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The impact of participation in strategic planning and action planning on management control effectiveness: An analysis of independent and joint effects*

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Abstract

This research paper examines the independent and joint effects of participation in strategic planning and action planning. There is extensive research about employee participation in both the fields of strategic planning and budgeting. However, there is a lack of research about the interaction between participation in strategic planning and budgeting. Drawing on the research on participation in decision-making processes, the hypothesis is that strategic planning and action planning have both independent and joint effects on MC effectiveness. The research study draws on a large database assembled by researchers from eleven different countries. The total data set consists of personal interviews with top managers of 807 SBUs. Participation is operationalized with respect to both ends and means. The analysis shows that participative action planning has positive, direct effects on MC effectiveness, while no significant association is found for participation in strategic planning. In contrast to expectations, we also find that participative strategic planning and participative action planning decrease the effectiveness of each other, implying that they function as substitutes. We discuss and theorize further in explaining this interesting finding.

Keywords: strategic planning, budgeting, participation, management control effectiveness, substitutability

1. Introduction

Resource allocation and budgeting are management accounting techniques used by organizations to operationalize strategic and action planning. Strategic planning has been investigated over the years in the strategy literature (White III et al. 2016). Similarly, in management accounting, there has also been numerous research studies on budgeting (Covaleski et al. 2003; Dunk and Nouri 1998). Surprisingly, few studies have examined the interface between strategic planning and budgeting, even though budgeting is a fundamental means to operationalise action planning, set targets and allocate resources to deploy the strategy of an organization.

Recent discussions and research in management accounting have begun to focus on how management control practices operate together within a package of controls (Bedford and Malmi 2015; Otley 2016). This literature emphasizes that management controls often do not operate in isolation, but that their effectiveness is dependent upon other management controls within a package.

Drawing on the management control package (MCP) framework, this paper examines the relationship between two important elements of the MCP in organizations: strategic planning and budgeting. The elements are operationalized by whether employees (mid-level managers) participate in the strategic planning and budgeting functions. There is participation when subordinate employees can influence planning and budgeting, and no participation when decision rights are concentrated to top-managers.

The purpose of this paper is to extend knowledge about the effects of participation in the strategic planning and action planning processes on the effectiveness of management control. The paper considers the joint effects on management control effectiveness of participation in strategic planning as well as in action planning through budgeting, short term planning and target setting. Thus, the paper contributes in extending the research literature on participation in strategic planning and budgeting. Our research also contributes to the MCP-literature in increasing the knowledge of the interaction effects between two important elements of the organizational control package: strategic planning and budgeting¹.

The results show that participation by subordinates in action planning activities has an impact on the effectiveness of management control. Most importantly, however, the results indicate that when the organization has no subordinate participation in budgeting, management control effectiveness increases by having subordinates participate in strategic planning. However, if subordinates participate in budgeting then whether or not they are involved in strategic planning has little effect on the effectiveness of management control. Conclusively, participation in strategic planning and budgeting seems to be substitute mechanisms in management control packages. In the paper, it is theorized further about this interesting finding of substitutability.

¹ We simplify in the paper by using budgeting and action planning interchangeably. Admittedly, there may be action planning (short term planning and target setting) without budgets.

The paper is organized in the following manner. The next section develops the hypotheses. The research method is then described. This is followed by the results of the empirical analysis. The final section contains a discussion of research findings, conclusions, and suggestions for future research.

2. Theory development

2.1 *Planning as a form of management control*

Planning involves establishing goals, clarifying expectations, allocating resources, outlining courses of action, setting targets, and integrating activities between functional areas of the organisation (Flamholtz 1983). Planning is primarily an ex-ante form of management control (MC), although information from the planning process often forms the basis for ex-post evaluations. In its most overt form, planning achieves goal congruence through the pre-determination of the tasks and behaviours required to realise organisational objectives (Bedford and Malmi 2015; Merchant and Van der Stede 2007). Planning may also be used as a coordinative mechanism by formally articulating and communicating goals and schedules to individuals engaged in often disparate activities dispersed throughout an organisation.

Malmi and Brown (2008) identify two categories of planning controls. Long-term planning, or strategic planning, is the systematic process of formulating and articulating the objectives of the organisation and the means by which those objectives will be achieved (Andersen 2004; Brews and Hunt 1999). Short-term planning, or action planning, relates to the more immediate future of the organisation and has a tactical focus. Action planning involves short-term target setting, such as the preparation of budgets, as well as the specification of the tasks and activities required to meet those targets. Perhaps the most investigated aspect of both strategic planning and action planning processes within organisations is participation. Planning participation refers to whether subordinates are involved in the planning process and are able to influence the outcomes of that process (Andersen 2004; Shields and Young 1993). More broadly, participation is related to “top-down” and “bottom-up” approaches to planning. Strategic planning can “follow the traditional top-down approach – where top managers undertake the strategic thinking, decision-making, planning, and then communicate it to the wider organization – or it can follow a bottom-up approach – where there is involvement of all levels of management in the strategic process” (Ferreira and Otley 2009, p. 270). Likewise, action-planning and budgeting processes can proceed in either a top-down or authoritative manner in which superiors retain decision-rights over target setting, resource allocation and specification of tasks, or in a bottom-up, participative manner, which allows “managers to influence their day-to-day activities and performance targets” (Heinle, Ross and Saouma 2013, p. 1026).

In this study we investigate the association between planning participation by the subordinates of top managers (i.e. middle managers) and MC effectiveness. In the following sections, we outline how *participative strategic planning* (PSP) and *participative action planning* (PAP) enable effective MC. We then discuss the potential joint effects of PSP and PAP on MC effectiveness.

2.2 *Participative strategic planning and MC effectiveness*

Although the evidence linking participation in the strategic planning process to economic performance is mixed (Andersen 2004), the literature argues and generally finds that PSP is

associated with a variety of beneficial outcomes (Wooldridge, Schmid and Floyd 2008), such as increased identification with organisational goals (Gerbing, Hamilton and Freeman 1994), strategic consensus (Wooldridge and Floyd 1990) and more effective implementation of strategic intentions (Gerbing, Hamilton and Freeman 1994; Vilà and Canales 2008). In line with this research, we expect PSP to facilitate more effective MC in a number of ways.

First, strategic planning provides a channel for top management to communicate strategic objectives and their relative importance to subordinates. Ketokivi and Castaner (2004) argue that a consistent and informed understanding of strategic objectives is a critical precondition for not only effectively implementing intended plans, but for also ensuring that autonomously generated actions are congruent with the broader strategic intent of the organisation. By including subordinates in strategic planning top managers are able to communicate and clarify organisational objectives. Even in situations where subordinates have limited opportunity to exert any real influence on the outcomes of the strategic planning process, involvement provides a means for top managers to generate subordinate “buy-in” and increase the level of consensus around the direction and priorities of the organisation (Wooldridge, Schmid and Floyd 2008). This increasing goal congruence by attenuating positional-bias (Ketokivi and Castaner 2004) or sub-goal pursuit (March and Simon 1958) as subordinates become aware of how their tasks relate to the accomplishment of the broader goals of the organisation.

Second, being provided an opportunity to voice their opinion in an integral organisational process can lead to a sense of self-worth and belonging for participants and instil an enhanced appreciation of their role in achieving organisational outcomes (Goold and Quinn 1990; Ketokivi and Castaner 2004). The affective benefits of PSP may also result in a stronger commitment from subordinates towards a particular strategic agenda, even if their personal views are not entirely consistent with the goals adopted by the collective (Ketokivi and Castaner 2004). PSP can also provide an avenue for managerial attempts to reproduce or alter the cultural traits of the organisation, resulting in a better alignment between the values and beliefs of the organisation and those of subordinates (De Haas and Kleingeld 1999; Shields and Young 1993).

Third, PSP provides a means for information sharing between top managers and their subordinates (Hutzschenreuter and Kleindienst 2006). As top managers are often removed from the operational activities of the firm, middle managers are able to provide detailed information on important internal and external changes (Floyd and Wooldridge 1991). By providing access to the private and localised information held by subordinates, PSP may result in not only more informed strategic decision-making and a better allocation of resources, but also provides a source of information for evaluating and rewarding subordinates (Ketokivi and Castaner 2004; Shields and Young 1993). Finally, PSP can improve the adaptability and flexibility of the firm and provide a means to integrate emerging opportunities into the strategic agenda of the firm. By engaging subordinates in an open and inclusive forum, the strategic planning process may serve as a repository of problems and solutions that can be used by the organisation over time to learn how to effectively interact with its environment (Levitt and March 1988). Furthermore, participation may provide a means to uncover, elaborate and evaluate emergent initiatives and integrate them into the broader strategic plan (Mintzberg 1994). Articulation and integration enables a more coordinated response to emerging opportunities, by translating vague notions or disjointed activities into a coherent strategic agenda that can be disseminated throughout the organisation.

Although we expect subordinate involvement in strategic planning processes to enhance organisational control, participation may not always be beneficial. If strategic issues are limited or relatively uncomplicated, subordinate participation may be an unnecessary cost. Even in more turbulent environments, the benefits of involving middle management may be outweighed by

the costs associated with the additional time taken to respond to critical events. In time constrained situations, fast and decisive action is often necessary in place of rigorous analysis (Eisenhardt 1989; Segars, Grover and Teng 1998). However, overall we expect PSP to increase MC effectiveness. This is formally stated as follows:

H1: Participative strategic planning is associated with higher management control effectiveness.

2.3 Participative action planning and MC effectiveness

The main mechanism for short-term target setting in organisations is through the budgeting process. Participative budgeting is one of the most researched topics in the management accounting literature (Shields and Shields 1998). An early meta-analysis of research examining participation-outcome relationships indicated that “participation only has modest influence on task performance, decision performance, motivation, satisfaction, and acceptance” with “many of the noteworthy positive findings” explained by “methodological artifacts” (Wagner and Gooding 1987, p. 524). However, more recent assessments indicate general support for a positive, direct relationship between participative budgeting and job-related outcomes (Greenberg, Greenberg and Nouri 1994; Shields, Deng and Kato 2000). In a recent meta-analysis of the budgetary participation literature, Derfuss (2009) concludes that contrary to recent criticisms “budgetary participation creates value through its positive association with managers’ attitudes and behaviour” and that “important relations in budgeting research appear less contingent than previously argued” (p. 224).

The literature describes three interdependent reasons for the association between budgetary participation and job-related outcomes – cognitive, motivational, and value-attainment. These reasons also provide the basis for the expected association between PAP and increased MC effectiveness. First, participation in target setting provides the opportunity for the exchange of information between managers and their subordinates (Chong and Chong 2002; Kren 1992). This allows subordinates to clarify expectations, tasks and other factors associated with their operational activities (Magner, Welker and Campbell 1996). As such, subordinates learn about how to do their job more effectively, increasing the alignment between their actions and organisational goals (Shields and Shields 1998). The cognitive, or informational, role of PAP also allows the superior access to the private information of subordinates. By reducing information asymmetry the superior is able to design more goal-congruent incentive mechanisms (Shields and Young 1993).

Second, participative target-setting is argued to have motivational effects that increase subordinate effort and alignment to organisational goals (Chong and Chong 2002; Shields and Shields 1998). Prior research suggests that PAP will increase subordinates’ acceptance and commitment to agreed-upon targets and courses of action (Erez, Earley and Hulin 1985). Shields and Shields (1998) argue that participation in target setting increases “a subordinates’ trust, sense of control, and ego-involvement” (p. 59). Consequently subordinates are more likely to internalize these targets (Argyris 1952; Hofstede 1968) leading to greater identification and commitment to not only the goals they are held accountable for but also with the broader objectives of the organisation (Nouri and Parker 1998). Third, participation serves a value-attainment role as subordinates’ feelings of respect, equality and belonging are enhanced by providing an opportunity to express their own values and opinions (Shields and Shields 1998). This increases the potential for subordinates to realise their own values through the achievement of action plans and targets (Locke 1976). PAP may also increase the sense of

relatedness and belonging to the organisation, facilitating greater identification with the values and beliefs of the organization (Nouri and Parker 1998).

The main concern with participative target setting is that subordinates may misreport their private information (Heinle, Ross and Saouma 2013). If subordinates attempt to introduce slack into targets then this will result in misaligned incentive mechanisms, inhibiting the achievement of effective MC. There is, however, little consistent evidence that participation in target setting processes results in the creation of slack (De Baerdemaeker and Bruggeman 2015). In particular, agency-based research often observes that subordinates report more honestly than expected, resulting in lower slack (Brown, Evans III and Moser 2009), while some behavioural research indicates that participation results in establishing more, rather than less, difficult targets (Chong and Johnson 2007; Said, HassabElnaby and Wier 2003). The preceding arguments lead us to the following expectation:

H2: Participative action planning is associated with higher management control effectiveness.

2.4 Joint effects of participative strategic planning and participative action planning

The prior hypotheses relate to the independent effects of PSP and PAP on MC effectiveness. However, there are reasons to expect that if used in isolation the beneficial effects of PSP and PAP may not be fully realized. Blumentritt (2006) argues that strategic planning and action planning processes are “distinct but intertwined activities” (p.73). Likewise, De Baerdemaeker and Bruggeman (2015) contend that strategic planning and budgeting “cannot be studied in isolation” as both are “part of the organisational planning process.” Action plans and targets provide a mechanism to communicate the often abstract and complex strategy of the firm (Ketokivi and Castaner 2004), facilitating the translation of strategic plans into operational tasks and processes (Hansen and Van der Stede 2004). As such, strategic plans are likely to be less effective without action planning processes. Similarly, short-term targets and plans are likely to be less effective without the identification of, and alignment towards, the long-term objectives of the firm (Blumentritt 2006). Lorange (1980) also argues that coherence between strategic planning and budgeting processes in an organization has a number of desirable effects, including increasing the flow and quality of horizontal and vertical communication. These arguments suggest that choices about how strategic planning and action planning takes place within an organisation are likely to have complementary effects. That is, elements of one planning process increase the effectiveness of the other, and vice-versa (Grabner and Moers 2013; Milgrom and Roberts 1992).

There is little empirical evidence on the potential complementarities that might exist between elements of planning processes. Ketokivi and Castaner (2004) show that the combination of participation by subordinates in strategic planning with the communication of objectives after plans are established jointly enhances goal congruence by reducing position bias. As subordinate participation in action-planning provides a means for superiors to further emphasize organisational goals (Hansen and Van der Stede 2004), PAP is expected to increase the effectiveness of PSP. PSP is also likely to improve the effectiveness of PAP. By instilling greater commitment and identification to organisational objectives, PSP can reduce the likelihood that managers will engage in misreporting of private information and other dysfunctional behaviours when involved in the setting of short-term targets. Effective planning also requires a high level of consistency between strategic objectives and the operational activities intended to achieve those objectives. Involving subordinates in the strategic planning process is likely to increase their understanding of how short-term actions and targets relate to higher level objectives. We

expect, therefore, that PSP and PAP will jointly increase MC effectiveness. This is formally stated as:

H3: Participative strategic planning and participative action planning such as participative budgeting and target setting have complementary effects on management control effectiveness

3. Research method

3.1 Data collection

This study uses survey data from eleven countries that participated in a large-scale project on management control packages.² The same survey instrument has been used in all the participating countries. For countries where English is not the primary language, the survey was translated into the native language. We did not aim for the most strict or literal translation based on the lexical denotation of survey items (Van De Vijver and Leung 1997). Rather, we attempted to maximize consistency in understanding of survey items. To ensure consistency in the meaning of the survey items, the surveys were independently back-translated (Harkness 2003). A stratified, random sampling approach was followed in each country.³ For European countries the sample was established with the ORBIS database for Europe, while Dun and Bradstreet were used for the Australian sample and the Scott's National database for Canada. The population consisted of private, for-profit companies having more than 250 employees. The minimum size increased the probability that the firm had formal management control systems in place. Samples were stratified by industry (manufacturing, service and wholesale) and size (medium, defined as between 250 and 1000 employees, and large, defined as more than 1000 employees) to increase the comparability of samples between countries. The target respondent was a top manager of a strategic business unit (SBU) within the company. An SBU is defined as a relatively independent organizational sub-unit that is responsible for developing its competitive strategy. In some medium sized companies the SBU is equivalent to the firm. Consistent with prior MA research, top managers are defined as being part of the top two levels of the management hierarchy (i.e. the CEO or MD or one level below) (Henri 2006).

Data collection took place from November 2009 to April 2013. The data collection timeframes for each country are provided in Table 1. Respondents were initially contacted via telephone or email. The data was collected via personal interviews (either face-to-face or telephone). This approach increases the validity of the data as items can be verbally clarified with the respondent and it minimizes the chances of missing values. It also increases interrater reliability. Prior to conducting interviews a set of definitions and interpretations were developed and agreed upon by participating researchers. The interviews were carried out by one or two researchers and the time taken for an interview was between 1 and 3 hours. In total 807 responses were collected. However, in some instances there was missing data or it was determined that the respondent did not fully meet the criteria of the study. These cases were removed from the sample, leaving a

² The countries are Australia, Austria, Belgium, Canada, Denmark, Finland, Germany, Italy, Norway, Poland and Sweden. The survey collected information on strategic planning, action planning, performance measurement, incentive systems, organizational structure and processes, cultural controls, and organizational strategy and environment.

³ Stratification is defined as the process for grouping members of a basic population into relatively homogeneous subgroups (here depending on the amount of employees) before starting to draw random samples (Cochran, 1977).

usable sample of 770 firms. Table 2 presents the distribution of organizations by country, size and industry. Table 3 provides the distribution of respondent positions.

<Insert Table 1 about here>

<Insert Table 2 about here>

<Insert Table 3 about here>

3.2 Measurement of variables

Measures for participation follow the distinction of Brews and Hunt (1999) between means and ends. Brews and Hunt (1999) note that ends and means are distinct planning processes, where “ends relate to *what* an organization desires to achieve, while means relate to *how* the organization intends to achieve these ends” (p. 891). To measure PSP and PAP, respondents were asked to select a categorical description that best represented the extent of participation in their firm. For PSP the categories range from “only top management involvement” to the “involvement of two more levels below top management”, while for PAP the categories are from “only top management involvement” to “only subordinate involvement” (Ketokivi and Castaner 2004). Survey items are shown in Appendix A. As these measurements are not continuous, dichotomous variables are created. Variables take a value of 1 if the firm involves subordinates in the planning process and a value of 0 if only top management is involved. As a result, six categorical variables are created, representing participation in strategic planning ends (PSPENDS), participation in strategic planning means (PSPMEANS), participation in both strategic planning ends and means (PSPBOTH), participation in action planning ends (PAPENDS). And participation in action planning means (PAPMEANS), and participation in both action planning ends and means (PAPBOTH).

Management control effectiveness (MCEFFECT) is measured using six items. Unidimensionality is assessed through factor analysis with maximum likelihood extraction and oblique rotations. Table 4 shows that four items load on a single factor that explains 40% of the variance. The remaining two items are dropped from the analysis. A Cronbach alpha of 0.75 indicates satisfactory reliability (Nunnally, Bernstein and Berge 1967).

<Insert Table 4 about here>

The study controls for a number of variables that may influence the degree of benefit an SBU receives from planning participation. First, some evidence suggests that participation is more effective in firms that face high levels of uncertainty (Andersen 2004; Govindarajan 1986; Kren 1992). This is controlled for by a measure of environmental uncertainty. Perceived environmental uncertainty is measured as an average index across six dimensions (Bedford and Malmi 2015; Gordon and Narayanan 1984). Second, more complex and larger firms may receive greater benefits from planning as top managers are less likely to hold all relevant information (Miller and Cardinal 1994; Wooldridge, Schmid and Floyd 2008). Firm size is included to control for this effect and is measured as the natural logarithm of the number of employees. Third, research suggests that the benefits from participation may be higher for firms that pursue particular strategies (Floyd and Wooldridge 1992; Langfield-Smith 1997). This is controlled for by including a two item measure to indicate the emphasis placed on product innovation. Both items load on a single factor (Var % = 77.43) with a Cronbach alpha of 0.71. Finally, as the data is collected across multiple countries, variations in national culture may account for higher or lower benefits received from participation (Leach-López, Stammerjohan and McNair 2007; Shields and Young 1993; Tsui 2001). Countries that have low power distance and low

individualism have higher ideological preferences for participation (Chow, Shields and Wu 1999; Hofstede 1984). This is controlled for by including a dummy variable that takes the value of 1 for responses from countries that score relatively low on these cultural dimensions. These countries are Austria, Denmark, Finland, Norway, Sweden and Germany (Hofstede 1984). The remaining countries are coded with a value of 0. Table 5 includes descriptive statistics and the correlation matrix for the variables included in the statistical analyses.

<Insert Table 5 about here>

4. Results

Hypotheses are examined using regression with robust standard errors and clustered by industry. Continuous variables are mean-centered prior to constructing interaction terms. Table 6 reports the results of the hypothesis tests.⁴

<Insert Table 6 about here>

Model 1 shows the results for participation of subordinates in ends while Model 2 reports the analysis of participation in means. In model 3 the participation variables take a value of 1 if subordinates participate in the planning of both ends and means.

The results do not provide support for H1. All three models show a non-significant association between PSP and MCEFFECT. The results do suggest, however, that participative strategic planning has control benefits for firms that face higher environmental uncertainty, with the interaction between PSP and ENVUNC showing positive and significant associations with MCEFFECT in model 1 ($p < 0.10$) and model 3 ($p < 0.10$).

H2 is consistently supported by the results. All three models show a positive and significant independent association with MCEFFECT. Results also indicate that participation in action planning is less effective the larger the SBU size, with significant and negative coefficients for PAP observed in model 1 ($p < 0.05$) and model 3 ($p < 0.10$). The results also suggest that SBUs operating in national cultures with low individualism and low power distance tend to receive less benefit from subordinate participation in action planning.

No support is provided for H3. The interaction between PSP and PAP is insignificant in model 2, while the interaction term is significant but negative in model 1 ($p < 0.05$) and model 2 ($p < 0.05$). Contrary to expectations, the results suggest that rather than being complements, participative strategic planning and participative action planning act as substitutes. This implies that subordinate participation in strategic planning reduces the effectiveness of subordinate participation in action planning, and vice-versa.

<Insert figure 1 about here>

5. Discussion and conclusion

⁴ Multicollinearity is assessed through variance inflation factors (VIF). For models 1 and 3 the VIF are less than the recommend threshold of 10 suggesting that multicollinearity is not a significant concern (Hair et al., 2006). However, the VIF for model 2 is higher than 10. This is due to the dummy variables indicating planning participation in means being skewed. Results should be interpreted with some caution.

This research paper has examined the relationship between participative strategic planning, participative action planning and MC effectiveness. While prior literature has investigated the independent effects of participation in decision-making processes on a variety of outcomes, little research has examined whether participation leads to more effective control outcomes. Further, this is the first study to investigate the joint effects of participation in both strategic planning and action planning.

The results of this study imply that participation action planning, such as in budgeting and short-term target setting, positively influence the effectiveness of management control. They also show that subordinate participation in strategic planning does not have an impact on management control system performance. Contrary to expectations, combining both participation in strategic planning and action planning does not increase the performance of the management control system. Instead, our results indicate the PSP and PAP operate as substitutable arrangements. One explanation for this finding could be that budgetary slack increases exponentially, when participation is high in both the functions of strategic planning and budgeting (Merchant and Van der Stede 2007). In other words, motivational and informational gains resulting from horizontal coherence between participation in strategic planning and budgeting are offset by higher agency costs.

However, following theories on information asymmetry, participation also creates an interface where employees and managers can exchange information. In today's often knowledge-intensive organizations, information is diffused among many organizational participants at various levels. It could be theorized that if budget participation is high, new project can be identified without delay. This is possible due to the iteration and negotiation effects between higher and lower ranked managers/employees. Information is shared timely for the upcoming planning cycle. Thus, there is limited need for extensive subordinate participation in strategic planning.

Similarly, if employee participation is high in strategic planning, subordinate employees are already committed to organizational goals and are less concerned about participation in budgeting. In essence, it would seem that from a MCS-package perspective, participation in strategic planning and participation in budgeting could be viewed as substitute devices. Finally, the findings in this study may explain some of the inconsistencies and mixed results in prior research on employee participation and organizational performance. Previous research has not considered the interaction between participation in strategic planning and budgeting in their analyses of how participation impacts on organizational performance.

Future research could make more fine-grained analyses of the conditions under which different combinations of participation in strategic planning and budgeting are efficient. One example of a contextual factor of interest is organizational complexity. In complex organizations, information is dispersed among many actors at various levels. Hypothetically, such organizations would involve higher levels of participation in strategic planning and budgeting. Another is the impact of culture on the MC effects of participation. Contrary to arguments in the literature that cultures that are low on individualism and power distance have a preference for participation in organizational decision-making, our result suggest that participative action planning in these countries reduces the effectiveness of management control.

One important practical implication is that organizations may benefit from paying close attention to the alignment of participation levels in both strategic planning and budgeting. For

many organizations, iteration/negotiation between managers and subordinate would be important in at least some stage in the business planning cycle.

Appendix A

Survey instrument

Strategic planning participation

Please indicate who participates in the formation of your SBU's strategic ends and means

1. Top management of SBU with corporate management
2. Only top management of the SBU
3. Only SBU management, including one level of managers below SBU top management
4. Only SBU management, including two levels of managers below SBU top management
5. More than two levels of managers below SBU top management

Action planning participation

Please indicate how short-term targets are set in your SBU (for both ends and means)

1. Top management sets targets and passes them to subordinates
2. Top management sets targets, but revises them in negotiations with subordinates
3. Targets setting is quite long, iterative negotiation process between organizational levels
4. Subordinates set autonomously targets, but they are subject to top management acceptance
5. Subordinates set targets autonomously with little, if any, management involvement

Environmental uncertainty

How predictable or unpredictable have changes in the external environment been?

1. Customers (e.g. levels of demand, customer requirements)
2. Suppliers (e.g. markets for key inputs, quality of resources)
3. Competitors (e.g. competitors entering, leaving, tactics/strategies)
4. Technological (e.g. R&D advances, process innovations)
5. Regulatory (e.g. new initiatives for laws, regulations)
6. Economic (e.g. interest and exchange rates)

Product innovation

Please indicate to what extent you agree with the following:

1. Our success depends on product/service novelty
2. Our success is driven by product innovations

Management control effectiveness

The SBU's entire package of management control systems...

1. works coherently to support the overall objectives of this organisation
2. causes us to waste resources on unproductive activities
3. gives people conflicting objectives so that they end up working at cross-purposes
4. encourages people to challenge outmoded traditions/practices/sacred cows
5. is flexible enough to allow us to respond quickly to changes in our markets

6. evolves rapidly in response to shifts in our business priorities

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Table 1
Interview periods by country

Country	First interview	Last interview	Period between first and last interview
Australia	August 8 th 2011	August 31 st 2012	Twelve months and twenty-three days
Austria	August 12 2011	September 28th 2012	Thirteen months and fifteen days
Belgium	May 23 rd 2011	August 13th 2012	Fourteen months and twenty-one days
Canada	October 7 th 2011	September 27th 2012	Twelve months
Denmark	October 14 th 2011	March 21 st 2013	Seventeen months and seven days
Finland	November 18th 2009	November 29th 2010	Twelve months and eleven days
Germany	July 20 th 2011	March 30 th 2012	Nine months and ten days
Italy	September 15 th 2011	March 20th 2013	Eighteen months and five days
Norway	September 15 th 2011	April 2 nd 2013	Eighteen months and eighteen days
Poland	June 22 nd 2012	November 2 nd 2012	Four months and eleven days
Sweden	November 15 th 2010	May 15 th 2012	Eighteen months

Table 2
Distribution of firms by country, sector and size

Country	Respondents contacted	Sample size	# employees		Industry		
			< 1000	> 1000	Manufacturing	Services	Wholesale
Australia		50	35	15	25	20	5
Austria	223	51	33	18	29	20	2
Belgium	113	50	37	13	30	17	3
Canada	200	52	25	27	29	21	2
Denmark	163	120	72	48	56	45	19
Finland	183	96	46	50	34	38	24
Germany	392	87	56	31	46	33	8
Italy		63	45	18	40	18	5
Norway	87	68	49	19	28	31	9
Poland	161	50	32	18	27	15	8
Sweden		120	76	44	38	61	21
Total		807	506	301	374	319	104

Table 3**Position and number of interviewees**

Chief executive officer (CEO)	250	31%
Chief financial officer	305	38%
Chief operation officer	47	6%
Other	191	24%
Not applicable	14	1%
Total	807	100%

Table 4
Factor analysis of MC effectiveness

	1	2
Works coherently to support overall objectives	0.426	-0.415
Causes us to waste resources on unproductive activities	-0.180	0.651
Gives people conflicting objectives	-0.162	0.759
Encourages people to challenge outmoded practices	0.504	-0.040
Is flexible enough to respond quickly to changes	0.834	-0.303
Evolves rapidly in response to shifts in priorities	0.701	-0.231
Eigenvalues	2.383	1.374
% of variance	39.71%	22.89%
Total variance explained		62.60%

Table 5
Descriptive statistics and correlations

	Mean	Std. dev.	1	2	3	4	5	6	7	8	9	10
1. PSPENDS	0.37	0.48										
2. PSPMEANS	0.53	0.50	0.66									
3. PSPBOTH	0.36	0.48	0.97	0.70								
4. PAPENDS	0.76	0.43	0.17	0.13	0.18							
5. PAPMEANS	0.89	0.31	0.13	0.23	0.14	0.53						
6. PAPBOTH	0.74	0.44	0.17	0.14	0.18	0.97	0.60					
7. ENVUNC	3.67	0.82	-0.10	-0.11	-0.10	0.04	-0.01	0.04				
8. SIZELN	4.34	1.49	0.03	0.05	0.03	0.08	0.06	0.07	0.04			
9. INNOV	6.60	1.17	0.08	0.08	0.08	0.03	0.10	0.03	0.02	0.07		
10. CULTURE	0.66	0.47	-0.05	0.01	-0.05	-0.02	0.10	-0.01	-0.04	-0.20	0.03	
11. MCEFFECT	4.87	0.94	0.06	0.09	0.07	0.07	0.08	0.07	-0.15	0.14	0.01	0.05

STRATPLAN dummy variable taking a value of 1 if subordinates are involved in strategic planning (ends, means, both), 0 otherwise; ACTIONPLAN dummy variable taking a value of 1 if subordinates are involved in action planning (ends, means, both), 0 otherwise; ENVUNC measure of environmental uncertainty; SIZELN natural logarithm of the number of full time employees in the firm; INNOV measure of the emphasis on product innovation; CULTURE dummy variable taking a value of 1 if the firm is located in Germany, Austria, Finland, Norway or Sweden, 0 otherwise; MCEFFECT management control effectiveness.

Table 6

Regression results management control effectiveness on participation in strategic planning and action planning

	Participation in ends				Participation in means				Participation in both ends and means								
	Model 1a		Model 1b		Model 1c		Model 2a		Model 2b		Model 2c		Model 3a		Model 3b		Model 3c
	Beta	t-value	Beta	t-value	Beta	t-value	Beta	t-value	Beta	t-value	Beta	t-value	Beta	t-value	Beta	t-value	Beta
PSP	0.074	1.34	-0.105	1.01	0.123	1.00	0.098	2.44**	0.146	1.45*	0.261	0.82	0.083	1.59*	-0.059	0.56	0.147
PAP	0.128	1.70*	0.397	4.55**	0.435	4.72**	0.153	1.12	0.425	3.65**	0.452	3.24**	0.116	1.48*	0.317	2.93**	0.351
PSP*PAP					-0.262	2.52**					-0.129	0.40					-0.232
ENVUNC	-0.178	3.30**	-0.153	1.36	-0.149	1.35	-0.178	3.29**	-0.142	1.41	-0.142	1.47	-0.178	3.32**	-0.147	1.35	-0.145
SIZELN	-0.002	0.05	0.165	2.95**	0.164	3.19**	-0.002	0.15	0.040	0.52	0.045	0.58	-0.002	0.05	0.136	2.13*	0.137
INNOV	0.099	4.23**	0.138	2.34**	0.135	2.23*	0.099	4.15**	0.154	2.01*	0.151	1.87*	0.100	4.17**	0.126	1.90*	0.122
CULTURE	0.159	3.18**	0.338	2.80**	0.304	2.46**	0.159	2.98**	0.639	5.12**	0.633	5.30**	0.158	3.09**	0.274	2.37**	0.249
PSP*ENVUNC			0.112	1.90*	0.120	2.13*			0.051	0.70	0.050	0.70			0.118	1.98*	0.122
PSP*SIZELN			-0.080	1.27	-0.077	1.17			-0.088	0.55	-0.030	0.51			-0.086	1.36	-0.081
PSP*INNOV			-0.021	0.46	-0.021	0.42			-0.075	1.91*	-0.088	1.87*			-0.021	0.48	-0.022
PSP*CULTURE			0.265	1.79	0.233	1.58			0.061	0.58	-0.070	0.54			0.216	1.53	0.190
PAP*ENVUNC			-0.091	0.79	-0.101	0.90			-0.033	0.53	-0.060	0.53			-0.098	0.86	-0.105
PAP*SIZELN			-0.189	2.89**	-0.187	3.17**			-0.033	0.37	-0.040	0.47			-0.152	2.06*	-0.154
PAP*INNOV			-0.048	0.98	-0.045	0.87			-0.013	0.17	-0.009	0.12			-0.031	0.48	-0.026
PAP*CULTURE			-0.386	2.81**	-0.344	2.50**			-0.529	3.35**	-0.525	3.40**			-0.286	1.94*	-0.254
n	770		770		770		770		770		770		770		770		770
R-Square	5.74%		8.44%		8.69%		5.82%		7.34%		7.37%		5.73%		7.73%		9.08%

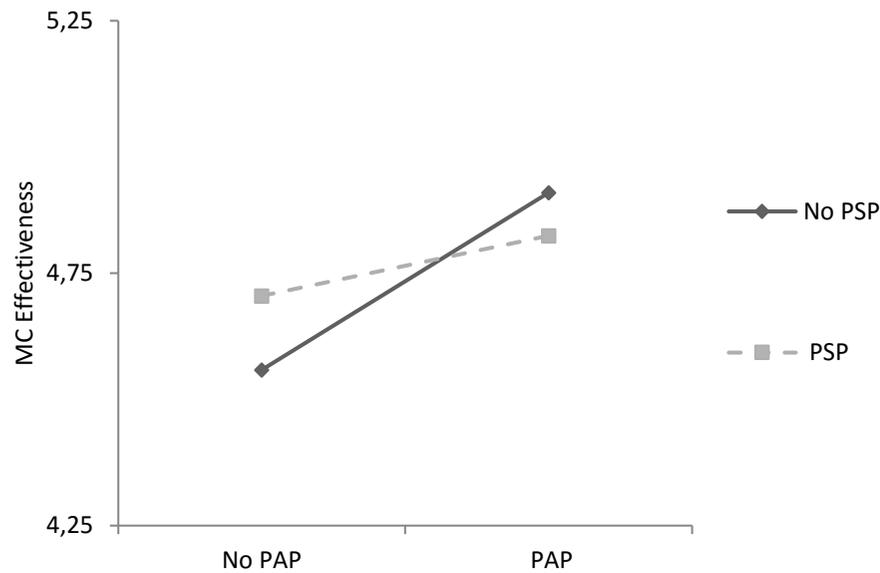
*, **, *** significant at $p < 0.1$, $p < 0.05$, $p < 0.01$ (hypothesized associations 1-tailed, otherwise 2-tailed)

Regressions with robust standard errors clustered by industry.

PSP dummy variable taking a value of 1 if subordinates are involved in strategic planning (PSPENDS, PSPMEANS, PSPBOTH), 0 otherwise; PAP dummy variable taking a value of 1 if subordinates are involved in action planning (PAPENDS, PAPMEANS, PAPBOTH), 0 otherwise; ENVUNC measure of environmental uncertainty; SIZE natural logarithm of the number of full time employees in the firm; INNOV measure of the emphasis on product innovation; CULTURE dummy variable taking a value of 1 if the firm is located in Germany, Austria, Finland, Norway or Sweden, 0 otherwise.

Figure 1

Simple slope of interaction between PSP and PAP (Model 3c)



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