



CIMA

Chartered Institute of
Management Accountants

Management Control Systems as a package

Preliminary findings in Germany

Volume 13 | Issue 2

ESCP
EUROPE



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Key findings

- Long term planning cycle (> 10 years) rarely executed
- No influence of environmental complexity or intensity on short-term planning
- Budgetary systems and extended performance measurement systems used similarly
- Customer and industry understanding as prominent success factor
- Strongest emphasis on short-term planning as well as performance measurement and evaluation

Introduction

The concept of management control systems (MCS) operating as a package is not a new one. Over the last decades, there have been regular calls to study this phenomenon (Chenhall, 2007) and subsequent MCS frameworks have followed (Ferreira & Otley, 2009; Flamholtz, 1983; Flamholtz et al., 1985; Malmi & Brown, 2008; Merchant & van der Stede, 2007; Otley, 1980; Simons, 1995). The existing frameworks provide insights into what constitutes an MCS package, but they do not address why particular management control elements should be expected to occur together and how they are or should be linked to each other. Thus, the MCS package idea is an uncharted area of study.

“Those systems, rules, practices, values and other activities management put in place in order to direct employee behaviour should be called management controls. If these are complete systems, as opposed to a simple rule (for example not to travel in business class), then they should be called management control systems” (Malmi & Brown, 2008, p. 290). The main constituents of the MCS framework comprise planning, cybernetic controls, reward and compensation, administrative and cultural controls. Cybernetic controls comprise four types, budgets, financial and non-financial performance measures and hybrids. The MCS comprises several mechanisms, processes and designs an organization and their managers can engage to ensure that employees behave towards achieving the organizational goals. MCS packages “can be seen as a collection or set of controls and control systems” (Malmi & Brown, 2008, p. 287).

Despite the importance of MCS for all organizations, research has targeted explicit theorizing or large empirical studies on this topic very scarcely (e.g. Abernethy & Brownell, 1997; Alvesson & Kärreman, 2004; Chenhall, 2007; Davila, 2005). Previous MCS research studied single themes or control elements, thus, examined MCS in isolation (Chenhall, 2007). But in business reality “it is clear that organizations rely on different combinations of control mechanisms in any given setting, yet virtually nothing is known about how the effects of any one control are governed by the level of simultaneous reliance on other forms” (Abernethy & Brownell, 1997, p. 246). As a consequence, Management Control theory should

shed light on the functioning of these configurations of control devices, and it should be able to address these control packages in their entirety in terms of differential functionality (Speklé, 2001). This research project is based on empirical data collected from top managers in Germany from a representative sample of companies.

Understanding the outcomes of the various MCS elements will help us to better focus the analysis of MCS packages. In attempting to come up with different MCS configurations, this study explores the various MCS elements and sheds some light on the interplays and links of different controls. Additionally, the impact of various contingent factors is tested. As contingency theory states, there is no universal applicable control system with universal validity to all organizations in all settings. In contrast, the specific surroundings and external factors an organization is exposed to shape the system.

Objectives

The main objectives of the research project are defined as follows:

- to shed light on how organizations in Germany configure their MCS
- to show the interrelationship of MCS elements

Data collection and sampling

87 randomly chosen organizations collaborated in this study (see Table 1 for respondents' background information). All organizations were generated from a large company database with a minimum of 250 employees. We applied the size criterion of 1,000 employees to divide the population into subpopulations of small and large companies. All organizations were distinguished by broad industry categories of manufacturing, services and trade (retail and wholesale). Main respondents were CEOs and managing directors of SBUs or stand-alone companies. Participating respondents were approached with a questionnaire survey in a face-to-face interaction to maintain the interviewees' motivation given the lengthy questionnaire and to ensure the consistent understanding of the survey questions. The questionnaire covered a holistic set of questions such as aspects of strategic and short-term planning, performance measurement and evaluation, administrative structures and cultural controls. The questionnaire was developed in English in the overall project team consisting of 25 researchers from eleven countries and then translated into German and pilot tested with a small group of management consultants, academics, and executives.

Main findings and their implications for practical application

The main findings focus on the differential functionality of various control elements in Germany. Additionally, some linkages and inter-relationships of MCS will be addressed. The main findings of the design and use of MCS across German firms will be highlighted below.

Strategic Planning

Companies normally follow a 3-5 year strategic planning cycle

As can be inferred from the graph below which shows the distribution of interviewed companies according to their strategic planning period, 87.3 percent of the companies follow a three- to five-year strategic planning cycle with a mean of 4.0 years. Only 2 out of 87 companies perform a real long-term strategic plan of 10 years or longer which can be explained by facing environmental turbulences and the yearly reaction towards new situations (see yearly revision of strategic objectives) which makes a real long-term horizon obsolete.

Strategic planning period [in %]

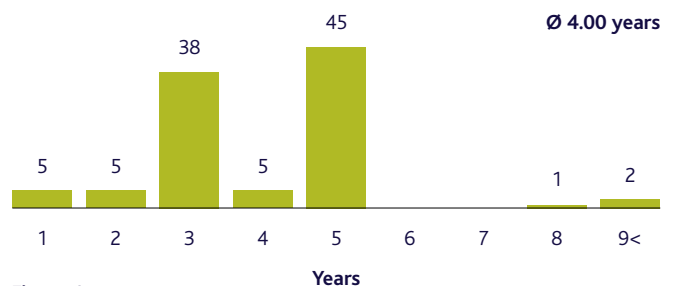


Figure 1

Companies concentrate on a mix of qualitative and quantitative ends in strategic planning

With regard to their strategic planning phase companies highly specify both qualitative and quantitative ends with an average score of 5.38 and 4.95 respectively. Yet, the difference between these scores is highly significant, indicating that companies put a higher emphasis on qualitative ends (e. g., vision, strategic intent, new markets, new technologies) than on quantitative objectives (e.g., EVA, ROCE, turnover, market share, brand value). However, financial objectives are more relevant for the short-term period.

Yearly revision of strategic objectives

On average, companies review their strategy with regard to their objectives three times a year and revise them every eight months. With regard to the strategic means, a review generally takes place quarterly leading to a revision almost three times a year.

Top management team is predominant in formation of strategic ends and means

In over 60 percent of the firms with several strategic business units (SBUs) (N=40) top management of the SBU determines the formation of the SBU's strategic ends and means alone or together with corporate management. In 35 percent of these companies, managers one level below SBU top management participate, too. In only 6 percent of the companies, lower hierarchy levels participate in the formation of strategic objectives. When it comes to the strategic means, the involvement of lower hierarchy levels slightly increases but is also rarely incorporating two levels or more below top management. Therefore it can be concluded that top management is foremost among those persons elaborating the strategic ends and means.

In standalone firms or firms consisting of only one SBU (N=47) their top management is solely responsible for the formation of strategic ends in more than 60 percent of the cases. Yet, with regard to the determination of strategic means managers working one level below top management are involved in 48 percent of the cases.

Short-term planning

Translation of strategic ends and means into short-term action plans is mostly top-down

11.5 percent of the companies decide short-term action plans at the top and pass them to lower levels for implementation. The majority (51.7%) defines important areas of action at the top and let their subordinates develop specific action plans. A fifth of companies (20.7%) develop these action plans in intense negotiations within planning guidelines given from the top. In only 16 percent of the firms subordinates play a major role in translating strategic ends and means in short term action plans. These findings are corroborated with regard to how the companies set short-

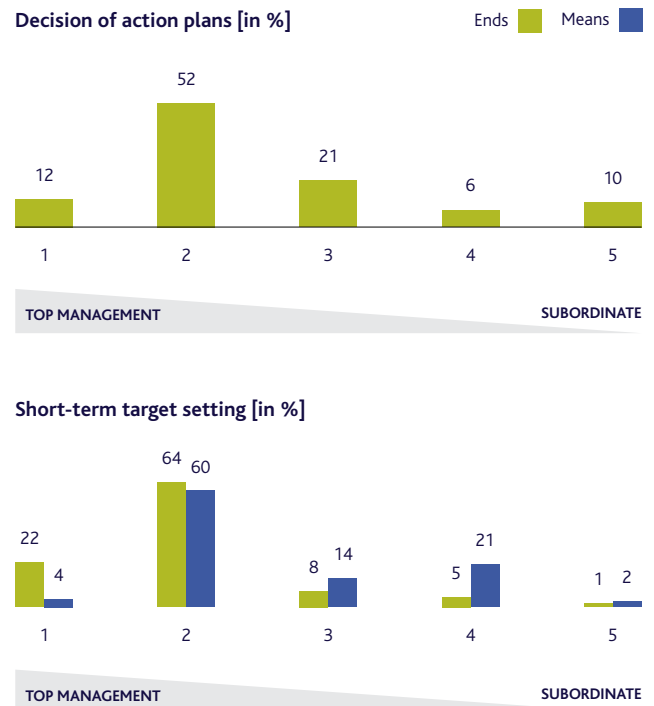


Figure 2

term targets in SBUs. With regard to ends, in almost 90 percent (86.2%) of the cases top management sets targets and passes them to subordinates or top management sets targets, but revises them in negotiations with subordinates. Regarding the means dimension this picture is less strict, yet remains quite top down: Here, the aforementioned categories determine 62 percent of the cases. Remarkably, in 20.7 percent of the cases subordinates set targets autonomously, but are subject to top management acceptance. These results are summarized in the graph below. The ascending numbers labelling the bars indicate a growing discretion and leeway of subordinates with regard to deciding action plans and short-term target setting (which corresponds with less influence of top management regarding these areas).

Frequency of short-term planning updates is diverse – no influence of environmental complexity or intensity

Looking at the frequency of short-term planning updates, e.g. updates in the forecast, more than half of the companies (55.2%) do not revise their short-term targets during the year. A quarter of the companies update their performance

targets biannually (12.6%) or quarterly (14.9%), ten percent follow a monthly cycle. Action plans and resource commitments are updated more frequently with more than seventy percent (72.4%) of the firms updating their action plans quarterly, monthly or even on a weekly basis. Regarding resource commitments the numbers are quite similar with 67.4 percent of the firms revising them quarterly or more frequently.

Interestingly, there is no relationship between the frequency of short-term planning regarding performance targets, action plans or resource commitments updates and the complexity of business or the intensity of competition.

Reporting puts highest emphasis on progress of activities, human resource requirements and financial resource requirements

Top management attributes the highest importance in the short-term plans they receive to the progress schedule to be reported. Almost 80 percent of the companies deem information on progress in activities in the subordinates' short term action plans as important or very important. More than half of the firms (55.2%) think that information on financial resource requirements is important or very important in these plans. In 56.3 percent of all cases information on human resource requirements is deemed valuable in this sense.

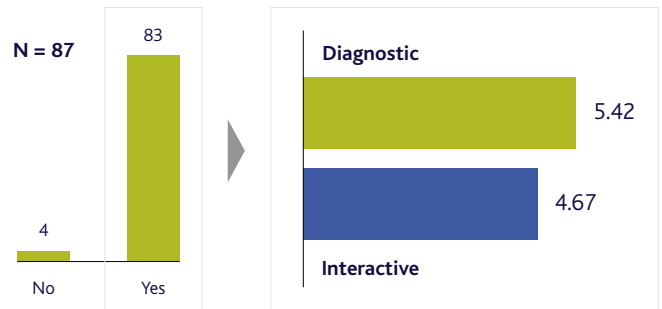
Performance Measurement

Budgetary systems and extended performance measurement systems are used similar

95 percent of the firms employ budgetary systems to steer their company. Here, firms put more emphasis on the diagnostic control systems (i.e. identifying critical performance variables, setting targets, monitoring the progress and correcting deviations) (M=5.42) than on the interactive purpose (i.e. agendas, dialogue, continuous challenge of data) (M=4.67). Extended performance measurement systems (i.e. balanced scorecard, beyond budgeting movements) are executed by nearly 84 percent of the firms. Here, firms put more emphasis on the diagnostic control systems than on the interactive purpose as well, but the difference is not that much as with regard to budgetary systems (M=5.44 and 4.82 respectively).

To guide and control subordinate behaviour, firms use ...

... budgetary systems [Ø]



... budgetary systems [Ø]

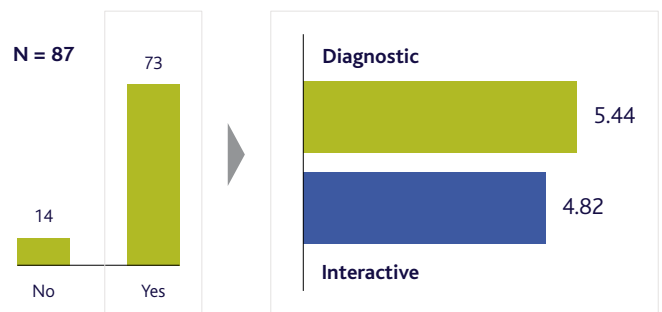


Figure 3

1 Low

High 7

With regard to these firms which employ both budgetary and performance measurement systems to guide and control subordinate behaviour (N=70) we observed for both diagnostic use and interactive use strong similarities. Comparing diagnostic and interactive use, firms put more emphasis on the diagnostic purpose (M=5.54 and M=5.43) than on the interactive purpose (M=4.76 and M=4.85).

Performance Evaluation

Performance evaluation is based more on financial measures

On average, SBU's top management bases subordinates'

performance evaluation on both financial and non-financial measures. Performance evaluation on financial measures is ranked significantly higher with a score of 5.25 versus a score of 4.80 for non-financial measures. Thus both measures are deemed important with regard to subordinates' performance evaluation, yet financial measures are significantly more important.

Evaluation mostly takes place annually

Formalized leadership as well as business performance evaluations for determining compensation or providing individual feedback take place annually in two thirds of the firms. On average, leadership performance evaluations are conducted every nine months and business performance evaluations take place every five months.

Rewards and compensation

Companies use a mix of financial and non-financial measures

Subordinates' financial rewards are based on a quite balanced mix of financial and non-financial measures with an average percentage of 55.9 and 44.1 respectively.

In general, companies put almost the same emphasis on financial measures (e.g. revenue, profit, cost, ROI and cash flow) as on non-financial measures (e.g. customer/market, employee/team, operational, quality, alliances/supplier relations, innovation, social and environment, individual objectives) related to their subordinates' commitment and direction. Yet with regard to motivation, non-financial rewards are deemed more important (M=5.34 vs. M=4.76).

This finding slightly differs from interviewees' statements about performance evaluation. 57.5 percent claimed that their subordinates' performance evaluation was based on financial measure to a high or very high extent, whereas only 41.4 percent declared this being the case for non-financial measures.

39 percent of the companies use only one form of measurement (18.3% include only financial and 20.7% consider only non-financial measures). In 10.3 percent of the investigated cases subordinates' financial rewards are based on an equal share of financial and non-financial measures.

Profit (e.g. EBIT, profit margin, gross margin) is the performance evaluation metric that dominates the financial measures. 37.8 percent use this measure to determine the subordinates' financial rewards. Revenue (on average 13.9%) comes second with a significantly lower importance as a financial measure. Cost, cash flow or figures as ROE/ROA/ROCE are rarely used (4.6%) as a criterion to determine financial rewards. In 55.2 percent of the companies, individual objectives (e.g. fulfillment of specific tasks or projects) are taken into account to determine subordinates' financial rewards. The share of individual objectives in all performance evaluation metrics averages 27.5 percent. 8 percent of the firms use individual objectives as the only performance evaluation metric for their subordinates. Other metrics include operational figures, quality data, customer and market information.

Organizational structure and processes

Highest degree of influence for top management team for strategic decisions as well as compensation and reward policies

Top management degree of influence is highest for establishing new businesses, compensation and reward policies within the firm. This is followed by ongoing financing issues, personnel decisions and new investments. An equal influence among top management and their subordinates is placed on operational work (e.g. choosing and contracting suppliers, customers, developing new products), replacement investments and work processes as well as the prioritization of tasks.

Organization and Environment

Customer and industry understanding as prominent success factor, low price rarely relevant

The critical success factor for the companies is a thorough understanding of their customers and the industry (M=5.89). Considerably lower extent is given for the next most important factors, namely offering of complementary products (M=5.01), market share of the company's product/service (M=4.63) and product innovations (M=4.56). Interestingly, even though innovation ranks among the most important success factors of the companies, innovation is not considered in any of the non-financial performance

measures that determine the subordinates' financial reward. In general, German companies do not compete by price. 61.6 percent attribute none or almost no agreement with low price competitiveness. Only every tenth company places high emphasis on low prices.

Customer relations are of paramount importance

The most relevant performance areas are customer relations (M=6.37), financial results (M=6.17) and quality (M=6.02). Environmental performance, lobbying and strategic alliances are currently the least important performance areas.

Major changes in MCS for every third organization

One third of the companies went through major changes in their MCS over the last three years, almost two thirds faced minor changes and a minority (6%) had no changes.

Guiding and directing subordinates' behaviour

Strongest emphasis on short-term planning as well as performance measurement and evaluation

Companies rank short-term planning as the most important tool for guiding and directing behaviour, followed by performance measurement and evaluation. Rewards/compensation and strategic planning are least important (See table 1). Combining these management control

elements with other alternative leadership issues, top management places the greatest emphasis (33%) on core control activities (e.g. strategic and short-term planning, performance measurement and evaluation, and rewarding). Administrative structure (management groups, reporting lines, rules, procedures), organization culture (mission, vision, values) and leading by own example are 15-18 percent. In contrast, autocratic command and direct control as well as participative coaching are of least importance (each around 10%).

Analysis on group variances along size, industry classification and ownership structure

Strikingly, only occasional occurrences of group differences

Interestingly, an analysis on group variances stratifying the sample around size generates only a few significant group differences. Analysis of all items presented in table 2 and 3 showed only the following significant differences: Small (< 1,000 employees) and large (> 1,000 employees) firms differ significantly with regard to their design of quantitative objectives (Large: M=5.30, Small: M= 4.66, $p < 0.05$), the importance for short-term plans containing information about progress steps (Large: M=6.40, Small: M=5.68, $p < 0.01$), financial resource requirements (Large: M =5.68,

Importance	N	MIN	MAX	MEAN	SD
Short-term planning	87	2	7	5.71	1.11
Performance measurement and evaluation	87	2	7	5.57	1.25
Management processes	87	2	7	5.32	1.17
Values and organizational culture	87	2	7	5.32	1.28
Rules and procedures	87	1	7	5.28	1.26
Organization design	87	2	7	5.08	1.21
Rewards and compensation	87	1	7	4.97	1.45
Strategic planning	87	1	7	4.56	1.80

Table 1

Small: $M=5.02$, $p<0.05$) and the degree of control for operating expenditures (Large: $M=4.53$, Small: $M=3.81$, $p<0.05$). In conclusion, large firms put more emphasis on quantifying their strategic objectives than small firms. Larger firms require more information on progress activities and financial resources than small firms. Additionally large firms control their operating cost more strictly than the smaller ones. In smaller firms additional budgets are more common.

In contrast to the contingency-based approach, we observed no significant differences for broad industry classification (manufacturing, services, trade) along extent and importance of MCS elements presented in appendix 2 and 3. There seems to be rather an industry specific (e.g. automotive, pharmaceutical, tourism, etc.) handling in the design and use of MCS.

In terms of ownership differences among family or investor-ruled firms, state or community-ruled companies and the remaining classes, we observed the following significant differences: Family firms are less rigorous ($p<0.05$) on documentation ($M=4.53$) than investors ($M=5.15$) and government-ruled companies ($M=6.00$). Family-owned ($M=5.51$) and investor-owned ($M=5.76$) firms put more emphasis ($p<0.01$) on the diagnostic purpose of control systems (i.e. feedback systems to guarantee goal attainment) than other ownership types ($M=4.65$). Family-owned firms

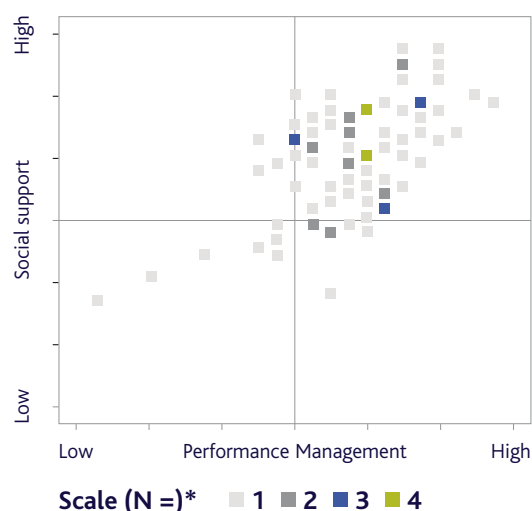
put less weight ($p<0.01$) in their strategic planning process on specifying programs and resources ($M=4.16$) than non-family firms ($M=5.23$). The importance for short-term plans containing information about progress steps is higher ($p<0.05$) for investor-ruled firms ($M=6.48$) compared to the other ownership types ($M=5.77-6.00$).

Preliminary analysis on inter-relationships between MCS elements

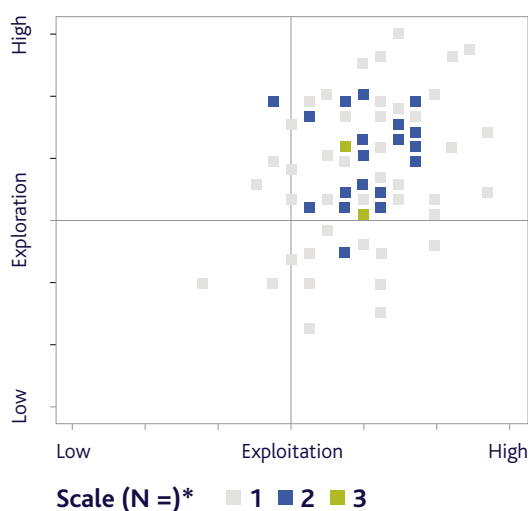
MCS package ambidexterity

Appendix 4 shows that German firms are highly contextually (social support vs. performance management) and organizationally (exploration vs. exploitation) ambidextrous combine both a high demand of performance and a high degree of social support and on the other hand firms manage to combine both exploration (use of tacit knowledge and innovative capability) and exploitation (efficient adaptation of this knowledge to the organization) of resources. This result can also be observed in the respective scatter plots. According to Gibson's and Birkinshaw's (2004) as well as Lubatkin's et al. (2006) classification, most of the German firms (over 70%) which appear in the chart in the upper-right quadrant, operate in a high performance context and pursue both exploration and exploitation. The correlation between contextual and organizational ambidexterity across the 87 SBUs is highly significant ($r=0.39$, $p<0.01$).

Social support vs. performance management



Exploration vs. Exploitation



*Note: N is the amount of firms with the same coordinates represented by one coloured square.

Figure 4

Conclusions

The implications of this paper can be summarized as follows:

The use and design of MCS are a fascinating topic and of high relevance for top management in guiding and directing the behaviour of their subordinates. There is a body of evidence that could enable practitioners to see how their organization compares to a robustly researched broad sample of companies. It was found that companies put much effort into short-term planning and cybernetic controls. Going into detail and entangling the importance, timing, extent and participation effects have to follow these first preliminary steps. It is evident that there needs to be more specific investigation into the interrelationships of these MCS elements. Clarifying the underlying causes and links of the single MCS elements will be an important endeavour.

Further analysis with more advanced statistical tools and a larger data set combined with a solid theoretical framework is indispensable. This study probably offers more questions than solutions stressing the ongoing effort to explore this topic.

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Acknowledgements

The authors would like to thank CIMA's General Charitable Trust for funding this project. We are grateful to the managers within the organizations who gave their precious time to our project and shared the design and use of their management control systems with us. Special thanks are also extended to Stefanie Friedemann, Anne Kollien and Georg Schmidtgen for their valuable contribution to the coding and data entry.

Abstract

The concept of management control systems (MCS) operating as a package is of great importance for executives. To gain more understanding of the research matter, 87 respondents who were CEOs or managing directors of randomly selected German companies have been interviewed with a standardised questionnaire covering a broad set of MCS elements. Initial analysis sheds light on the question how organizations in Germany configure their MCS and guide and direct their subordinates. Thus the report contains first descriptive results related to themes as strategic and short-term planning, budgeting, performance measurement and evaluation as well as organizational and cultural controls. It was found that companies devote most effort into short-term planning as well as performance measurement and evaluation. Thus, further insights in companies' use and design of MCS are of high relevance for top managers in guiding and directing the behaviour of their subordinates. There is a body of evidence that could enable practitioners to see how their organization compares to a robustly researched broad sample of companies.

Appendix 1. Respondents' background information

Function	
CEO	38
CFO	7
Other management	32
	<hr/>
	87
Highest degree	
High school	6
Bachelor	1
Master	62
Ph.D.	18
	<hr/>
	87
Field of study (for bachelor degree or higher)	
Business/Management/Economics	58
Law	1
Engineering	14
Humanities	3
Natural sciences	3
Others	2
	<hr/>
	81
Tenure (in years)	
MIN	1
MAX	39
MEAN	11
SD	10

Appendix 2. Extent ^a

Section A. Strategic Planning Content and Process

A3. Extent of ends/means ^b	N	MIN	MAX	MEAN	SD
Qualitative	87	1	7	5.38	1.42
Quantitative	87	1	7	4.95	1.53
Detailed (ends)	87	1	7	4.57	1.54
Accurate (ends)	87	1	7	4.41	1.49
Documented (ends)	87	1	7	4.99	1.66
Detailed (means)	87	1	7	3.98	1.52
Accurate (means)	87	1	7	3.89	1.40
Documented (means)	87	1	7	4.07	1.72

Section C. Performance Measurement and Evaluation ^c

C1. Extent of control (1: flexible, 6: set fixed)	N	MIN	MAX	MEAN	SD
OPEX	87	1	6	4.14	1.38
CAPEX	87	1	6	4.75	1.14

C2. Use of budgetary systems	N	MIN	MAX	MEAN	SD
Diagnostic	83	1	7	5.42	1.11
Interactive	83	1	7	4.67	1.15

C2. Use of perform. measurement systems	N	MIN	MAX	MEAN	SD
Diagnostic	73	2	7	5.44	1.08
Interactive	73	2	7	4.82	1.07

^a EXTENT ranges from 1 [Not at all] to 7 [Very high extent].

^b Based on the following survey question: *Please indicate to what extent your SBU's strategic planning produces ends and means that are a. Qualitative (e.g., vision, strategic intent, new markets, new technologies), b. Quantitative (e.g. EVA, ROCE, turnover, market share, brand value), c. Detailed (e.g. it is clearly outlined what to aim at or how to proceed), d. Accurate (e.g. achievement / implementation can be determined with confidence), e. Documented (i.e. written down).*

^c "N" varies since four companies do not use budgetary systems and 14 firms do not use extended performance measurement systems. Based on the following survey questions: *Please indicate how SBU top management seeks to control OPEX and CAPEX of the units managed by subordinates. (C1); To what extent SBU top management use budgets and/or performance measurement systems for the following: a. Identify critical performance variables (i.e. factors indicating progress towards strategic objectives), b. Set targets for critical performance variables, c. Monitor progress towards and to correct deviations from preset performance targets, (a-c: diagnostic use), d. Provide a recurring and frequent agenda for top management activities, e. Provide a recurring and frequent agenda for subordinate activities, f. Enable continual challenge of underlying data, assumptions and action plans with subordinates, g. Focus attention on strategic uncertainties (i.e. threats and opportunities), h. Encourage and facilitate dialogue and information sharing with subordinates, (d-h: interactive use) (C2).*

Appendix 3. Importance ^a

Section A. Strategic Planning Content and Process ^b

A2. Weight in strategic planning in SBU on	N	MIN	MAX	MEAN	SD
Objectives	87	1	7	5.79	1.34
Competitive advantages	87	1	7	4.97	1.49
Programs and resources	87	1	7	4.70	1.53

Section B. Short-term Planning Content and Process ^c

B4. Information in short-term plans about	N	MIN	MAX	MEAN	SD
Progress in activities	87	1	7	6.01	0.99
Coordinating activities	87	1	7	4.86	1.53
Formation of project teams	87	1	7	5.10	1.54
Financial resource requirements	87	1	7	5.32	1.56
Human resource requirements	87	1	7	5.43	1.48
Skills and competency requirements	87	1	7	4.74	1.56
IT-resource requirements	87	1	7	4.45	1.74

Section C. Performance Measurement and Evaluation ^d

C5. Purposes of performance evaluation	N	MIN	MAX	MEAN	SD
Feedback for learning	87	1	7	5.63	1.28
Determining subordinate compensation	87	1	7	4.93	1.51
Directing attention	87	2	7	5.75	0.94

Section D. Rewards and compensation ^e

D4. Purposes of (non-)financial rewarding	N	MIN	MAX	MEAN	SD
Committing subordinates (f)	87	1	7	4.86	1.65
Motivating subordinates (f)	87	1	7	4.76	1.60
Directing attention (f)	87	1	7	4.41	1.82
Committing subordinates (nf)	87	1	7	4.82	1.65
Motivating subordinates (nf)	87	1	7	5.34	1.58
Directing attention (nf)	87	1	7	4.63	1.81

^a IMPORTANCE ranges from 1 [Not at all] to 7 [Very important].

^b Based on the following survey question: *Please indicate how much weight your SBU's strategic planning puts on specifying...*

^c Based on the following survey question: *Please indicate how important it is that subordinates' short-term plans contain information about...*

^d Based on the following survey question: *Please indicate how important the following purposes of performance evaluation are in your SBU:*

^e Based on the following survey question: *How important are the following purposes of financial and non-financial rewarding in your SBU:*

Appendix 4. Correlation of selected MCS package elements

Correlation Table [Pearson's r, N=87]

	Performance Management	Social Support	Exploitation	Exploration
Performance management				
Correlation	1	0.593	0.407	0.322
Significance (two-tailed)		<0.001	<0.001	0.002
Social Support				
Correlation	0.593	1	0.283	0.147
Significance (two-tailed)	<0.001		0.008	0.175
Exploitation				
Correlation	0.407	0.283	1	0.287
Significance (two-tailed)	<0.001	0.008		0.007
Exploration				
Correlation	0.322	0.147	0.287	1
Significance (two-tailed)	0.002	0.175	0.007	

ISSN 1744-7038 (Online)

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