danish dataset and while most Danish companies operate international and despite that the Danish society is an open economy embedded in the EU, we can not rule out that there could be cultural differences.
References


Galbraith JR. 1994. *Competing with Flexible Lateral Organizations*. Addison-Wesley, Reading, MA.


Linder S, Torp SS. 2017. Does it matter how managers use budgets, IEEE Transaction on Engineering Management (Forthcoming)


<table>
<thead>
<tr>
<th>Dimensions and Variables</th>
<th>Construct Reliability</th>
<th>AVE</th>
<th>Factor loadings</th>
<th>Indicator reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interactive Controls (IC)</strong></td>
<td>0.95</td>
<td>0.85</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Interactive Controls 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Budget controls is an important and continuously part of top management tasks</td>
<td>0.85</td>
<td>0.72</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- All managers in the organization is involved in the budgeting process</td>
<td>0.80</td>
<td>0.64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Top management often use budget information as a means of questioning and debating the ongoing decisions and actions of departments</td>
<td>0.89</td>
<td>0.79</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Interactive Controls 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- The budget information forces both top management and managers at all levels of the firm to continually question and revise their assumptions</td>
<td>0.85</td>
<td>0.72</td>
<td></td>
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</tr>
<tr>
<td>- Top management often use budgeting information as a means of questioning and debating the ongoing decisions and actions of department/managers</td>
<td>0.89</td>
<td>0.79</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- The budget process is continuous + it demands regular and frequent attention from managers at all levels</td>
<td>0.87</td>
<td>0.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Interactive Controls 3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- There is a lot of interaction between top managers and department/unit managers in the budget process.</td>
<td>0.83</td>
<td>0.69</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Top management uses the budgeting process to discuss the competitive advances of the company with middle managers.</td>
<td>0.89</td>
<td>0.79</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- The budgeting process creates discussions between top management and middle managers on the expectations of the company plan.</td>
<td>0.88</td>
<td>0.77</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Interactive Controls 4</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Budgets and budget controls helps top management and middle managers to discuss risks and opportunities that can affect the strategic goals of the company</td>
<td>0.87</td>
<td>0.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- The budgeting process unite top management and middle managers in open discussions of the company strategy and activities</td>
<td>0.85</td>
<td>0.72</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Top managers continuously discuss the budget and budget controls with middle managers.</td>
<td>0.82</td>
<td>0.68</td>
<td></td>
<td></td>
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</table>
Table 1: Measures (Cont.)

<table>
<thead>
<tr>
<th>Dimensions and Variables</th>
<th>Construct Reliability</th>
<th>AVE</th>
<th>Factor loadings</th>
<th>Indicator reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Autonomy</strong> <em>(How often have middle managers autonomously made decisions on)</em></td>
<td>0.82</td>
<td>0.61</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Activities aiming at increasing market shares</td>
<td></td>
<td></td>
<td>0.88</td>
<td>0.77</td>
</tr>
<tr>
<td>- Sales to new segments or markets</td>
<td></td>
<td></td>
<td>0.90</td>
<td>0.81</td>
</tr>
<tr>
<td>- Development of important new products</td>
<td></td>
<td></td>
<td>0.76</td>
<td>0.58</td>
</tr>
<tr>
<td></td>
<td>0.85</td>
<td>0.59</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Participative leadership style</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- They actively seek middle managers’ opinions and ideas about strategic issues</td>
<td></td>
<td></td>
<td>0.83</td>
<td>0.69</td>
</tr>
<tr>
<td>- They are open to new ideas and initiatives from all employees</td>
<td></td>
<td></td>
<td>0.81</td>
<td>0.66</td>
</tr>
<tr>
<td>- They appreciate that middle managers experiment with new ideas and products</td>
<td></td>
<td></td>
<td>0.81</td>
<td>0.66</td>
</tr>
<tr>
<td>- They listen to middle managers when significant decisions are made</td>
<td></td>
<td></td>
<td>0.87</td>
<td>0.76</td>
</tr>
<tr>
<td></td>
<td>0.80</td>
<td>0.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Strategic Planning</strong> <em>(Emphasis on the following activities)</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Preparation of long-term plans (3-5 years)</td>
<td></td>
<td></td>
<td>0.77</td>
<td>0.59</td>
</tr>
<tr>
<td>- Yearly goals (sales goals, efficiency, market shares etc.)</td>
<td></td>
<td></td>
<td>0.80</td>
<td>0.65</td>
</tr>
<tr>
<td>- Evaluation of the company’s strategic goals and the degree of fulfilment</td>
<td></td>
<td></td>
<td>0.83</td>
<td>0.69</td>
</tr>
<tr>
<td>- Objective and measurable performance measures</td>
<td></td>
<td></td>
<td>0.76</td>
<td>0.57</td>
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### Table 2: Correlations

<table>
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<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<tr>
<td>Interactive Controls (IC)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>0.90</td>
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<tr>
<td>Strategic Planning</td>
<td></td>
<td>0.21</td>
<td></td>
<td><strong>0.80</strong></td>
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<tr>
<td>Autonomy</td>
<td></td>
<td>0.18</td>
<td></td>
<td><strong>0.30</strong></td>
<td><strong>0.91</strong></td>
<td></td>
</tr>
<tr>
<td>Participative leadership style</td>
<td></td>
<td>0.43</td>
<td></td>
<td><em><strong>0.08</strong></em></td>
<td><em><strong>0.26</strong></em></td>
<td><em><strong>0.85</strong></em></td>
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</tbody>
</table>

N = 171. Significance of correlations: *** p < .001; ** p < .01; * p < .05 (two-tailed test). Cronbach’s alphas along the diagonal.

### Table 3: Structural Equation Models (AMOS)

<table>
<thead>
<tr>
<th>Model and description</th>
<th>Δχ²</th>
<th>ΔΔχ²</th>
<th>df</th>
<th>NFI</th>
<th>Delta2</th>
<th>TLI</th>
<th>CFI</th>
<th>RMSEA</th>
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<tr>
<td>Measurement model</td>
<td>522.79</td>
<td></td>
<td>220</td>
<td>0.86</td>
<td>0.91</td>
<td>0.89</td>
<td>0.91</td>
<td>0.052</td>
</tr>
<tr>
<td>Direct relationships</td>
<td>624.69</td>
<td>-101.90</td>
<td>245</td>
<td>0.83</td>
<td>0.89</td>
<td>0.86</td>
<td>0.89</td>
<td>0.056</td>
</tr>
<tr>
<td>Lead mediated by IC</td>
<td>567.20</td>
<td>-57.49</td>
<td>244</td>
<td>0.85</td>
<td>0.91</td>
<td>0.88</td>
<td>0.90</td>
<td>0.051</td>
</tr>
<tr>
<td>Lead mediated by IC and Auto</td>
<td>549.91</td>
<td>-17.29</td>
<td>243</td>
<td>0.85</td>
<td>0.91</td>
<td>0.89</td>
<td>0.91</td>
<td>0.050</td>
</tr>
<tr>
<td>Lead fully mediated</td>
<td>552.46</td>
<td>-2.55</td>
<td>244</td>
<td>0.85</td>
<td>0.91</td>
<td>0.89</td>
<td>0.91</td>
<td>0.050</td>
</tr>
<tr>
<td>Planning moderated by IC</td>
<td>591.64</td>
<td>-41.73</td>
<td>266</td>
<td>0.84</td>
<td>0.91</td>
<td>0.88</td>
<td>0.90</td>
<td>0.049</td>
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<tr>
<td>Autonomy moderated by IC</td>
<td>620.95</td>
<td>-29.31</td>
<td>290</td>
<td>0.83</td>
<td>0.90</td>
<td>0.88</td>
<td>0.90</td>
<td>0.048</td>
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<tr>
<td>Lead moderates autonomy</td>
<td>627.08</td>
<td>35.44</td>
<td>290</td>
<td>0.83</td>
<td>0.90</td>
<td>0.88</td>
<td>0.90</td>
<td>0.048</td>
</tr>
</tbody>
</table>

Significance levels: *** p < .001; ** p < .01; * p < .05 (two-tailed test).
Figure 1: Hypothesize model relationships.
Figure 2: Final Model

- Standardized betas. Significance levels: *** p < 0.001; ** p < 0.01; * p < 0.05