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Hrsg.: Utz Schäffer

Oliver Gediehn

# Management Accounting Practice and Strategic Behavior

## On the Dysfunctional Effect of Short-Term Budgetary Goals on Managerial Long-Term Growth Orientation

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RESEARCH

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With a foreword by Professor Dr. Utz Schäffer

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# Foreword

The starting point of this impressive piece of work by Oliver Gediehn is the much-cited conflict between the striving for short-term profitability and the pursuit of long-term growth of a company. The issue of how the operational dominance of annual or even quarterly financial targets and the "short-termism" of the capital markets impact innovation, adaptation, and growth is largely unresolved. In this context, research pays special attention to the role of management accounting or "Controlling". Most researchers assume a functional effect of management accounting practices and systems on short-term goal achievement but a dysfunctional, or at least problematic, effect on strategic management. This holds true for both literature on "economic short-termism" as well as for studies in the field of "Reliance on Accounting Performance Measures" (RAPM) research. Yet, most of these works are normative in nature or based on anecdotal evidence only. Large empirical studies addressing the issue are rare and inconclusive. As a result, Van der Stede (2000) calls for more empirical research prompting Oliver Gediehn's first research question: "Does RAPM have a dysfunctional effect on managerial long-term growth orientation?"

However, Oliver Gediehn does not confine his dissertation thesis to this rather narrow research path. Rather, he places himself in the tradition of Hopwood (1983) who calls for management accounting to be analyzed "in the context in which it operates" and takes a research perspective based on Giddens' (1984) Structuration Theory. If one is to apply Hopwood's thoughts properly, the long-term orientation of managers can hardly be explained by management accounting practices alone. This results in Oliver Gediehn's second and third research questions addressing the impact of other organizational practices relative to RAPM.

To answer his three research questions, Oliver Gediehn conducts a large-scale case study at a German technology and services company shaped and influenced both by its founder as well as by a strong engineering and technology mindset. The candidate portrays his case study as a "crucial case setup" which does not aim at rendering generalizable results, but rather tries to falsify the proposed dysfunctional effect of management accounting practices with one crucial case. He therefore chooses a case where such a negative impact of management accounting practices on managerial long-term orientation appears "most likely". In his research, Oliver Gediehn takes a two-staged approach: First, he conducts 14 semi-structured interviews with various managers at the corporate center and different business units. Second, he launches a questionnaire survey with 832 middle managers from five business units achieving a response rate above 50%. Considering the length of the questionnaire and the timing of the survey just before the end of the budgetary year, the response rate has to be deemed just as impressive as the extensive and close interaction with the company's different management levels.

In conclusion, the survey results indicate the absence of a dysfunctional effect of RAPM on managerial long-term orientation – despite strong anecdotal evidence gathered during the interviews. Furthermore, Oliver Gediehn shows that selected aspects of corporate entrepreneurship and strategy-making are highly relevant for the analyzed relationships and exhibit higher explanatory power for the dependent variables. These other organizational factors – at least within the context of the case study – dominate the functional and dysfunctional effects of RAPM. These results and the positive feedback received from both academia and practitioners prove that Oliver Gediehn's research journey has been worthwhile: He has compiled a dissertation thesis very much worth reading which contributes greatly to our understanding of the interplay of management accounting practices and managerial long-term orientation. I hope it receives a wide readership.

Utz Schäffer

# Preface

Does the emphasis on short-term targets induce myopic management behavior? Well, it at least has a strong "appeal of simplicity". Likewise, few people would strongly oppose that management accounting and especially a rigid budgetary regime tend to play a less favorable, i.e. dysfunctional role in the context of encouraging managerial long-term orientation.

Accordingly, my strong hypothesis going into this research project was that the emphasis on short-term budgetary targets – a pivotal aspect of the slightly clumsy term Reliance on Accounting Performance Measures (RAPM) – is one key barrier to a strong long-term growth orientation of the management at the researched company.

Yet, my findings in this respect were counterintuitive and did not correspond to the dysfunctionality proposition described above. Once more, this research effort proved that it is worthwhile to question or at least test and validate such common beliefs.

The results also show that often reality is not as simplistic as common wisdom might suggest. Inspired by Giddens' Structuration Theory and its application in management accounting research, my approach to analyzing the effects of RAPM was much broader including a deliberate quest for "other organizational factors" in the context of driving or inhibiting long-term orientation and strategic behavior. Eventually, these other factors turned out to be much more important in the context of strategic management behavior rendering management accounting and specifically RAPM as just one driver among many.

The research was accepted as dissertation at the European Business School, Oestrich-Winkel, in August 2008.

A number of people deserve a special mention for their support during the course of this academic journey. In particular, I want to thank

- Prof. Dr. Utz Schäffer for his continuous guidance and support, for being the critical counterpart pushing my research further, and last but not least, for providing me with this exceptional research opportunity.
- Prof. Dr. Dirk Schiereck for taking on the responsibility as my secondary advisor at (very) short notice.
- Our partner organization and especially our two project sponsors without whom we would not have been able to conduct this empirical piece of research. I also want to thank the many company representatives who sacrificed part of their time to share their perspectives during our interviews or in the questionnaire.
- All my colleagues for their valuable input at and around our monthly office days as well as for making us external candidates feel "at home".

- My wife Katy, my daughters Fee and Leela, and my parents for their love, support, and patience throughout these three years.

Oliver Gediehn

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# A Introduction

*"Without continual growth and progress, such words as improvement, achievement, and success have no meaning."*

*Benjamin Franklin*

## 1. Research Issue and Objectives

Achieving sustainable sales growth has recently been among the most important topics for business managers in large corporations. Practitioner journals portrait companies in a "do-or-die struggle"[1] for sustained and profitable growth[2] and explore the sources[3], drivers[4], and processes of growth[5]. The attempt to achieve a favorable long-term sales growth trajectory complements the continuous strive for profitability and operational excellence – and creates a latent conflict between short-term efforts for profitability and long-term concerns for growth.[6]

Academic research mirrors this conflict and its implications in the stream of literature devoted to the balancing of short-term goal achievement and the encouragement of strategic management behavior or, more generally, managerial long-term orientation.[7] While short-term goal achievement relates mostly to the attainment of budgetary targets[8] or financial planning targets, in general, the operationalization of strategic behavior and long-term orientation is manifold. It includes the strive for strategic renewal[9], innovation and adaptation[10], the concern for long-term positioning and growth[11], as well as the pursuit of entrepreneurial initiatives[12].

A prominent topic of this stream of research is the role and relevance of management accounting. To the most part, researchers see current management accounting systems and practices as *functional* with respect to short-term goal achievement but as *dysfunctional* or at least problematic with respect to the encouragement of strategic management behavior. The literature on 'economic short-termism' for example

1 Smit/Thompson/Viguerie (2005), p. 405.
2 Seurat (1999), p. 53; Heffes/Sinnett (2006), p. 36.
3 Oliva (2003), pp. 39-41.
4 Baghai/Smit/Viguerie (2007), pp. 45-48.
5 Stewart (2006), pp. 62-64.
6 Seurat (1999), p. 53.
7 Simons (1995), p. 91; Frow/Marginson/Ogden (2005), p. 270.
8 Frow/Marginson/Ogden (2005), p. 271.
9 Simons (1994), p. 169; Crossan/Berdrow (2003), p. 1087.
10 Simons (1995), p. 92.
11 Heidmann (2008), p. 71.
12 Dent (1990), p. 3.

proposes the short-term focus on "flawed"[13] management (accounting) practices as one potential root cause for myopic management behavior.[14] Similarly, the Reliance on Accounting Performance Measures (RAPM) research stream assigns an excessive short-term focus as dysfunctional effect to the traditional (accounting-based) management control system.[15]

A common characteristic of these two streams of research is the narrow quantitative empirical base. The impact of the allegedly flawed management practices on economic short-termism builds largely on theoretical arguments while the scarce empirical evidence is only circumstantial or anecdotal in nature.[16] The various dysfunctional consequences of RAPM including motivational aspects of job satisfaction or job-related tension as well as behavioral aspects such as tactical gaming or data manipulation are subjects of extensive empirical research. Yet, only few studies deal with the particular issue of managerial long-term orientation[17] and those that do, fail to deliver conclusive results due to conceptual and methodological limitations.[18]

In summary, the existing management accounting literature "is still inconclusive"[19] to answer as to whether current management accounting practices and in particular the dominant RAPM practice have a dysfunctional effect on managerial long-term orientation. Consequently, the study responds to Van der Stede's (2000, p. 120) call for future research on this topic and aims to render a more definite answer on the existence of the dysfunctional effect ideally reconciling the previous anecdotal and quantitative empirical evidence. Reflecting the currently prevailing concern for growth in practice, the study explicitly addresses long-term *growth* orientation as an element of strategic management behavior and the more inclusive notion of managerial long-term orientation.

This approach results in the following first research question guiding the study:

- Does RAPM have a dysfunctional effect on managerial long-term growth orientation?

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[13] Laverty (1996), p. 831.
[14] Hayes/Abernathy (1980), p. 70; Laverty (1996), pp. 831-832.
[15] Van der Stede (2000), p. 611; for an overview on the RAPM research stream, cf. Briers/Hirst (1990); Hartmann (2000).
[16] Merchant (1990), p. 297; Laverty (1996), p. 837.
[17] Only 3 of the 28 and 46 studies reviewed by Briers/Hirst (1990) and Hartmann (2000), respectively, explicitly included long-term concerns as dependent variable.
[18] Van der Stede (2001), p. 120. For the limitations refer to Briers/Hirst (1990), pp. 392-395; Hartmann (2000), pp. 465-469.
[19] Van der Stede (2000), p. 120.

The study is conducted in the tradition of Hopwood's call to study management accounting "in the context in which it operates".[20] It thus acknowledges the fact that research on accounting practices needs to explicitly consider linkages to the other organizational processes and practices as unique contextual variables in particular organizational settings.[21] In line with this research tradition, the study assumes a research perspective that is informed by Anthony Giddens' (1984) Structuration Theory (ST). Macintosh, Roberts, and Scapens have introduced Giddens' ideas into management accounting research as an "alternative avenue for research"[22] that takes into account both technical and interpersonal aspects and, more generally, views management accounting as social practice to be analyzed within its organizational context.[23] As "focused, informative, integrative, and efficient, yet comprehensive"[24] framework for the study of accounting in the particular context in which it operates, Structuration Theory provides a suitable ontological frame of reference to guide this research effort.

Following Hopwood's argument, the balancing of short- and long-term concerns – and therefore also extent of strategic management behavior as organizational outcome – results from the complex interplay of different organizational practices – with management accounting constituting only one of them.[25] The scope of the study is therefore extended beyond the properties of management accounting to include other relevant organizational practices that impact managerial long-term orientation, in general, and a manager's long-term *growth* orientation in particular. The second research question consequently addresses this exploratory research issue:

- Which other organizational practices impact long-term growth orientation?

To determine the theoretical as well as practical relevance of any dysfunctional effect of the RAPM practice, the study finally assesses its impact *relative* to that of the other organizational practices that prove to be influential. The third research question therefore connects the first two research issues:

- How relevant is RAPM with respect to managerial long-term growth orientation considering the other organizational practices?

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[20] Hopwood (1983).
[21] Ibid., pp. 292-293.
[22] Roberts/Scapens (1985), p. 455.
[23] Ibid., pp. 443-444, 453-455; Macintosh/Scapens (1990), pp. 455-456, 474-476.
[24] Macintosh/Scapens (1990), p. 475.
[25] Hopwood (1983), p. 291; Boland (1993), p. 127.

## 2. Plan of the Study

After the introductory Part A, the research report is structured along the three main phases of the research process: First, the establishment of a theoretical foundation and review of previous research (Parts B and C), second, the design and conduct of the empirical research (Parts D, E, and F) and third, the discussion and interpretation of the results and derivation of implications for theory and practice (Part G) (see also Figure 1).

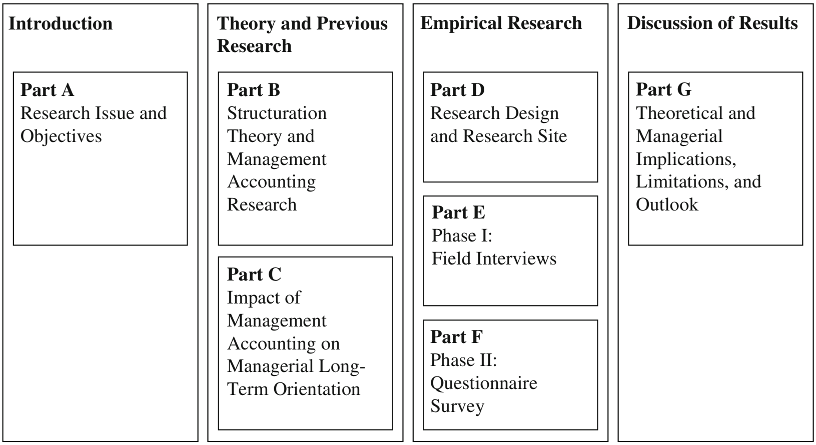


*Figure 1: Plan of the Study*

Part B introduces Anthony Giddens' (1984) Structuration Theory as ontological frame of reference for this study and outlines the characteristics of empirical research informed by Structuration Theory. Furthermore, it reviews previous applications of Giddens' theory in management accounting research and carves out the cornerstones of a 'Structurationist' research perspective on management accounting.

Part C first gives an overview on the existing literature concerned with the impact of management accounting on managerial long-term orientation. It describes the scope, findings, and limitations of the two predominant streams of research that deal with this relationship: The research on 'economic short-termism' as part of the general management literature and the research on the Reliance on Accounting Performance Measures (RAPM) as one of the core streams in management accounting research. Against thE background of previous contributions, the research gap, the scope of the study, and the specific research questions are deducted.

Part D details the chosen research design. It outlines the two-staged case-study approach through the combination of semi-structured interviews and a questionnaire survey and highlights the conceptual and methodological improvements with respect to previous studies. It also provides an introduction to the divisionalized German manufacturing company selected as research site.

Part E gives a detailed account of the first phase of empirical research, a series of 14 semi-structured interviews at both the corporate center and a set of business units followed by two rounds of group discussion. After outlining purpose and method of the interviews, the results of this research phase are presented in terms of the role and relevance of RAPM on the one hand and other organizational practices on the other hand. Based on the anecdotal evidence gathered, the theoretical propositions to be tested in the subsequent survey are derived and presented in the resulting research model.

Part F describes the second phase of empirical research, a survey among 412 members of the middle management to validate the propositions derived during the interview phase. It details the survey design, the development and validation of the measures, the descriptive statistics as well as the results obtained from structural equation modeling (SEM) employing the LISREL software package.

Part G summarizes the study's main contributions and implications with respect to management accounting theory and practice. It concludes with a discussion of the study's limitations and gives an outlook on promising directions for future research addressing these shortcomings.

# B Structuration Theory and Management Accounting Research

This part of the research report sets the stage for a management accounting research effort informed and guided by Anthony Giddens' (1984) Structuration Theory (ST). It first outlines the dominant features of Structuration Theory, in general, (Chapter B1) and then, more specifically, describes the application of Giddens' theory in the realm of management accounting research (Chapter B2).

## 1. Structuration Theory as an Ontological Frame of Reference

This chapter presents Structuration Theory as an ontological foundation for socio-scientific research in adherence to a post-positivist philosophy of science (Sections B1.1 to B1.3). It then presents the most important concepts of Structuration Theory centering on the Duality of Structure (Section B1.4) and describes characteristics of empirical research informed by ST (Section B1.5). The chapter concludes with a critical review of Giddens' contribution (Section B1.6).

### *1.1. Structuration Theory as Socio-Scientific Meta-Theory*

For the application of the concepts of Structuration Theory on a specific research effort the nature or status of Giddens' theoretical contribution has to be acknowledged. In positioning Structuration Theory, authors refer to it as "theoretical approach"[26], "theoretical framework"[27], "ontological theory, at a high level of abstraction", "socio-philosophical […] view"[28], "conceptual framework"[29], or "ontology of potentials"[30]. Giddens himself aimed to develop an "ontological framework for the study of human social activities"[31], stressing the meta-theoretical status[32] of Structuration Theory.

When positioning Structuration Theory, it is useful to distinguish *formal* social theory on the one hand and *substantial* or *empirical* sociological theory on the other.[33] The former deals with fundamental philosophical and ontological assumptions of socio-scientific research like the "nature of social action, social relations, social systems"[34] and constitutes "a domain for inquiry."[35] The latter deals with social phenomena in a

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26 Bernstein (1989), p. 19.
27 Held/Thompson (1989a), p. 2.
28 Jochoms/Rutgers (2005), pp. 391, 405.
29 Willmott (1987), p. 258.
30 Cohen (1989), p. 11.
31 Giddens (1991), p. 201.
32 Cohen (1989), p. 11.
33 Jochoms/Rutgers (2005), p. 405; accordingly, Cohen distinguishes "ontological conceptualizations of fundamental entities or mechanism" and "substantive theory" (Cohen (1989), p. 17; De Cock/Rickards (1995), p. 700).
34 Cohen (1989), p. 2.
35 De Cock/Rickards (1995), p. 700.

given context, is thereby subject to epistemological and methodological constraints, and directly linked to empirical research.[36] Structuration Theory is a formal social theory as it explicitly concentrates on the ontological aspects of social theory[37] where epistemological concerns are not (yet) relevant and factors out substantive social processes and their empirical accounts.[38]

### *1.2. Post-Positivist Approach to Science*

With respect to the major streams in the philosophy of science, Structuration Theory can be positioned as post-positivist[39] or post-empiricist.[40] Positivism refers to the classical principles that the formation of knowledge can only stem from the (positive) affirmation of theories through empirical observation. From a positivist or empiricist perspective, a theory has to be a *deductively* developed set of laws and generalizations.[41] While well applicable to the natural sciences, these principles have limited value in the social sciences where all existing 'theories' are underdetermined by fact. This inevitable void would render all theoretical consideration a pre-theoretical status.[42] Post-positivist and post-empiricist researchers therefore abandon these idealistic claims and propose to fill the void with ontological or metaphysical postulates.[43]

Within the philosophy of science, these postulates are referred to as "metaphysical ideas"[44] not justifiable by the means of empirical research, answers to questions concerning the existence and interaction of fundamental entities[45], the "hard core" or "positive heuristic" of any "research programme"[46], metaphysical commitments as ontologies specifying certain research domains[47], or "intransitive objects".[48]

Giddens' Structuration Theory explicitly addresses these fundamental assumptions that are often only tacitly presupposed in research efforts.[49] He clearly takes a post-positivist position by formulating the theory in ontological terms purposely excluding any epistemological issues.

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[36] Ibid; Jochoms/Rutgers (2005), p. 405.
[37] Giddens (1984), p. xx.
[38] Cohen (1989), p. 1.
[39] Ibid., pp. 12-18; Bryant/Jary (1991b), p. 27.
[40] Giddens/Turner (1987), p. 2; De Cock/Rickards (1995), p. 700.
[41] Giddens (1984), p. xviii.
[42] Ibid; Cohen (1989), p. 15.
[43] Cohen (1989), p. 15.
[44] Popper (1968), p. 38.
[45] Kuhn (1970), pp. 4-5.
[46] Lakatos (1978), pp. 47-52, 110-11, 115.
[47] Laudan (1977), p. 79.
[48] Bhaskar (1978), p. 45.
[49] Cohen (1989), pp. 1-2.

### *1.3. Ontological Synthesis*

Giddens formulated his Structuration Theory in response to one of the most prevailing issues in the social sciences, the dichotomist relation between structure and agency, or more broadly speaking between society and the individual.[50] This issue has prompted competing ontologies which became manifest in competing schools of thought.

The *macro*-theory in the social sciences, on the one hand, stresses the deterministic, objective, and static notion of structure.[51] The macro view has informed the positivistic, functionalistic, and naturalistic schools of thought[52] which Giddens refers to as "orthodox concensus."[53] Characterizing them as "strong on institutions, weak on action"[54], he criticizes these schools for neglecting the *active* constitution as well as the *time-space context* of social life and for exclusively focusing on *observable* structures.[55]

On the other hand, the *micro*-theory centers on the voluntaristic, subjective and dynamic notion of individual agency.[56] Related schools in fundamental opposition to the "orthodox concensus" include hermeneutics, phenomenology, and interpretative sociology.[57] According to Giddens, they put too much emphasis on the intentions of the acting individual and not adequately account for the impact of structures and institutions.[58] Consequently, he labels them as "strong on action, weak on institutions."[59]

Structuration Theory purposely does not embrace either one of these ontologies as Giddens questions their mutual exclusivity.[60] He does not want to continue the dualistic debate of competing ontologies but seeks to move beyond the dichotomist logic to explore a new understanding of the relationship between structure and agency. In this respect, Structuration Theory can be seen in line with other classical approaches that avoid and eventually overcome the dualistic perspective.[61]

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50 Thompson (1989), p. 56; Pozzebon (2004), p. 252.
51 Barley/Tolbert (1997), p. 97; Jochoms/Rutgers (2005), p. 391.
52 Thompson (1989), p. 57; Barley/Tolbert (1997), p. 97; Jochoms/Rutgers (2005), p. 391.
53 Giddens (1984), p. xv.
54 Giddens (1982), p. 29.
55 Jochoms/Rutgers (2005), p. 391.
56 Barley/Tolbert (1997), p. 97; Jochoms/Rutgers (2005), p. 391.
57 Thompson (1989), p. 58; Barley/Tolbert (1997), p. 97; Jochoms/Rutgers (2005), p. 391.
58 Giddens (1976), p. 134; Jochoms/Rutgers (2005), p. 391.
59 Giddens (1982), p. 29.
60 Pozzebon (2004), p. 249.
61 Examples include the work by Bourdieu (1977) on the relationship between subjectivism and objectivism, the attempt by Bernstein (1983) to overcome objectivism and realism, the treatment of positivism by Bhaskar (1989), and the recent discussion of the interplay between science and hermeneutics by Fay (1996) (cf. Pozzebon (2004), p. 250).

Rather than stressing their opposition, Giddens builds on the complementarity of structure and agency in a process-oriented theory[62] and presents an (abstract) ontological synthesis where the *Duality of Structure* as central theme replaces the *dualism* of structure and agency ontologies.[63]

The following section elaborates on Giddens' *Duality of Structure*, which is the pivotal concept of Structuration Theory.

### *1.4. Duality of Structure*

Giddens' *Duality of Structure* attempts to "reconcile [individual] social action with collective dimensions of social life."[64] Prior to the presentation of the interdependent and complementary relationship of *structure* as collective dimension and *agency* as individual counterpart, this section reviews Giddens' definitions of both terms as well as of the more general terms *social practices* and *social systems*.

Central to Giddens' ontological approach is the notion of *social practices ordered across space and time*[65], which "can be understood as skilful procedures, methods, or techniques, appropriately performed by social agents."[66] As recursively reproduced human social activity, they constitute social life and should therefore be the primary domain of inquiry in the social sciences.[67] The application of *social practices* by social agents requires both resources and skills, where the necessary skills or knowledge can be tacit or explicit in nature.[68] Inherent in the concept of social practices is also the aspect of intervention, i.e. the transformative reproduction of social life, as knowledgeable agents can apply these methods to influence the course and outcome of social activity.

*Social systems*, in general, as well as organizations, in particular, are defined as a set of empirically observable, regular *social practices* linking agents across time and space.[69] They account for similar social relations and activities between individual agents or collectivities[70] but have no existence beyond the social practices that constitute them.[71]

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[62] Sewell Jr. (1992), p. 4; Barley/Tolbert (1997), p. 97.
[63] Jochoms/Rutgers (2005), p. 396.
[64] Cohen (1989), p. 10.
[65] Giddens (1984), pp. 2-4; Cohen (1989), pp. 26-30.
[66] Cohen (1989), p. 26.
[67] Giddens (1984), p. 2.
[68] Giddens (1984), p. 4 refers to the knowledge as *mutual knowledge* and differentiates *practical* and *discursive* consciousness, accordingly.
[69] Giddens (1984), p. 25; Sewell Jr. (1992), pp. 5-6.
[70] Giddens (1984), p. 28, refers to the so-called reciprocity of practices between actors or collectivities.
[71] Sewell Jr. (1992), p. 6.

In Giddens' terms, a *social system* is the "pattering of social relations across time-space, understood as reproduced practices."[72]

In the glossary to "The Constitution of Society", Giddens defines *structure* as follows:

> "*Rules and resources, recursively implicated in the reproduction of social systems. Structure exists only as memory traces, the organic basis of human knowledgeability, and as instantiated in action.*"[73]

This definition includes the following key properties:[74] Structure is comprised of generalizable and transposable procedures (*rules*) and sources of power (*resources*), both applicable in social interaction. The repeated instantiation of these rules and resources accounts for the reproduction of social practices and therefore allows for the binding of social systems across time and space (*recursively implicated in the reproduction of social systems*). Accordingly, social systems do not *have* a structure but exhibit structured or institutionalized features. Structure is a "virtual order"[75] governing the transformative reproduction of social systems that only exists in the form of ideas or schemata in human memory (*memory traces, the organic basis of human knowledgeability*) or applied in practice (*instantiated in action*).

In his definition of *agency*, Giddens applies a rather broad concept that goes beyond the concept of human agency as flow of *intentional* action.[76] Making the status of event dependent upon an agent's intention does not render an independent frame of reference to define human agency in absolute terms. In defining *agency*, Giddens therefore applies a concept that centers on the capability of acting and not on their intentions or (intended) consequences. His litmus test is whether "the individual could, at any phase in a given sequence of conduct, have acted differently"[77]. This definition allows him to include unintended consequences, which can also have systematic impact on the flow of actions, into the modeling of human agency.

In Structuration Theory, Giddens moves beyond portraying *structure* and *agency* as counteracting elements of a dichotomy or dualism but rather conceives them as complementary terms of his *Duality of Structure*.[78] He purposely does not sub- or superordinate one versus the other and therefore does not decide on the ultimate

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[72] Giddens (1984), p. 377.
[73] Ibid.
[74] Ibid., p. 17; Sewell Jr. (1992), pp. 6-10.
[75] Giddens (1984), p. 17.
[76] Ibid., pp. 8-14.
[77] Ibid., p. 9.
[78] Thompson (1989), p. 58.

prevalence of either *agency* or *structure*. They are rather said to exhibit a complex, dynamic relationship that is non-causal and non-linear in nature.[79]

In Giddens' terms, the *Duality of Structure* means that "social structures are both constituted *by* human agency, and yet are the same time are the very *medium* of this constitution."[80] The first aspect refers to the fact that the structural properties of social systems are the outcome of *agency* in the form of the application of social practices. The instantiation of these practices through individual *agency*, thus, (re)produces *structure*. In contrast, individual *agency* constantly draws on the virtual rules and resources of *structure*. Thus, their "action is *structured*"[81] or in other words is to a certain extent governed by the structural and institutional properties of the social system. In this sense, structure and agency, "far from being opposed, in fact pre-suppose each other."[82]

Giddens and many of his followers refer to the analogy of *langue et parole*, of language and speech[83] to illustrate the relationship between structure and agency. While language comprises the abstract rules for the (re)production of grammatical sentences, (acts of) speech are the instantiation or enactment of these abstract rules in the production of specific grammatical sentences. Meaningful (acts of) speech are in that sense enabled by the virtual existence of language, whereas at the same time, the (re)production (and transformation) of language requires its application in specific acts of speech.

The complementary and interdependent interplay of *structure* and *agency* under the regime of the duality of structure occurs over time in the recursive (re)production process of *social systems* – in the so-called *structuration* process.[84] Whittington[85] rightfully argues that Giddens inserted his concept of *social systems* between *structure* and *agency* to overcome the dichotomist logic and create the interdependent duality: "Social systems are constituted by the activities of human agents, enabled and constrained by the structural properties of these systems."[86]

### *1.5. Research Informed by Structuration Theory*

The following section examines the characteristics of research 'informed by' Structuration Theory. Specifically, it will be reviewed how the meta-theoretical status impacts the application of Structuration Theory in research and how it relates to other

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[79] Jochoms/Rutgers (2005), pp. 386-387.
[80] Giddens (1976), p. 121.
[81] Thompson (1989), p. 56.
[82] Sewell Jr. (1992), p. 4.
[83] Giddens (1976), pp. 118-122; Sewell Jr. (1992), p. 6.
[84] Jochoms/Rutgers (2005), p. 386.
[85] Whittington (1992), p. 695.
[86] Ibid.

(substantive) theories. Then, the key ontological assumptions arising from the *Duality of Structure* will be discussed and the dimensions of the *Duality of Structure* will be reviewed as structuring device for the conduct of research. Finally, the impact of Structuration Theory on empirical research projects will be analyzed.

As a meta-theory, Structuration Theory serves the purpose of informing and guiding researchers in the development and formulation of substantive theories and the prosecution of empirical research.[87] The guidance pertains to the provision of ontological assumptions on the nature of social life. Giddens uses the term "sensitizing devices"[88] to describe how Structuration Theory should be used to draw a researcher's attention to these assumptions. Therefore, the theory does not claim to be normative or prescriptive with respect to specific research phenomena of interest. Consequently, this research project is not classified as '*Structurationist* research' in the sense of testing or applying propositions derived from Structuration Theory but as research 'informed by' Structuration Theory. Such research acknowledges and builds upon the fundamental assumptions described above and uses Structuration Theory as analytical frame of reference to phrase and conceptualize its theoretical propositions and to interpret empirical findings.

While providing a clear ontological frame of reference, Structuration Theory allows for and invites theoretical pluralism at the level of substantive theory.[89] As "open-ended, non compulsory framework for social inquiry"[90], researchers can apply a set of substantive theories from their particular domain of interest and use Structuration Theory both to integrate these theories under an ontological 'umbrella' and to simultaneously guide their application in light of the ontology. In line with this understanding of the role of Structuration Theory with respect to other theories, the study will apply and test substantive theoretical propositions from the field of management accounting and related domains of organization research (e.g., strategy-making and corporate entrepreneurship) and will employ Structuration Theory as common ontological ground. As such, the propositions will be formulated and reviewed in structurationist terms and the empirical evidence will be interpreted against the background of structurationist assumptions.

When conducting such a study of social systems 'informed by' Structuration Theory, Giddens' concept of the duality of structure has three central implications to 'sensitize' the researcher:

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[87] Giddens (1984), pp. xvii-xviii; Cohen (1989), p. 2.
[88] Giddens (1989), p. 294.
[89] De Cock/Rickards (1995), pp. 699-700.
[90] Ibid., p. 700.

- The nature of structure and institution is not only constraining but at the same time enabling.[91] The instantiation of structure in social practices enables the individual agent to partake in social activities.

- Structure and institutions are not monolithic or determined as to preclude deliberate action.[92] The notion of transformation and change is inherent in the concept of Structuration and each knowledgeable agent has a certain amount of power to intervene and "act differently."[93] Giddens (1984, p. 16) refers to the fact that all structural dependencies contain to some degree freedom for the subordinate as *Dialectic of Control*. Each individual in this sense has transformative power and is never fully controlled by structure and institutions.

- Similarly, no individual actor has full control over the structuring properties of social systems which are in fact only virtual.[94] Thus, unintended consequences and transformative reproduction of social practices are an immanent feature of individual agency and thus social interaction.

Research propositions should be formulated in line with these implications and should be referenced when interpreting empirical results.

In the application of the duality of structure concept on particular research settings, it is helpful to follow Giddens' analytical distinction of three (horizontal) dimensions and three (vertical) levels (see Figure 2).[95]

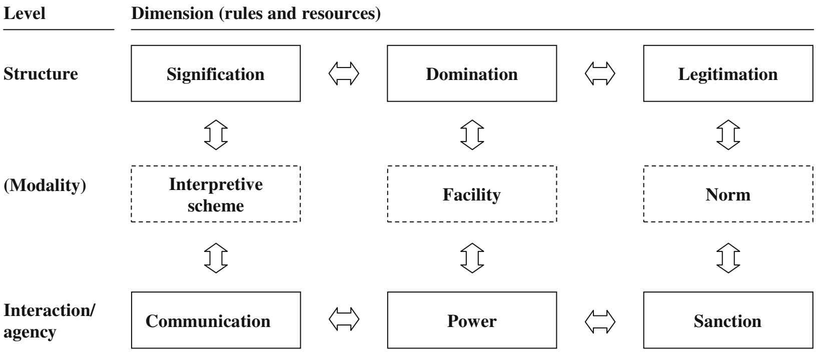


*Figure 2: Giddens' Duality of Structure Framework*[96]

[91] Giddens (1984), p. 25; Thompson (1989), p. 72; Whittington (1992), p. 695.
[92] Whittington (1992), pp. 695-697.
[93] Sewell Jr. (1992), p. 4.
[94] Giddens (1984), pp. 13, 16, 25.
[95] Ibid., pp. 28-31; Thompson (1989), pp. 60-61.
[96] Based on Giddens (1984), p. 29.

Horizontally, the duality concept comprises the following three structural dimensions of social systems:

- Structures of *signification* as generalizable rules guiding the assignment of meaning to social acts
- Structures of *legitimation* as generalizable rules governing the sanctioning of social acts and the definition of socially or morally desirable behavior
- Structures of *domination* as sources of power, either as power over material objects (allocative power) or as power over other social agents (authoritative power).

It is important to note that these dimensions are "separable only analytically"[97] as in every social act, signification, legitimation, and domination are inevitably intertwined.[98] The sanctioning of social acts always mirrors the meaning assigned to this social act within the system. Meaning is established with the execution of power and can, at the same time, serve as source of (interpretative) power. Finally, what is socially or morally desirable depends on the prevailing power within a social system while, at the same time, these conventions can also constitute sources of power.

Vertically, Giddens differentiates, as described, *structure* and *interaction/agency* but additionally inserts the notion of *modality* in between. While *structure* pertains to abstract or virtual rules and resources and *interaction/agency* to specific individual acts situated in time and space, *modality* refers to the application or instantiation of a virtual rule or resource in individual agency, which makes up an agent's "stocks of knowledge"[99] in that particular social setting. Likewise, when *communicating*, an agent draws on specific *interpretative schemes* representing underlying rules of *signification*. When exercising *power*, an agent applies specific *facilities* that obtain allocative or authoritative power from the underlying resources of *domination*. Finally, when *sanctioning* social acts, an agent applies specific *norms* that capture a system's underlying rules of *legitimation*. Through the application of these modalities, the structural properties of the system are recursively reproduced through individual agency.[100]

The three dimensions and three levels open up a 3x3-matrix that helps to decompose social activities analytically by referencing the duality of structure concept. Through the notions of horizontal and vertical recursion contained in this framework, the

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[97] Ibid., p. 28.
[98] Ortmann/Sydow/Windeler (1997), p. 324.
[99] Giddens (1984), p. 29.
[100] Becker (2003), p. 199.

complexity of social phenomena as research objects becomes evident.[101] At the same time, the framework provides means to address and deal with this complexity at the analytical level through decomposition of the constituent parts.

Management accounting practices as well as the additional organizational practices included in the research effort will be decomposed against this matrix to identify their structuring properties along the three dimensions. The analytical base will enable a better understanding for the interplay of the different practices resulting in the observed empirical phenomena.

One last important aspect concerning research informed by Structuration Theory deals with the implications of the abstract ontological synthesis of structure and agency within the duality concept on the execution of empirical research. In other words "how can such an abstract theory aid empirical research?"[102] Even though Giddens himself stresses that "Structuration theory will not be of much value it if does not help to illuminate problems of empirical research"[103], the potential benefits of an application of Structuration Theory on empirical problems and the resulting relevance for empirical work, in general, have been a much-debated issue.[104]

Jochoms and Rutgers[105] rightfully state that it is impossible to achieve a similar synthesis of *structure* and *agency* on a phenomenal or observational level, i.e. that the "theoretical and abstract unification does not apply to empirical research"[106]. This problem, methodological and not ontological in nature, refers to the fact that it is impossible to observe *how* agents draw upon rules and resources when interacting and simultaneously identify the *set of rules and resources* guiding the interaction. Giddens himself already conceded that it is necessary to differentiate between the theoretical and empirical level.[107] To render empirical research informed by Structuration Theory feasible and meaningful at the same time, he proposes two different kinds of analyses that involve a methodological bracketing of one of the two ontological concepts:

- Institutional analysis, which "places in suspension the skills and awareness of actors, treating institutions as chronically reproduced rules and resources". It emphasizes the structural or institutional aspects, which are assumed to be stable, 'bracketing' the (re)productive (and thus transformative) process of individual agency.

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[101] Ibid., p. 200.
[102] Jochoms/Rutgers (2005), p. 396.
[103] Giddens (1984), p. xxix.
[104] Gregson (1989); see also Section B1.6.
[105] Jochoms/Rutgers (2005), pp. 396-401.
[106] Ibid., p. 386.
[107] Giddens (1979), pp. 80-88; Giddens (1984), p. 288.

- Analysis of strategic conduct, which "places in suspension institutions as socially reproduced, concentrating upon […] how actors draw upon rules and resources in the constitution of interaction". It emphasizes the process of individual agency within a given ('bracketed') institutional setting.

From a Structurationist point of view, both analyses provide meaningful and justified starting points for research that only differ by their emphasis on either structural features or the dynamic aspects of individual agency. Yet, it is fundamental to note that these two kinds of analysis cannot be conducted simultaneously but that they are necessarily separated by time lag or in Giddens' terms by a "epoché."[108] Therefore, a researcher has to choose one approach at a time. Scapens/Macintosh (1996, p. 683) refer to this choice of methodological bracketing as means to operationalize the ST framework for empirical research. Yet, they also remind "not to push this methodological bracketing too far, as that could reintroduce the division between objectivism and subjectivism which the duality of structure was intended to dissolve" (p.683).

The present research effort – aimed at understanding predominantly organizational, i.e. structural, determinants governing managerial long-term behavior – will be conducted as institutional analysis. Therefore, one focus will be on how the institutionalized organizational practices (as structural aspects) influence and guide the individual behavior of managers. A deliberate methodological 'bracketing' will be applied to the modes in which an individual manager draws upon and thus (re)produces these practices in specific social acts.

At this point, it is important to note how the institutional analysis informed by Structuration Theory differs from classical structuralist or functionalist approaches to empirical research. These differences would disappear when the methodological bracketing would be 'pushed to far' in the above sense:

- Structuralist research presupposes individual agency as *determined* by structure[109] neglecting the bounded knowledgeability of the individual agent and his ability to always 'act differently'. Both result in unintended consequences. Institutional analysis accredits structure with the *potential to guide and influence* individual agency – but explicitly embraces unintended conesquences as common feature of social interaction.[110] It therefore does not try to analyze an abstract (objective) set of rules comprising structure but seeks to understand the structural elements present in the stocks of knowledge of the individual agent. Relevant research objects are only structural elements the

[108] Giddens (1979), p. 80.

[109] Thompson (1989) characterizes this view on structure as "quasi-mechanical, quasi-visual […] like the girders of a building, the skeleton of a body or the 'patterning' of social relationship" (pp. 59-60).

[110] Giddens (1984), p. 285.

agent is aware of – and more specifically his interpretation of these elements. Institutional analysis therefore centers on the set of rules as perceived by the individual agent and enacted in institutional social practices – and not as abstract features of the organization or other social system under inquiry.

- Structuralist researchers tend to view structure as monolithic[111], implying a stable set of structural properties that applies ubiquitously to all agents within a social system. This again neglects how individual agents process structural properties and that only those properties enacted and (re)produces in daily routines matter to social interaction. Institutional analysis on the other hand allows for a certain degree of structural diversity across social systems as the (re)production of social practices always comprises the notion of transformation[112], which results in differences in social practices across social systems and the modification of structural properties over time as results of (internal) transformative reproduction. Therefore, institutional analysis again seeks to identify the current enactment of a social practice in the agency of the individual actor, which reflects his understanding of the underlying rules given his bounded knowledgeability and his monitoring of the previous flow of interaction. Hence, the primary level of institutional analysis has to be the individual agents and his perception of the structural properties.

- From a structuralist point of view, structure *constrains* individual action as to conform to the rules and standards within a social system.[113] It determines individual agency primarily by *limiting* social action to a desired set of actions. If the set of actions is not clearly defined – as in the concept of managerial long-term orientation – this conceptualization itself faces limitations because what is desired cannot be spelled out as specifically as to determine individual action. Institutional analysis views structure as both constraining *and* enabling.[114] In that conceptualization, structure can provide strategies, methods, or at least orientation to guide agency along insufficiently defined yet desired lines of action.

- Contrary to classical structuralist or functionalist research, institutional analysis – as social research in line with Giddens' guiding principles – always comprises "ethnographic" aspects of "getting to know" the object of social inquiry.[115] Such an approach acknowledges the fact that information gathering in the field is by

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[111] Whittington (1992), p. 695.

[112] Thompson (1989), p. 72.

[113] Cohen (1989), pp. 213-214.

[114] Giddens states that "structure thus is not to be conceptualized as a barrier to action, but as essentially involved in its production" (Giddens (1979), p. 70).

[115] Giddens (1984), p. 284; Gregson (1989), p. 238.

definition a process of translation and interpretation, which requires intimate knowledge of the field to produce accurate and meaningful accounts of social life.

In brief, the "methodological bracketing" in institutional analysis does not imply to neglect or ignore process-related aspects of individual agency and to apply an 'ontological bracketing' characterizing structuralist or functionalist research.[116] It merely confines the empirical observation to structural or institutional aspects but explicitly incorporates and embraces the duality of structure concept in the interpretation of empirical results.[117]

### *1.6. Critical Review on the Application of Structuration Theory*

When critics appraise the extensive *oeuvre* of Anthony Giddens around the nucleus of Structuration Theory as a whole, they often cannot help but to deem it "remarkable"[118] and "congenial"[119], "perfectly sound"[120] in his overall aims and with a "profound and far reaching impact."[121] Nonetheless, given the enormous diversity and range of theoretical topics covered[122] and the "extensive array of themes, concepts, and 'positive critiques'"[123] contained in the Structuration Theory, Giddens' work has sparked numerous critiques – both fundamental as well as constructive and detailed in nature. As the study only draws on a fraction of this work, an exhaustive critique or appreciation is beyond the scope of this research report.[124] Instead, the following section highlights two rather general streams of criticism, which also apply to the use of Structuration Theory in this particular study. The first one refers to the ontological nature of ST while the second one deals with the relevance of ST for (empirical) research.

While some criticism targets the assumptions that underlie Structuration Theory in terms of their content, a more dominant critique is directed at the ontological nature of these assumptions. Critics claim that Structuration Theory lacks "explanatory propositions pertaining to substantive theory"[125] as well as (even rudimentary) normative

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[116] Cohen (1989), p. 205.
[117] Giddens (1979), p. 80; Giddens (1984), p. 190.
[118] Bernstein (1989), p. 19.
[119] Sewell Jr. (1992), p. 4.
[120] Thompson (1989), p. 57.
[121] Macintosh/Scapens (1990), p. 470.
[122] Giddens' oeuvre covers 23 books published between 1971 and 1989 and touches upon all major sociological movements such as structuralism, functionalism and systems theory as well as ethnomethodology, phenomenology, and symbolic interactionism (cf. Bernstein (1989), p. 19; Bryant/Jary (1991b), p. 1).
[123] Cohen (1989), p. 5.
[124] For a comprehensive review of the criticism sparked by ST, cf. for example Held/Thompson (1989b); Bryant/Jary (1991a).
[125] Cohen (1986), p. 127.

theorizing.[126] In their view, Structuration Theory specifically does not overcome the structure vs. agency debate as it does not offer a satisfactory solution in terms of prevalence of one over the other but rather enters an "intellectually impossible 'no-man's land'"[127] of a recursive dominance of both. Likewise, ST provides the three different (analytical) levels and dimensions of the social, claims interdependence in the process of Structuration but does not take a stand as to which level or dimension is primary and which is secondary to the reproduction of social systems. This results in a disturbing "take-it-or-leave-it character"[128] and is believed to be insufficient to guide research as a self-standing theoretical foundation. The study does not follow this line of criticism based on two arguments. One, the guidance of Giddens' ontological frame of reference purposely does not pertain to the provision of prescriptive or normative guidelines to define a research program by means of confinement and limitation – notwithstanding how reasonably argued they might be. Giddens, moreover, questions the adequacy of existing well-defined – but narrow – research 'corridors' and relates those to the guidance of Structuration Theory as the explicit expansion of sociological research beyond these 'corridors' to ensure effective knowledge generation through an impartial appreciation of social activities. Therefore, the lack of *normative* guidance is regarded as a strength rather than a weakness. Second, the study argues that meaningful empirical research should complement Giddens' ontology with one or more substantive theories providing the explanatory propositions which Structuration Theory rightfully – but again purposely – lacks.

A second stream of criticism is directed at the application and relevance of Structuration Theory in specific empirical research efforts, i.e. at the current viability of actually conducting 'structurationist research'. One source of limited applicability lies in the fact that many of ST's concepts still remain too "mysterious"[129], "frustratingly underspecified"[130], and "theoretically cloudy"[131] to be useful in specific research settings and even contain "serious gaps and logical deficiencies."[132] In addition, even the elaborately defined concepts such as the *Duality of Structure* are at a level of abstraction and complexity, which precludes their (direct) application in empirical research. As described above,[133] the analysis of the duality phenomenon in actual social settings is for example only feasible through the auxiliary means of methodological bracketing. Cohen (1989, pp. 282-284) therefore argues that "much work remains to be done before Structuration theory has as much relevance for researchers

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126 Bryant/Jary (1991b), pp. 28-29.
127 Macintosh/Scapens (1990), p. 471.
128 Bryant/Jary (1991b), p. 29.
129 Held/Thompson (1989a), p. 6
130 Sewell Jr. (1992), p. 5.
131 Bryant/Jary (1991b), p. 26.
132 Sewell Jr. (1992), p. 5.
133 See Section B1.5.

as it presently does for theorists" (p.283). This work-to-be-done mostly relates to the derivation of useful heuristic guidelines consistent with the ontological assumptions and their validation in a series of empirical research. In general, the study shares the acknowledgement of a serious disconnect between ST as social theory and its application in empirical research. Consequently, the study builds to a large part on previous conceptualizations of management accounting research informed by ST which are outlined in the next chapter and which clearly advance Giddens concepts towards empirical application in accounting settings. In addition, the study also aims to summarize the key elements of a structurationist research perspective in management accounting to further advance the formulation of the much needed heuristic guidelines.

At this point, it has to be conceded that Giddens never intended to burden empirical researchers with the need to incorporate all of his concepts and vocabulary into their work.[134] He was not so much concerned about influencing terminology but rather with orientation and attitude. In this sense, it is possible "to be structurationist without knowing it."[135]

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[134] Bryant/Jary (1991b), p. 27.
[135] Ibid.

## 2. Structuration Theory in Management Accounting Research

Based on the previous general remarks on Structuration Theory, this chapter specifically addresses the application of Giddens' views on management accounting research. It first traces the introduction and subsequent impact of ST in earlier management accounting studies (Section B2.1) and then derives a Structurationist research perspective on management accounting as guideline for the present study (Section B2.2). Lastly, it critically evaluates the impact and relevance of Structuration Theory in management accounting research (Section B2.3).

### *2.1. Previous Accounting Research Informed by Structuration Theory*

The introduction of Anthony Giddens Structuration Theory into the realm of management accounting research by Roberts/Scapens (1985) had considerable impact on both conceptual as well as empirical research. Baxter/Chua (2003), consequently, name Structuration Theory as one of seven streams of alternative management account research. A review of the leading journals[136] in the field of (management) accounting and its organizational and behavioral consequences rendered 26 studies informed by Structuration Theory with 11 conceptual contributions and 15 reports of empirical efforts (see Table 1 for an overview of studies).[137]

| Study | Type | Details |
|---|---|---|
| 1. Roberts/Scapens (1985) | Conceptual | Presents ST as a framework for analyzing management accounting practices in their organizational context. |
| 2. Macintosh/Scapens (1990) | Conceptual | Proposes ST as framework to expand management accounting research beyond its technical focus to include social and/or political aspects and tests its applicability by reinterpreting the longitudinal case study by Covaleski/Dirsmith on the University of Wisconsin budget system. |
| 3. Macintosh/Scapens (1991) | Conceptual | Tests ST as framework to extend management accounting research into social theory by reinterpreting two longitudinal case studies by Sloan on the financial control system at GM and Ansari/Euske on the weapons repair cost accounting system at the U.S. Department of Defense. |
| 4. Lawrenson (1992) | Empirical | Applies ST to the struggle between engineering and accounting perspectives in the British railway engineering industry in the inter-way period. |

[136] Including the following A+, A, or B journals (according to the VHB ranking): AAAJ, ABACUS, AOS, AR, BRA, CAR, CPA, EAR, JMAR, and MAR.

[137] Search criteria was the appearance of "Structuration Theory" in either title, abstract, key words, or full text and the explicit use of ST as theoretical foundation (potentially among others) or as analytical frame of reference.

| **Study *(cont.)*** | **Type** | **Details** |
|---|---|---|
| 5. Boland (1993) | Conceptual | Challenges and supplements Macintosh/Scapens' (1990) structurationist framework by stressing the (creative) interpretative act of individual managers employing the results of an experiment conducted by Milne on the reading and interpretation of management accounting reports. |
| 6. Scapens/Roberts (1993) | Empirical | Describes the introduction of a new accounting control system into unit companies of a large divisionalized company and explores the antecedents and consequences of the resistance to that chance informed by ST. |
| 7. Macintosh (1995) | Conceptual | Applies ST's dialectic of control on the issue of internal profit manipulation in large divisionalized companies analyzing previous case studies. |
| 8. Boland (1996) | Conceptual | Replies to Scapens/Macintosh (1996) stressing the general differences in the interpretation of Gidden's ST. |
| 9. Scapens/Macintosh (1996) | Conceptual | Replies to Boland (1993) pointing out the difference between institutional analysis (focus of Macintosh/Scapens (1990)) and analysis of strategic conduct (focus of Boland (1993)). |
| 10. Dirsmith/Heian/Covaleski (1997) | Empirical | Examines structural and social change at the Big 6 public accounting firms during the introduction of management by objectives (MBO) and mentoring drawing on institutional theory, sociology of the profession, and ST. |
| 11. Burns/Scapens (2000) | Conceptual | Develops a framework for the institutional analysis of management accounting change using old institutional economics (OIE) and ST as its base. |
| 12. Granlund (2001) | Empirical | Explores reasons for the stability of management accounting systems in a Finnish food manufacturing company employing institutional theory and ST. |
| 13. Jones/Dugdale (2001) | Conceptual | Employs ST to develop and illustrate the concept of an accounting regime. |
| 14. Johanson/Martensson/Skoog (2001) | Empirical | Employ ST next to evolutionary, action, and organizational learning theory to analyze organizational change prompted by management control of intangible at three Swedish companies. |
| 15. Ahrens/Chapman (2002) | Empirical | Studies accounting systems at a UK restaurant chain referencing ST. |
| 16. Caglio (2003) | Empirical | Employs ST to analyze the implementation and adoption of an ERP system at an Italian medium-sized pharma company. |
| 17. Granlund (2003) | Empirical | Analyzes the stability and change of management accounting systems after a "merger of equals" drawing on ST and goal ambiguity. |
| 18. Scheytt/Soin/Metz (2003) | Empirical | Explores differences in the notion of control across four European countries applying ST. |

| Study *(cont.)* | Type | Details |
|---|---|---|
| 19. Dillard/Rigsby/Goodman (2004) | Conceptual | Incorporates ST, institutional theory, and the work of Max Weber to develop a framework describing the institutionalization process and its socio-political context. |
| 20. Seal/Berry/Cullen (2004) | Empirical | Employs a Structuration approach to analyze inter-firm transactions and inter-firm accounting at a UK electronics company. |
| 21. Conrad (2005) | Empirical | Investigates the impact of regulation on management control and organizational change in the UK gas industry adopting ST as analytical framework. |
| 22. Jack (2005) | Empirical | Examines the development of UK's agricultural gross margin accounting as institutionalized practice employing ST and new institutionalism in sociology. |
| 23. Uddin/Tsamenyi (2005) | Empirical | Examines the changes of budgetary control and performance measurement in Ghanaian state-owned companies as a result of World Bank sponsored public sector reforms drawing on ST's dialectic of control concept. |
| 24. Englund/Gerdin (2007) | Conceptual | Elaborates the need to distinguish between conceptualizing management account rules and routines as observable practices or as modalities (theoretical constructs) when applying these mediating concepts of ST. |
| 25. Gurd (2007) | Empirical | Explores the value of theoretical triangulation by interpreting organizational and accounting change at the Electricity Trust of South Australia (ETSA). |
| 26. Jack (2007) | Empirical | Explores elements impacting the accounting environment in the UK food and agriculture industry drawing on aspects of domination in ST. |

*Table 1: Studies Informed by Structuration Theory*

Figure 3 portrays the distribution of studies over time indicating the adoption and diffusion of Structuration Theory in the field of management accounting. After the initial introduction in 1985, the application of ST was limited and only resulted in 10 studies over a period of 15 years. This slow adoption process was mirrored by Baxter/Chua (2003) who positioned the impact of ST for the alternative management accounting research as distinctive but small.[138] The picture changed significantly after the year 2000 with 16 studies within 8 years. The change was driven by the increasing use of ST in empirical work. The shift to empirical application after 2000 sharply contrasts the dominance of conceptual efforts in the early years where the primary aim was the incorporation of Giddens' theory into management accounting research.

[138] Baxter/Chua (2003), p. 100.

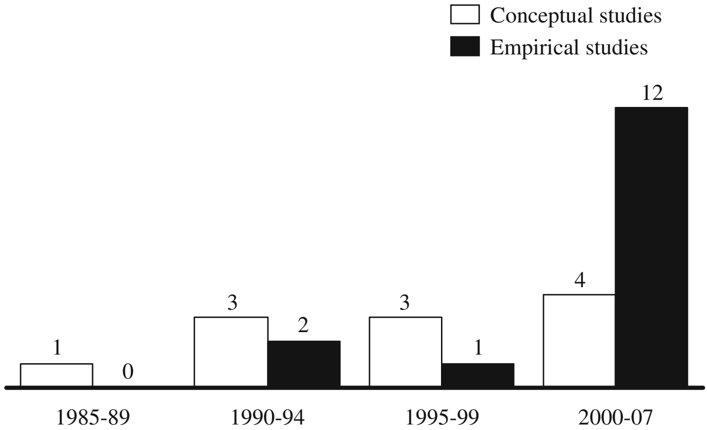


*Figure 3: Frequency of Studies Informed by Structuration Theory 1985-2007*

The conceptual studies can be attributed to 3 larger themes: The transfer of Structuration Theory into the realm of management accounting research, the adequate use and operationalization of the *Duality of Structure* concept, and the use and value of ST for the institutional analysis of management accounting.

The first series of conceptual papers[139] introduces the key concepts of Structuration Theory – social practices, structure and structuration, as well as the *Duality of Structure* – into management accounting research in an attempt to overcome the narrow technical focus of existing studies and to extent research into social theory. Structuration Theory is positioned both as sensitizing device and analytical framework to better understand the role of management accounting practices for the (re)production of organizations. It is said to be especially valuable to analyze stability and change in management accounting as well as to address the relations of power within organizations. By reinterpreting existing case studies in light of Structuration Theory, the general applicability and value of Structuration Theory for the study of accounting in its organizational context is established.

A second stream of conceptual thoughts is the "spirited meta-theoretical debate within *AOS*"[140], which specifically addresses the operationalization of the *Duality of Structure* in management accounting research and the positioning of management accountting practices in the context of structure and agency. Boland (1993; 1996) argues that the early conceptualizations[141] of management accounting systems as the (only) modalities of Structuration neglect the agency dimension that allows the knowledge-

[139] Roberts/Scapens (1985); Macintosh/Scapens (1990); Macintosh/Scapens (1991).
[140] Baxter/Chua (2003), p. 101.
[141] Roberts/Scapens (1985); Macintosh/Scapens (1990); Macintosh/Scapens (1991).

able actor to deliberately and selectively draw upon various interpretative schemes, facilities, and norms. In their reply, Scapens/Macintosh (1996) argue that empirical research in management accounting needs to apply Giddens' methodological bracketing in focusing *either* on the structure dimension (institutional analysis) *or* the agency dimension (analysis of strategic conduct), both are said to be promising avenues of research. Englund/Gerdin (2007) add to the debate by pointing out that researchers need to differentiate between management accounting practices as medium of action (modalities, institutional analysis) and action per se (analysis of strategic conduct). This argument underlines the fact that the ontological concept of the *Duality of Structure* as both medium of action and action cannot be applied to empirical work without the methodological bracketing of either structural properties or individual acts.

The third notable conceptual topic is the contribution of Structuration Theory to the institutional perspective on management accounting, which conceptualizes management accounting systems and practices as (institutionalized) rules and routines.[142] Here, Giddens' concept of Structuration is primarily used to describe and to explain the *process* of institutionalization[143] – an aspect previously neglected by institutional frameworks of management accounting.[144]

The empirical studies are mostly longitudinal case studies with a focus on n=1 organization. Notable exceptions are Dirsmith/Heian/Covaleski (1997) as well as Johanson/Martensson/Skoog (2001) who analyze a set of six and three organizations, respectively, Lawrenson (1992), Conrad (2005), and Jack (2005; 2007) who extend their research on entire industries, and Scheytt/Soin/Metz (2003) who apply a narrative methodology to a European cross-country sample.

All case studies generally aim at exploring accounting practices in their organizational and in the case of industry or country samples social, political, and/or cultural context. In terms of content, the empirical studies address the two issues of stability and chance in management accounting on the one hand and the relations of power and control on the other hand.

Stability and change in management accounting is addressed in three different ways. A first set of studies[145] traces long-term developments in organizations or industries prompted by social, political, or cultural influences. A second, much larger set of studies[146] examines change processes and resistance to change prompted by the intro-

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[142] Burns/Scapens (2000); Dillard/Rigsby/Goodman (2004) as well as the theoretical foundation in Dirsmith/Heian/Covaleski (1997); Granlund (2001); Jack (2005).

[143] Burns/Scapens (2000), p. 9; Dillard/Rigsby/Goodman (2004), p. 506.

[144] Scapens (1994).

[145] Lawrenson (1992); Conrad (2005) and the reinterpreted case study in Macintosh/Scapens (1990).

[146] Scapens/Roberts (1993); Dirsmith/Heian/Covaleski (1997); Johanson/Martensson/Skoog (2001); Caglio (2003); Jack (2005); Gurd (2007).

duction of a specific management accounting system like management by objectives[147], management control of intangibles[148], an ERP system[149], or a new performance measurement system[150]. Contrary to these change-centered studies, Granlund (2001; 2003) explicitly addresses the stability of management accounting and underlines the persistence of institutionalized accounting practices over time.

Studies on the relationship between power and control within social systems[151] acknowledge the fact that management accounting systems are not merely neutral systems providing signification or meaning but are also used as means of domination and internal and external legitimization.[152] In addition, they draw on Giddens' concept of the *Dialectic of Control*[153] which proposes a double-sided power relationship in any social interaction. Accordingly, actors subject to management accounting control can themselves exert some power to counter the control effort.[154] Sources of power include the exclusive access to knowledge and information-enabling forms of manipulation as well as allocative and authorative control within their domain of responsibility. Researchers use this particular perspective on accounting control to analyze power relationship such as the profit reporting in large divisionalized corporations[155], the asymmetry of power within the UK agricultural sector[156], or efforts to reform public sector accounting sponsored by the World Bank[157].

On the use of Structuration Theory in these empirical studies, it is important to note that the studies do not build on ST as substantive theory but as ontological and/or analytical frame of reference that aids the advancement of substantive theories like goal theory[158], decision theory[159], or control theory[160]. As such, ST is used as a "sensitizing device"[161] and "useful heuristic"[162] to enable but not to explain research findings.[163] It draws the researcher's attention to the organizational, social, political, and cultural context of management accounting in practice, highlights the relevance of

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147 Dirsmith/Heian/Covaleski (1997).
148 Johanson/Martensson/Skoog (2001).
149 Caglio (2003); ERP: Enterprise Resource Planning.
150 Uddin/Tsamenyi (2005).
151 Macintosh (1995); Scheytt/Soin/Metz (2003); Uddin/Tsamenyi (2005); Jack (2007).
152 Macintosh (1995), p. 305.
153 Giddens (1984), p. 16; see also Section B1.5.
154 Cf. ibid., p. 306.
155 Macintosh (1995).
156 Jack (2007).
157 Uddin/Tsamenyi (2005).
158 Granlund (2003).
159 Jack (2007).
160 Macintosh (1995).
161 Giddens (1984), p. 231.
162 Ahrens/Chapman (2002), p. 167.
163 Jack (2007), p. 907.

organizational structure *and* individual agency, and models management accounting systems as constantly (re)produced social practices entailing both persistence and potential for change over time. Additionally, Giddens' concept of the different dimensions of structure (See Section 1.4) is used as analytical framework that management accounting practices not only convey meaning but also always contain means of domination and legitimization.

In summary, previous research has successfully transferred the key concepts of Structuration Theory into the realm of management accounting research and illustrated their value for the study of behavioral and organizational aspects. From the existing empirical work, a number of 'usage patterns' emerge as to how empirical management accounting research 'informed by' ST can be conducted and how ST can be utilized to aid the advancement of substantive theory. Nevertheless, the field is still characterized by a certain disconnect between theory and empirical application, i.e., it lacks a agreed-upon set of heuristic guidelines for empirical management accounting research consistent with the (theoretical) Structurationist view on management accounting.[164] Accordingly, this study formulates a Structurationist research perspective on management accounting in an attempt to bridge the gap and then tests its applicability and usefulness for RAPM research.

## *2.2. Structurationist Research Perspective on Management Accounting*

Based on the previous review of existing theoretical and empirical work that employs or at least references Structuration Theory, the following chapter will deduct the key elements of the Structurationist research perspective employed as (heuristic) guidelines in this research effort.

### *2.2.1. Management Accounting as a Social Practice*

As indicated in the previous chapter, structurationist research focuses on social practices as constituting elements of any social system. Accordingly, structurationist research in management accounting centers on management accounting practices as social practices as opposed to properties or elements of a (formal) management accounting system. The definition of systems vs. practices follows Burns/Scapens' (2000) institutional framework of management accounting which is partly based on Structuration Theory. They define management accounting systems as rules which are "formalized statements of procedure"[165] and management accounting practice as "procedures actually in use"[166] or simply as "the way in which things are actually

[164] This disconnect is not particular to the field of management accounting but moreover a common issue in conducting any kind of research informed by ST (see Section B1.6).

[165] Burns/Scapens (2000), p. 9.

[166] Ibid.

done"[167]. The routines – also referred to as habits – represent repeated, programmatic, rule-based behavior that relies on tacit knowledge of the actor. Even though they are to some extent rule-based, it is necessary to differentiate rules and routines as "management accounting practices in use may not actually replicate the systems set out in the procedure manuals."[168] In conclusion, the present study shares Burns/Scapens' view on accounting "as a routine, and potentially institutionalized, organizational practice"[169] which is an adequate operationalization of Giddens' definition of social practices as recursively reproduced human social activity.[170] This is also in line with the recent conceptualization of "management accounting as practice" by Ahrens/Chapman (2007b). They claim that "[n]either does an objective system determine activity, nor can social phenomena be explained simply through the aggregation of individual actions" (p.4). Besides the rejection of (objective) management accounting systems as research objects, the definition also implies that the study of individual acts of management accounting practice is insufficient if it does not relate to institutionalized practices and the structuring properties of the 'relevant context'.

This perspective on management accounting puts the practices into the center of research attention and abandons the comparison of practices with any normative 'ideal' management accounting system derived from theory or commonly held beliefs.[171]

In the proposed conceptualization, management accounting practices are part of the 'virtual order' of organizations that only exist stored in human memory or instantiated in action.[172] Through the notion of continuous reproduction of management accounting practice in the interplay of structure and agency, change and stability of management accounting emerge as two sides of the same coin. Stability and change are not two discreet states of a social system.[173] In the *Duality of Structure*, structure provides for the *regular* reproduction of practices while individual agency always entails the potential for change as agents can always 'act otherwise'. This potential also becomes evident in the *Dialectic of Control* conception because it serves as the 'arena' in which management accounting practices are put into action.[174] Management accounting practices are means of power and control but the individual actor can always react with some form of countervailing power with the potential to produce unintended consequences.

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167 Ibid.
168 Ibid.
169 Ibid., p. 5.
170 This definition of management accounting practice is also in line with Roberts/Scapens (1985), pp. 443-444; Macintosh/Scapens (1990), p. 462.
171 Scapens (1994), p. 303.
172 Macintosh/Scapens (1990), pp. 456-460 and (also in the following) Section B1.4.
173 Similarly, Burns/Sapens (2000) abandon a "static" (p.4), outcome-oriented analysis of management accounting change, but rather view it as an "evolutionary" (p.13), time-consuming process.
174 Macintosh/Scapens (1990), p. 461; Macintosh/Scapens (1991), p. 145; Becker (2003), p. 215.

### *2.2.2. Management Accounting within the Social Context*

Structuration Theory as social theory is inclusive to all structuring properties of a social system that determine the action of individuals under the regime of the *Duality of Structure*. This implies that structurationist research in management accounting needs to establish a broad definition of the 'relevant' context to be included in the analysis.

In management accounting research, the study of accounting in the context "in which it operates"[175] has been prompted by Hopwood's (1983) seminal paper which proposed "[o]rganizational inquiry [as] a new area of investigation for accounting research"[176]. In this tradition, Roberts/Scapens (1985) introduced Structuration Theory to accounting research to provide a theoretical underpinning and analytical frame of reference for the inquiry of management accounting practice in the relevant context.[177] *Context* is then defined broadly and inclusively as the sum of all particular structures of signification, legitimation and domination drawn upon in a specific research setting.[178]

In such an analysis, the relevant structures of meaning, morality, and power range beyond the (formal) management accounting system and also beyond the relevant management accounting practices as "management accounting systems [and practices, OG] are but one of a set of rules and resources available to actors."[179] Instead, the analysis should seek to include *all* relevant rules and resources actors draw upon. Accordingly, Scapens/Macintosh (1996) deem it "essential to explore the links between accounting and other organizational processes, and to explore the wider structures which are drawn upon in reproducing accounting practices and their relationship with other organizational practices."[180]

The two aspects to explore links to other functional units and at the same time to take into account the organizational reality were already included in the early proposition by Roberts/Scapens (1985) and have been acknowledged as 'relevant context' in previous empirical work.

On the links to other organizational units, Granlund (2001) for example considers the production unit perspective on management accounting change processes and lists business orientation of accountants as a driver and accounting ownership of the change process as an inhibitor for the implementation of change within functional units. Caglio (2003) traces in detail the shift from coexistence to collaboration of accounting and line management during the introduction of a new ERP system through the parti-

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[175] Hopwood (1983), p. 287.
[176] Ibid., p. 303.
[177] Roberts/Scapens (1985), pp. 443-444.
[178] Ibid., p. 448.
[179] Boland (1993), p. 127.
[180] Scapens/Macintosh (1996), p. 677.

cipation of line managers in the customization of the management accounting system and the increasing process view that diminishes the dominance of functional borders. Ahrens/Chapman (2002) focuses less on the management accounting function but explore how management accounting and performance management practices influence the relationship of the front line management and group functions.

In regard to the organizational reality, Scapens/Roberts (1993) for example take into account an "ambiguous form of decentralization" (p.7) where strong functional managers dominate in a formally divisionalized company. They also consider the staffing and background of individual senior managers in the context of the prevalent struggle between a production and an accounting view on performance. Granlund (2001) addresses the role of external consultants as well as the motivation, support and expertise of senior managers as relevant context factors for accounting change. Lastly, Caglio (2003) identifies latent issues of control and visibility leading to a suboptimal choice of an ERP system and also considers the relevance of individual managers (in this case of the CFO) as contextual factor.

In sum, the inclusion of the 'relevant context' allows the researches to draw a vivid and detailed picture of management accounting in practice, including its role as means of signification, legitimization and domination. This detailed account enables them to rationalize the existence and persistence of particular practices and to better understand processes of management accounting change and their drivers and inhibitors.

### *2.2.3. Social Dimensions of Management Accounting Practices*

A key element in a structurationist analysis of social relations and action is the consideration of all three of Giddens' structural dimensions of the social – structures of signification, legitimization and domination – while, at the same time, acknowledging that they are always intertwined and separable only for analytic purposes.

In contrast to this perspective, Roberts/Scapens (1985) found the conventional view on accounting with the sole focus on the signification dimension to portray accounting information as "mirror or picture which neutrally and objectively records the 'facts' about what has happened in an organisation over a particular period of time" (p.453). The introduction of Structuration Theory into accounting research was therefore also motivated by the notion that management accounting practices provide more than just financial or economic meaning to organizational activity.[181] Instead, they also comprise structures of legitimization and domination that play a prominent role in the organizational context of accounting in practice.[182]

[181] Macintosh/Scapens (1990), p. 153.
[182] Roberts/Scapens (1985), p. 448; Macintosh/Scapens (1990), pp. 460-461.

While management accounting practices (necessarily) comprise all three horizontal dimensions of Giddens' duality, existing research positions them along the vertical axis solely as modalities of structuration located in-between structure and agency/ interaction.[183] In this sense, structure, on the one hand, comprises the shared concepts, theories, values, and ideals management accounting is based on including general theories in the fields of finance, economics, or management science as well as specific accounting concepts like (economic) profits, costs, or assets. Agency or interaction, on the other hand, refers to specific social interaction of the management accounting practice. The accounting practices are conceptualized as the application and instantiation of abstract concepts in individual agency.

It is important to note that the earlier conceptualizations by Roberts/Scapens (1985), and Macintosh/Scapens (1990) portray management accounting *systems* and not management accounting *practices* as the modalities of structuration. The view is not shared here. 'System' in this sense refers to the *formal* procedures, guidelines, and rules in management accounting which have no representation in Giddens' *Duality of Structure*. Moreover, the framework specifically centers on structuring properties *put into action*. As noted above, the action is only to a certain extent rule-based and might divert significantly from the formal management accounting system. Therefore any structurationist analysis should focus on the social practices that have evolved based on (or even in opposition to) the formal accounting system. This perspective of management accounting *practices* as modalities of Structuration is also shared by Becker (2003) who adapts the early concept by Roberts, Scapens, and Macintosh similarly drawing on management accounting as social practices.[184]

As modalities of Structuration management accounting practices represent at the same time interpretive schemes (signification), norms (legitimation) and resources (domination) (see Figure 4).[185]

[183] Macintosh/Scapens (1990), p. 462; Becker (2003), pp. 214-215.

[184] Becker (2003), p. 214; nonetheless, Becker is not stringent in his use of *practices* as modalities for he conflates systems and practices in the description of the different modalities (p.214-223). Also in Becker (2004), he contrarily defines management accounting *systems* as modalities (p.762).

[185] Macintosh/Scapens (1990), pp. 460-462; Macintosh/Scapens (1991), pp. 137-147; Scapens/Macintosh (1996), p. 680; Becker (2003), pp. 214-223; Conrad (2005), p. 4 .

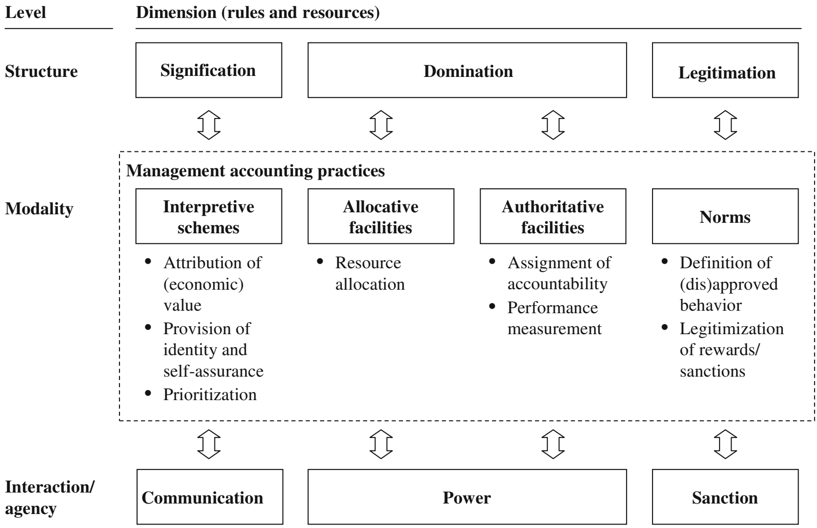


*Figure 4: Management Accounting Practices as Modalities of Structuration*[186]

With respect to *signification*, management accounting practices draw on abstract accounting concepts like profit, (economic) value or cost to give meaning to specific organizational activities and their outcome in these terms. Becker (2003) differentiates between the following four different aspects of signification:[187] Most importantly, management accounting practices are the interpretive schemes used to *meaningfully* communicate and interpret organizational activities in accounting terms, i.e. attribute (economic) value to products, services, processes, individuals, and organizational units. Secondly, by attributing value to organizational units, they represent means to differentiate and describe these sub-units providing them with a sense of identity and self-assurance. Thirdly, they enable organizational control by signifying the most relevant accounting information (e.g., captured in key performance indicators) for individuals or organizational units. Lastly, management accounting practices are themselves the result of a signification process as individual actors in (re)producing them recursively draw on structures of signification and interpret abstract accounting concepts (reflected for example in formal management accounting systems) based on their view on the 'relevant context'.

With respect to *legitimation*, they also embody organizational norms and the organizations notion of morality. These are based both on organizational goals, principles, and values but also reflect external structures of legitimation like economic

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[186] Based on Becker (2003), p. 215.
[187] Ibid., pp. 218-220.

principles or political and social convictions. Against this background they define approved as well as disapproved behavior and also legitimize rewards and sanctions of such behavior. In that sense, the signification of organizational activity is never neutral but always reflects underlying ideals and values about the reasons, legitimization, and ultimate goals of these activities.

With respect to *domination*, they additionally represent facilities that can be used on all organizational levels to exert power to coordinate and to control other individuals. As allocative facilities, management accounting practices influence the distribution of organizational resources, e.g., through budgeting and planning procedures. In an authoritative sense, they attribute accountability to individuals and evaluate and thus influence individual performance profiles.

Again, it is important to note that these three dimensions are always intertwined. The attribution of economic meaning (signification) enables and at the same time is enabled by the definition of economic norms and goals (legitimation) and the allocation of resources and accountabilities based on economic criteria (domination).[188] Through the interpretation of organizational activity management accounting practices also signify "what counts"[189] thus coordinating the actions of others towards these goals and at the same time legitimating organizational actions against the background of some (e.g., economic) ideal.

### *2.2.4. Empirical Research in Management Accounting Informed by ST*

The application of Structuration Theory in empirical management accounting research has a number of implications for the research approach apart from the general aspects addressed above. The most prominent ones will be outlined in this section along the five basic research concepts mentioned by Ahrens/Chapman (2007a): Theory, methodology, domain, hypothesis, and method.

#### *Role of Theory*

Ahrens/Chapman define theory as a "set of explanatory concepts"[190] which help to address a research question. While Structuration Theory doubtlessly provides exploratory means to create an understanding of social systems and activities, it needs to be specified how it helps in addressing research issues.

As noted in the previous chapter (see Section B1.5), Structuration Theory has a metatheoretical status and serves as a sensitizing device to guide research efforts by drawing attention to the underlying ontological assumptions. The existing empirical work in the field of management accounting (see Section B2.1) has used Structuration Theory

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[188] Ibid., p. 219.
[189] Macintosh/Scapens (1990), p. 462.
[190] Ahrens/Chapman (2007a), p. 821.

in this sense "as a sensitizing device or a focal point"[191] to "make sense of what we see."[192]

Depending on the particular research issue, Structuration Theory can be complemented by one or more *substantive* theories to be explored, developed, refined, or even tested[193] in light of structurationist assumptions (see Section B1.5). While some studies have already demonstrated the value of such an approach[194], most existing studies solely rely on Structuration Theory in providing an interpretive, yet descriptive account of management account practices in structurationist terms without referencing and advancing substantial theories. Even though such an approach also enhances the understanding of management accounting in practice, the study argues that an exclusive use of Structuration Theory forfeits much of its potential to advance theory in management accounting research and bears the danger of rendering solely descriptive evidence disconnected from the research field due to a lack of guidance by substantive theory. Therefore, research informed by Structuration Theory should be prompted by and should center on substantive theoretical propositions and use Giddens' theory as indicated above as means to broaden, complement, and transform existing theories.[195]

*Methodology*

Methodology – not to be confused with method (see below) – is defined as a *general* approach to the study of research issues.[196] Ahrens/Chapman distinguish *qualitative* and *positivistic* approaches which differ in their view of the empirical reality as either socially constructed and therefore subjective or independent of the social context and therefore objective.

As Structuration Theory presents a post-positivistic approach to science (see Section B1.2), research informed by Structuration Theory is naturally situated in the realm of a qualitative methodology. Ahrens/Chapman specify the qualitative approach as naturalistic, holistic, and interpretive.[197] Naturalistic research stresses the gradual development of understanding through exploration and inspection as modes of inquiry. Holistic research combines analysis of the subject and the environment. Interpretive re-

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[191] Scapens/Roberts (1993), p. 3.
[192] Ibid.
[193] On the relationship of qualitative field research informed by ST and the positivist notion of theory testing see the following section.
[194] Macintosh (1995); Granlund (2003); Jack (2007).
[195] Macintosh/Scapens (1990), p. 468; also cf. Pozzebon (2004), p. 254 for an analogous argument in the field of strategic management studies.
[196] Ahrens/Chapman (2007a), p. 821.
[197] Ibid., p. 822.

search focuses on phenomena that cannot be explained in normative terms but where its understanding requires interpretive procedures. [198]

Accordingly, management research informed by Structuration Theory always involves exploration of a social phenomenon like management accounting change in a specific context where the theory's analytical frameworks and concepts will gradually help to disentangle and, thus, understand the complex social reality (see Section B2.1). The broad research scope that specifically includes the relevant context presents holistic research in the above sense. (see Section B2.2.2) Lastly, such research is also interpretive as the "social reality in which accounting practices are embedded must be interpreted by the researcher."[199]

As this study proposes the complementary use of Structuration Theory and substantive theories, the relationship of qualitative and positivistic research approaches need to be carefully considered. Ahrens/Chapman[200] citing Van Maanen (1998) rightfully argue that the two do not represent a mutually exclusive dichotomy – that positivistic research is not "the evil twin of qualitative research."[201] Instead, they share common features along the other dimensions of e.g., method, theory, or hypothesis and one needs to be aware of how both could be complementary rather than merely contrary. In the specific case of management accounting research *informed* by Structuration Theory, the structurationist approach supports and requires a qualitative research approach. Yet, the findings could nonetheless – whether in parallel or in sequence – aid the advancement of the substantive theory in positivistic terms. In such a setup, substantive theory would steer the exploration along structurationist lines in an attempt to enable confirmation of substantive propositions. This approach is also motivated by Scapens/Macintosh (1996) who sketch out a similar research approach for the study of 'goal incongruent behavior'.[202] They propose a dialogue or *rapprochement* between interpretive and structural research even though they are based on different methodological grounds. Nonetheless, they claim to be optimistic that a frequent change of perspective with a subsequent integrated interpretation of the different findings "should advance the debate and that new insights and theories of 'goal incongruence' will emerge."[203] This ideal in mind, the present study also does not confine its methodology to either qualitative or positivistic research but rather adopts a dual approach to reflect the impact of the ontological grounding of Structuration Theory and the explicit linkage to substantive theory.

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[198] Tomkins/Groves (1983), pp. 363, 366, 368 (as referenced by Ahrens/Chapman (2007a)).
[199] Scapens/Roberts (1993), p. 3
[200] Ahrens/Chapman (2007a), pp. 821-822.
[201] Van Maanen (1998), p. xii.
[202] Scapens/Macintosh (1996), pp. 686-688.
[203] Ibid., p. 688.

A methodological aspect particular to Structuration Theory is the issue of methodological bracketing in empirical research; it implies a choice between institutional analysis and the analysis of strategic conduct (see Section B1.5). This distinction or a potential conflation of the two was at the core of the meta-theoretical debate mentioned above (see Section B2.1). The initial conceptualizations of Roberts/Scapens (1985) and Macintosh/Scapens (1990) focused on management accounting practices as modalities of Structuration and thus necessary but prematurely, narrowed the analysis to structural or institutional aspects in terms of chronically reproduced practices – neglecting the skills and awareness of actors. Boland's (1993; 1996) criticism can be seen as a call to equally represent the analysis of strategic conduct where researchers concentrate on how the individual actor employs and thus reproduces and potentially changes management accounting practices through individual agency.

Both methodological approaches are potentially valuable avenues of research and they might even complement each other in the advancement of management accounting theory.[204] Nonetheless, Englund/Gerdin (2007) stress that at any point in time one needs to be specific about what is under inquiry – either individual empirically observable acts of management accounting practice (in an analysis of strategic conduct) or practices as chronically reproduced rules and routines (in an institutional analysis). Otherwise, a conflation of both concepts might lead to "erroneous conclusions about structural change/stability"[205]. Researchers studying individual accounting practice while referencing practices might mistake situated application of accounting practices to a new context for structural change.

*Domain*

In this context, the research domain is simply defined as "space where data is collected."[206] Research informed by Structuration Theory seeks to analyze social reality. Therefore its domain is naturally 'the field' but the specific scope within the field needs to be considered.

The exploration of management accounting in its 'relevant context' requires the researcher to probe deeply into the social system under inquiry. This usually implies the need to confine a study to a single organization which will then be subject to a thorough and broad assessment of its management accounting practices and its context. Following this, previous studies focused on n=1 or a small number of (comparable) organizations. Apart from the standard setup of analyzing management accounting practices in their *organizational* context, the case can also comprise an entire industry

[204] Scapens/Macintosh (1996), pp. 688-689.
[205] Englund/Gerdin (2007), p. 8.
[206] Ahrens/Chapman (2007a), p. 821.

or country/cultural sphere as a social system if management accounting practices are to be analyzed within their wider *political*, *social,* or *cultural* context.

*Hypothesis*

Hypotheses as "testable propositions"[207] are situated on the level of substantial theories. Yet, Structuration Theory as meta-theory specifically addresses ontological questions and its assumptions about the social can by definition not be tested.

In management accounting studies informed by Structuration Theory, hypotheses will necessarily be based on the substantive theories. Whether they are explicitly spelled out based on extant literature or rather suggestive propositions will depend on the specific theories bundled with the ontological foundation in a research effort.

*Method*

In their approach to methods as "specific research techniques"[208], Ahrens/Chapman explicitly separate the choice of method from the (previous) choice of methodology.[209] This implies that a certain method is not exclusively confined to one methodological perspective and hence allows for multi-method approaches. In that sense, semi-structured interviews can aid positivist research efforts and at the same time questionnaire surveys can also be used in a qualitative research effort as defined above.

Nonetheless, their discussion focuses on interviews as the dominant research method in qualitative field studies. With respect to methodology, two types of interviews need to be distinguished that differ with respect to the notion of reality.[210] Positivistic research employs interviews for the collection of information about an objective reality, e.g., objectively definable properties of a management accounting system. Qualitative research, on the other hand, views reality as socially constructed and therefore interviews individuals in order to understand how they comprehend, perceive, and interpret management accounting practices.

Management accounting research informed by Structuration Theory also puts a strong emphasis on interviews for the understanding of management accounting practices as socially constructed reality in a specific context. All existing empirical studies (see Section B2.1) employ semi-structured interviews (in the latter sense) as research method. Scapens/Roberts (1993, p. 3) conclude accordingly that their interpretations "rely to a considerable extent on descriptions of events provided by organizational participants." The approach is based on the belief that the relevant facts in terms of a

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207 Ibid.
208 Ibid.
209 Ibid., pp. 822-823.
210 Ibid., p. 822; for a detailed discussion cf. Alvesson (2003).

detailed understanding of accounting in practice can be obtained by interviewing senior (accounting) personnel as key informants.[211]

Despite the dominant role of (semi-structured) interviews one should be aware of the potential benefit of multi-method approaches through the combination of interviews with other methods like questionnaire surveys to triangulate research findings or deepen findings by adding a new perspective. In line with previous claims by Birnberg/Shields/Young (1990, pp. 51-53) and Ittner/Larcker (2001, p. 396), Ahrens/Chapman (2007a) encourage this approach and list a number of field studies that successfully combine interviews and questionnaires, like Chapman (1998), Davila (2000), or Marginson/Ogden (2005). Such an approach might especially be valuable if the substantial theories allow for or even invite positivistic approaches and the study thus most likely would benefit from a methodological dialogue as outlined above.

### *2.3. Value of ST in Management Accounting Research*

This chapter finally assesses the value of Structuration Theory for management accounting research by reviewing its contribution and limitations. Baxter/Chua (2003, p. 100) have qualified the contribution of Structuration Theory to alternative management accounting research as "small but distinctive". In conclusion, its impact in terms of size is still relatively small but growing with a number of recent studies drawing on Giddens' work (see Section B2.1). In terms of distinctiveness, the study also sees its contribution outweighing its limitations, if applied properly. This section discusses the main points of the argument which also echo some of the more general points of criticism outlined in the previous chapter:[212] The meta-theoretical status of Structuration Theory, the value of the different ontological assumptions, and the application in empirical accounting research.

In terms of its meta-theoretical status, it has been argued that Structuration Theory could serve as an integrating device for the different theoretical approaches to alternative management accounting research that view accounting as social and organizational phenomenon.[213] The lack of a predominant theoretical approach in management accounting research has led to number of competing theories. This "plethora"[214] of theories, on the one hand, provides for a wide diversity of paradigms. Yet, it also causes "theoretical disarray"[215]. This has prevented a faster research progress in the field. As meta-theory, Structuration Theory can provide for a common ontological ground and sense of direction for these different (substantive) theories and thus enable fruitful exchange between different schools of thought in management accounting.

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[211] Roberts/Scapens (1985), p. 447.

[212] See Section B1.6.

[213] Macintosh/Scapens (1990), pp. 455-456.

[214] Ibid., p. 456.

[215] Ibid., p. 455.

Critics, on the other hand, also qualify Structuration Theory as somewhat vague and arbitrary (see also Section B1.6). They claim that the ontological framework simply renders an 'it-all-depends' notion without any prescriptive or normative power; thus at best allowing for descriptive research accounts of management accounting practice. This study, however, argues that normative guidance of research projects should be provided by the substantive management accounting theories and that Structuration Theory can *in addition* broaden the research approach and provide an integrating perspective by drawing the researcher's attention to the ontological aspects of reflexive Structuration within social systems (see Section B1.4). In summary, it can provide integrating and sensitizing meta-theoretical potential for accounting research but it only unfolds if it is properly applied in conjunction with substantive theory and not mistaken for a source of normative or prescriptive power.

In terms of the ontological assumptions of Structuration Theory, it has been argued that they greatly enhance the researcher's understanding of management accounting as social activity within the context of (different) social systems. First, they complement the analysis of technical and formal aspects of management accounting systems with the inquiry of behavioral and organizational aspects.[216] Second, they 'sensitize' research to take into account both individual day-to-day accounting practice as well as the dimension of practices as social structure – and to bear in mind their reflexive relationship in the process of Structuration.[217] Third, they broaden the researcher's perspective beyond the dimension of signification to aspects of legitimation and domination always entailed in management accounting practices (see Section B2.2.3) By offering the analytical 3x3 duality framework, they also provide means to cope with the complexity of analyzing management accounting as social practice.[218] Yet, it again can be argued that these assumptions do not provide enough guidance to management accounting research as they do not finally decide on the primacy of agency or structure.[219] Similarly, they do not provide a hierarchical order of the structural dimensions of significant, legitimation, and domination, which would help to organize theoretical arguments along a chain of (hierarchical) reasoning.[220] The study agrees with Macintosh/Scapens (1990, p. 474), that the openness of ST is rather a strength than a weakness as it does not privilege one perspective while marginalizing the other but forces the researcher to adopt a holistic perspective in management accounting.

In terms of the application and overall suitability of Structuration Theory for empirical management accounting research, the discussion repeats many general statements on

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[216] Roberts/Scapens (1985), pp. 443-444.
[217] Macintosh/Scapens (1991), p. 152.
[218] Ahrens/Chapman (2002), p. 152.
[219] Macintosh/Scapens (1990), p. 471.
[220] Ibid., p. 469.

the empirical relevance of Giddens' theory. Also in management accounting research, empirical studies cannot simultaneously study management accounting practices as structure and individual acts of management accounting practice (agency) but need to focus on one of the two – at the same time 'bracketing' the other dimension. Again, the relevance of the duality concept can be put in question if any application of the concept necessarily requires privileging one vs. the other. Here it is important to note that the bracketing is only affecting the research method and not the interpretation of research findings. Bracketing does not mean to marginalize or neglect the impact of structure or agency but simply to hold them in suspension for the duration of an individual research effort in order to arrive at a useful account of the dimension under inquiry. The other dimension and its impact need to be taken into account in the interpretion of the research results.[221] The bracketing is at best an alternating bracketing in the sense that an empirical research program informed by Structuration Theory should ideally focus on either agency or structure. Jack (2007, p. 907) compares such an approach with the examination of a stereogram where "one has to focus on one shade or shape at a time to see what is in the picture, altering focus each time until the complete picture is understood." Methodological bracketing therefore does not render Structuration Theory irrelevant for empirical research.

In sum, the studies follows the initial argument by Macintosh/Scapens (1990, p. 462) that Structuration Theory, its limitations notwithstanding, can aid "the development of substantive theory and empirical explanations in which management accounting is regarded, not as a natural phenomenon, but as a social construction."

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[221] Scapens/Macintosh (1996), p. 688.

# C Management Accounting and Managerial Long-Term Orientation

A considerable amount of research found in literature on general management and management accounting has been directed at the interplay of management accounting and strategic management behavior. At the core of the discussion is the balancing of predictable goal achievement and the encouragement of managerial long-term orientation[222] which Simons (1995) deems "the essence of management control" (p. 91). While traditional management accounting practices such as budgeting are generally associated with predictable short-term goal achievement, their impact on long-term orientation is considered to be at least problematic if not even clearly dysfunctional. The dysfunctionality refers to potential negative organizational and behavioral effects of traditional management accounting practices as it relates to an excessive short-term bias of managers resulting in myopic action and decision-making. One aspect of particular interest is the allegedly dysfunctional impact of accounting-based performance measurement practices on managers' orientation towards long-term issues.

The following part of the research report first gives an overview of the existing literature on this much-cited 'dysfunctional effect' (Chapters C1 and C2). Based on the existing conceptual and methodological deficiencies and the previous inconclusive results, it then describes the research gap and formulates the research questions addressed by the present study (Chapter C3).

The current state of research on the 'dysfunctional effect' can be understood considering two research streams that intersect at this particular research issue and that partially developed in parallel: The debate on 'economic short-termism' within the general management literature[223] and the Reliance on Accounting Performance Measures (RAPM) research stream within management accounting literature.[224] While the former broadly explores drivers of myopic management behavior, the latter specifically seeks to identify behavioral effects of budgeting and will therefore be the primary (substantive) theoretical base for the study. The following chapter briefly introduces the debate on 'economic short-termism' and its reverberation in management accounting literature before the existing RAPM research on managerial long-term orientation is reviewed.

[222] Frow/Marginson/Ogden (2005), p. 270.
[223] See Chapter C1.
[224] See Chapter C2.

## 1. Debate on 'Economic Short-Termism'

The claim that traditional budgetary controls or, more specifically, the Reliance on Accounting-Performance Measures (RAPM) have a dysfunctional effect on managerial long-term orientation should be seen in the context of the broader debate on 'economic short-termism'[225] during the 1980s and early 1990s. Even though the early work on RAPM dysfunctionalities already included the aspect of long-term orienttation, it was only the debate on 'economic short-termism' with its focus on myopic management behavior that prompted focused research in that direction, provided for the underlying theoretical reasoning, and is still a much-cited reference in RAPM literature.[226]

The debate deals with the issue of inter-temporal choice as a fundamental aspect of management decision relating to different distributions of costs and benefits along the timeline.[227] Managers are faced with *problems* in inter-temporal choice if their optimal course of action for the short term contradicts or diverts from that most beneficial in the long term. In such a setting, economic short-termism as characteristic of management behavior refers to "decisions and outcomes that pursue a course of action that is best for the short term but suboptimal over the long run."[228] In other words, myopic management behavior involves over-valuing short-term effects at the expense of neglecting long-term consequences.

The associated debate was sparked in the early 1980s by increasing claims that the US economy was on the verge of decline because managers *systematically* exhibited economic short-termism by neglecting long-term considerations for competitive advantage in favor of short-term profit concerns.[229] These long-term considerations comprised for example investments in research and development (R&D) and the development of new products or capabilities where critics saw a widening gap to European or Asian competitors. [230]

While short-termism as symptomatic description of the US economy was not disputed, the actual debate has been dealing with its root causes. The discussion touched on individual, organizational, as well as broader economical aspects and the range of potential explanations included properties of formal management control systems[231], pressure from the stock markets[232], as well as high cost of capital[233]. In a systematic

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[225] Cf. Laverty (1996) for an overview of the debate.
[226] Merchant (1990), p. 297; Van der Stede (2000).
[227] Loewenstein/Thaler (1989), p. 181.
[228] Laverty (1996), p. 826.
[229] Cf. for example Hayes/Abernathy (1980); Thurow (1981); Norris (1983).
[230] Laverty (1996), p. 825.
[231] Hayes/Abernathy (1980), p. 70.
[232] Drucker (1986), p. 31.

review of these different root causes, Laverty (1996) derived a list of five potential explanations for economic short-termism relating to individual as well as structural (organizational and economic) aspects:

1. *Flawed management practice* which refers to the properties and techniques of contemporary management (accounting) practice.
2. *Managerial opportunism* which draws on generalizable patterns of individual behavior in situations that involve information asymmetry.
3. *Stock market myopia* which relates to the underlying mechanism that determine share prices at the capital market.
4. *Fluid and impatient capital* which touches upon the (average) holding period and thus investment horizon of a typical investor.
5. *Information asymmetry* which pertains to aspects of information value or 'information impactness' of short- and long-term information even in the absence of (individual) opportunism or (collective) stock market myopia.

The first aspect of 'flawed management practice' refers to a management practice that excessively emphasizes short-term (financial) performance and strongly discounts future performance. Performance of managers is then measured over a too brief period, mostly relying on quarterly or annual reports. This aspect has attracted considerable attention within management accounting literature and is echoed when authors claim that accounting-based control systems tend to cause managerial short-term orientation.[234]

As the common belief builds part of the theoretical foundation even for the more recent research on the dysfunctional effect of RAPM, one needs to take a close look at the empirical evidence in support of this proposition. The much-cited article by Hayes/Abernathy (1980) for example is based on the authors' experience and statements gathered at a management training for senior executives. Likewise, Kaplan (1984) bases his claims regarding myopic management behavior on statements from a CEO panel. The authors also frequently reference articles from business magazines such as Thurow (1981), or Friedman/Solman (1983). Consequently, Merchant (1990, p. 297) and Laverty (1996, p. 831) rightfully characterize the existing evidence as anecdotal or at best circumstantial in nature. In other words, there is no systematic empirical body of evidence supporting the claims related to the dysfunctional impact of 'flawed management practice'.

[233] Jacobs (1991).
[234] Cf. Van der Stede (2000), p. 612 and (with limitations) Merchant (1990), p. 297.

In line with the above observations, Laverty (1996, p. 826) is wary not to position his claims related to the root causes of economic short-termism as "commonly held belief"[235]. Instead, he carefully contrasts the propositions with theoretical counter-arguments and contradictory empirical evidence to point out the unresolved research issues. To settle the debate, he specifically encourages researchers to extent their efforts beyond the isolated inter-temporal choice problem and to take into account other organizational processes and boundary conditions to adequately reflect actual management decision problems.[236]

In conclusion, one should be careful not to conclude that studies from this research stream "have indeed documented"[237] the existence of the dysfunctional effect. In fact, they only provide initial anecdotal evidence that is yet to be validated considering the relevant organizational context.

[235] Lee/Sexton (1992) as cited in Laverty (1996), p. 826.
[236] Laverty (1996), pp. 847-848.
[237] Van der Stede (2000), p. 612.

## 2. RAPM Research

The following chapter reviews the Reliance on Accounting Performance Measures (RAPM) research stream[238] as the core (substantial) theoretical foundation for the present research project. It first defines the RAPM construct and its sub-dimensions (Section C2.1). The subsequent two sections review the existing RAPM literature by providing an overview on the entire stream of literature (Section C2.2) and elaborating on the existing work devoted to the relationship of RAPM and managerial long-term orientation (Section C2.3). It finally outlines the role-theoretic foundation of RAPM (Section C2.4) and interprets RAPM as social practice along the lines of Gidden's Dimensions of the Social (Section C2.5).

### *2.1. Definition of RAPM*

While the debate on 'economic short-termism' is primarily concerned with macro-economic developments and their implications, the RAPM research stream stems from considerations on the behavioral effects of budgeting on the individual manager, i.e. its impact on the micro-level. Specifically, RAPM research deals with the use of budgetary information for managerial performance evaluation and explores its impact on work-related attitudes and behaviors of subordinates.[239]

In general terms, the Reliance on Accounting Performance Measures can be defined as "the extent to which superiors rely on, and emphasize those performance criteria which are quantified in accounting and financial terms, and which are pre-specified as budget targets."[240] This definition does not draw on the mere *use* of APM[241] in the context of performance evaluation. Moreover it is concerned with their relative importance with respect to any other (non-financial) performance measures or to subjective evaluations to determine managerial performance. Alternative terms – used largely synonymously – include *budget emphasis*[242], *tightness of budgetary control*[243], *pressure to meet financial targets*[244], and *budget constrained supervisory style*[245].

Even though there is consensus about the general direction of RAPM research as indicated above, the detailed conceptualization and measurement of the RAPM construct is still subject to academic discussion. Hartmann (2000, pp. 466-467) criticizes that existing concepts are too broad, unspecific, and not founded in the management

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[238] For a recent overview RAPM, cf. Hartmann (2000).
[239] Briers/Hirst (1990), p. 373; Hartmann (2000), p. 451.
[240] Harrison (1993), p. 319.
[241] Accounting performance measures.
[242] E.g., Brownell/Hirst (1986), pp. 243-244; Brownell/Dunk (1991), p. 697.
[243] E.g., Van der Stede (2001), p. 124.
[244] E.g., Merchant (1990), p. 303.
[245] E.g., Hopwood (1972), pp. 164-165; Otley (1978), pp. 127-129.

control theory, which results in varying, inconsistent and sometimes even ad-hoc operationalizations of the RAPM construct and thereby hinders theoretical advancements. He therefore calls for a more detailed definition of RAPM derived from existing management control typologies[246] which captures and conveys the 'essence' of the construct. [247]

The study will therefore adopt Van der Stede's (2001) detailed conceptualization of RAPM[248]. It was derived based on the concept of (tight) control by Merchant (1985b) and Anthony/Govindarajan (1998) as proposed by Hartmann (2000). He differentiates five distinct sub-dimensions of 'relying on' and 'emphasizing' accounting-based performance measures to make his understanding of the 'essence' of RAPM explicit:

1. The emphasis on meeting short-term budgets
2. The budget commitment, i.e. how easily budget revisions are accepted during the year
3. The level of detail of interim budget reviews (bottom line vs. line-item control)
4. The tolerance for interim budget deviations
5. The intensity of budget-related communications

The first sub-dimension relates to "the extent to which top management considers meeting the budget essential on a short-term basis."[249] It specifically addresses the time-frame aspect of tight budgetary control, i.e. the balancing of short- and long-term emphasis. This aspect appears pivotal with respect to the production of the alleged dysfunctional effect on managerial long-term orientation.[250]

In the following, the study will therefore employ a slightly narrower definition of RAPM to be understood as the reliance on *short-term* accounting performance measures or, in other words, the extent to which superiors consider meeting *short-term* budgetary targets essential for managerial performance evaluation.

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[246] Hartmann (2000) specifically mentions the control typologies by Merchant (1985b), Ouchi (1979), Anthony (1981) and Anthony/Govindarajan (1998) (p. 467).

[247] Hartmann (2000) contrasts studies referring to RAPM as accounting-based *targets* and those using RAPM in the sense of *formal controls* (pp. 466-467).

[248] Van der Stede (2001) employs the term *tight budgetary control* but specifically references the RAPM literature as primary area of application of the construct (p. 122).

[249] Ibid., p. 129.

[250] Accordingly, Otley/Fakiolas (2000) also identify "short-run vs. long-run emphasis" as one of five dimensions in a similar decomposition of an earlier RAPM concept by Hopwood (p.508).

## 2.2. *Overview of the RAPM Research Stream*

The Reliance on Accounting Performance Measures research stream is rooted in earlier studies by Argyris (1952), DeCoster/Fertakis (1968) and Swieringa/Moncur (1972) which generally established the importance of behavioral and organizational factors in the context of budgeting. They already identified dysfunctional effects of budgetary controls and developed measures for *budget pressure*[251] and *budget-related behaviors*[252]. Those served as starting points for later RAPM operationalizations.

While these early studies broadly described and analyzed the budgeting phenomenon and its behavioral and organizational implications, subsequent studies focused on selected aspects of budgeting, notably budget preparation and the use of budgets for performance evaluation. Studies on the latter aspect formed the RAPM research stream.

The formal starting point of RAPM research[253] was marked by the two studies by Hopwood (1972) and Otley (1978). Their research was prompted by the fact that accounting performance measures are imperfect indicators of managerial performance as they are neither (1) comprehensive nor (2) precise, (3) solely outcome-oriented and (4) focused on the short-term.[254] The two studies explored various dysfunctional effects related to these deficiencies both on mediating variables like job-related tension and trust as well as on management behavior and budgetary performance as outcome variables. Even though both studies generally underlined the importance of these behavioral aspects including the effect on long-term behavior, the results were contradictory in selected aspects. While Hopwood reported confirmation for his proposed dysfunctional relationships in a cost center environment[255], Otley could not confirm dysfunctional effects on job-related tension, negative social relations, and budgetary performance in a profit-center environment.[256]

These contradictory findings prompted a series of studies that tried to replicate Hopwood's and Otley's findings through the introduction of a broad set of contingent anteceding and moderating variables like cultural dimensions, individual, task, or environmental characteristics or budget participation in order to reconcile the divergent results.[257] Figure 5 presents an overview of typical variables employed.

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[251] Budget-pressure questionnaire (BPQ) by DeCoster/Fertakis (1968), pp. 240-243.
[252] Swieringa/Moncur (1972), pp. 197-199.
[253] For an overview, cf. the literature reviews by Briers/Hirst (1990), p. 373; Hartmann (2000), p. 453.
[254] Hopwood (1972), pp. 157-158.
[255] Ibid., p. 175.
[256] Otley (1978), p. 146.
[257] Briers/Hirst (1990), p. 380; Hartmann (2000), pp. 454-455.

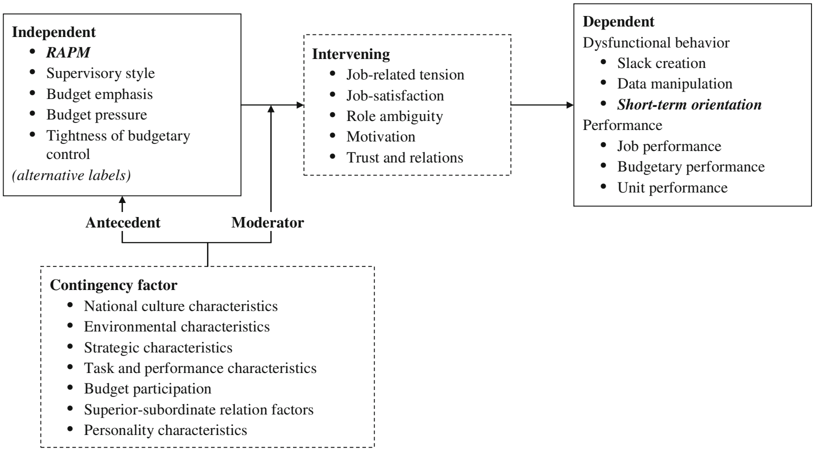


*Figure 5: Overview of Variables in RAPM Research*[258]

With 28 and 46 RAPM studies identified in literature reviews by Briers/Hirst (1990) and Hartmann (2000), respectively, the RAPM body of research currently presents one of the few critical masses of empirical research in management accounting – even though not (yet) an organized critical mass as stated by Brownell/Dunk (1991, p. 703). Hartmann (2000, p. 465) notes rightfully that most attempts failed to replicate previous findings and to integrate them into a more coherent perspective on RAPM. He argues that both theoretical as well as methodological deficiencies have prevented RAPM research from rendering definite answers on the behavioral aspects of budgeting.[259] The deficiencies include varying and often unspecific conceptualizations of RAPM not grounded in theory, an unreflected application of contingency theory, and methodological shortcomings related to measurement validation as well as to sample size and composition.

## *2.3. RAPM and Managerial Long-Term Orientation*

One of the aspects not yet sufficiently addressed is the effect of RAPM on managerial long-term orientation. Of 47 empirical RAPM studies[260], only four address managerial long-term orientation as dependent variable and only two explicitly center on this behavioral aspect of RAPM (see Table 2 for reference). The number of empirical studies does not reflect the attention the effect has received in the context of myopic management behavior. This could be linked to the difficulties associated with the

[258] Own compilation based on Briers/Hirst (1990), p. 375.

[259] Hartmann (2000), pp. 465-469.

[260] Based on literature reviews by Briers/Hirst (1990) and Hartmann (2000) with 28 and 46 empirical studies, respectively, and a review of AOS, BRA, CAR, CPA, EAR, JAR, JMAR, MAR, and TAR 2000-2007 only yielding van der Stede (2000).

conceptualization and measurement of long-term orientation[261] as most RAPM studies either employ well-defined (intervening) behavioral constructs like job satisfaction or job-related tension, or directly measure the impact on performance.[262]

| Study | Sample | Independent | Dependent | Results |
|---|---|---|---|---|
| Hopwood (1972) | (N=20) | Style of evaluation | Short-term behavior | Only circumstantial evidence (case study section) |
| Otley (1978) | N=41 | Style of evaluation/ budget emphasis | Long-term time orientation | Dysfunctional effect partially supported, significant (p<.05) |
| Merchant (1990) | N=54 | Pressure to meet financial target | Long-term time orientation | Dysfunctional effect supported, barely significant (p<.1) |
| | | | Discouragement of new ideas | Dysfunctional effect supported with limitations, significant (p<.01) |
| Van der Stede (2000) | N=153 | Rigidity of budgetary control | Short-term time orientation | Dysfunctional effect supported, not significant (p<.15) |

*Table 2: RAPM Studies with Long-Term Orientation as a Dependent Variable*

In the two initial studies by Hopwood (1972) and Otley (1978), long-term considerations are included merely as one dependent among many potentially affected by the superiors' *style of evaluation* contrasting budget-constrained (BC), budget-profit (BP), profit-conscious (PC) and non-accounting (NA) styles.[263] Hopwood explores this aspect of long-term orientation in the case study section of his paper and reports limited circumstantial evidence in favor of a dysfunctional effect related to the timing of expenditures for maintenance and repair.[264] Otley includes the managers' time spent on long-term issues in his survey and finds significantly higher *long-term time orientation* if superiors apply an intermediate budget- *and* profit-conscious (BP) style of evaluation. This implies, however, that the absence of budget constraints in a solely profit-conscious – and therefore not budget-constrained – style also leads to less long-term orientation which contradicts the general notion of the dysfunctionality proposition.

The more recent work by Merchant (1990) and Van der Stede (2000) is influenced and in part prompted by the debate on 'economic short-termism' and the proposed *flawed management practice* impacting long-term orientation.[265] Both studies take a more targeted approach and confine their inquiry to a few behavioral effects including managerial short- vs. long-term orientation. Merchant reports a weak and barely statistically significant dysfunctional effect of the *pressure to meet financial targets* on the

[261] Van der Stede (2000), p. 620.

[262] See overview in Hartmann (2000), pp. 456-462.

[263] For the analysis, Hopwood merged the intermediate BP style with BC. Otley identified a continuum categorized as A, B, C, D, and E, ranging from BC (A) to NA (E).

[264] Hopwood (1972), pp. 171-172.

[265] Merchant (1990), p. 297; Van der Stede (2000), p. 612.

*managerial time orientation* construct adapted from Otley.[266] He does find a highly significant dysfunctional effect on the generation of new ideas. Yet, Merchant himself admits that the effect was due to the operationalization of the *discouragement of new ideas* construct.[267] Van der Stede finally measures RAPM as *rigidity of budgetary control* and also analyzes the impact on *managerial time orientation*. In line with the results of Merchant's study, the observed weak dysfunctional effect is again not statistically significant.[268]

In sum, these four RAPM studies do not allow for final conclusions on the existence of the dysfunctional effect as none of the proposed relationships is fully supported with significant evidence. In addition, they suffer from a number of deficiencies in line with Hartmann's (2000) criticism above that might have prevented more meaningful results and should be addressed in future research efforts. The studies almost exclusively rely on the narrow long-term *time* orientation construct that uses time allocation as sole indicator for the broad concept of managerial long-term orientation. In the notable exception of Merchant's *discouragement of new ideas* construct, the explanatory power of the measure is limited and the observed correlation does not allow to draw conclusions on the overall dysfunctional effect. Lastly, the studies employ varying and in the case of Hopwood (1972) and Otley (1978) rather broad definitions of RAPM that do not specifically target the time-frame aspect of budgetary control. Especially Otley (1978) and Merchant (1990) also suffer from small sample sizes.

### *2.4. Organizational Role Theory and RAPM Research*

The following section will introduce organizational Role Theory as (substantive) theoretical background of RAPM research. The research issue will be interpreted in role-theoretical terms in order to ground the present study in theory and to allow for a more differentiated interpretation of the propositions and the results in light of theory. The approach is also in response to Hartmann's (2000, p. 467-468) criticism that previous RAPM studies are only loosely linked to theory and that RAPM theory is generally underdeveloped.[269]

#### *2.4.1. Basic Concepts of Role Theory*

Subject of Role Theory is the role of individuals defined as "a set of behaviors that others expect […] in a certain context"[270]. Those expectations – either overtly stated in

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[266] Merchant (1990), pp. 307-308.

[267] Merchant (1990) notes that the "results, however, may be due to the way the pressure-to-meet-financial targets variable was made operational; pressure was measured in terms of the effect of controls on expenditures on discretionary programs. Thus it would have been surprising if the two measures had not been positively correlated." (p. 308).

[268] Van der Stede (2000), p. 617.

[269] Also cf. the earlier critique by Briers/Hirst (1990), p. 385.

[270] Floyd/Lane (2000), p. 157.

formal descriptions or covertly implied in shared norms or beliefs – develop within and reflect the structural properties of a social system. In organizations as particular social systems, roles tend to be more clearly defined and at the same time individuals tend to play multiple roles combining a set of explicit and implicit expectations.[271]

Organizational Role Theory[272] as portrayed by Kahn *et al.* (1964; 1966) deals with roles in organizational setups where central principles of classical organization theory are breached. These principles include:[273]

- The chain-of-command principles which postulates a single flow of authority within hierarchical organizations
- The principle of unity of command or single accountability which demands subordinates to be held accountable by (only) one superior
- The principle that subordinates' roles, duties, and responsibilities need to be well defined and specified in detail.

A breach of these classic principles can lead to role *conflict* and role *ambiguity* as the two focal concepts of Role Theory.[274]

Individuals may experience a role *conflict* if one of the first two principles is violated and if they are consequently faced with inconsistent expectations concerning their desired behavior.[275] Such a situation causes stress and dissatisfaction leading to so-called coping behavior of the individual including avoidance of decisions, trial-and-error approaches, distortion of reality. The *dysfunctional* behavior in turn decreases performance and organizational effectiveness.

Drawing on the role conflict taxonomies by Gross/Mason/McEachern (1958) and Kahn *et al.* (1964), Rizzo/House/Lirtzman (1970, p. 155) derived the following four categories of within-individual or intra-sender role conflict[276]:

1. Conflict between the individual's internal standards or values and the desired role behavior

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[271] Biddle (1986), p. 73.

[272] Ibid., pp. 70-76 differentiate Functional, Symbolic Interactionist, Structural, Organizational, and Cognitive Role Theory highlighting the latter two as primary field of empirical research.

[273] Rizzo/House/Lirtzman (1970), pp. 150-151.

[274] Fried *et al.* (1998), p. 19; Hartmann (2000), p. 467

[275] Rizzo/House/Lirtzman (1970), p. 151; Biddle (1986), p. 82.

[276] As RAPM research deals with the effect of a certain performance measurement practice on the individual manager, this study focuses on within-individual or intra-sender role conflicts where individuals are faced with inconsistent expectations and excludes cases of between-individual or inter-sender role conflicts where dissent exists between individuals about the appropriate role. (Biddle (1979), pp. 197-200).

2. Conflict between the individual's available time, resources, or capabilities and the desired role behavior

3. Conflict between different or incompatible desired behaviors of multiple roles an individual plays

4. Conflicting definitions of desired role behavior in terms of policies, requests, or standards of evaluation.

Individuals are on the other hand faced with role *ambiguity* if the third principle is violated and if they are faced with ambiguous, incomplete, or unspecific information about their role in terms of tasks, goals and accountabilities, or criteria of evaluation.[277] Such ambiguous expectations again cause stress, dissatisfaction, insecurity and anxiety resulting in coping behavior and, eventually, decreased performance.

### *2.4.2. Application of Organizational Role Theory in RAPM Research*

Hartmann (2000, p. 467) depicts Role Theory as the "basic theoretical framework" of RAPM research. The budget-pressure questionnaire (BPQ) by DeCoster/Fertakis (1968) as one source of origin for the RAPM construct was explicitly based on Role Theory[278] and Hopwood (1972; 1973) based his perspective on the organizational and behavioral impact of supervisory styles on role-theoretic reasoning.[279] Most subsequent RAPM studies rely on Hopwood's role-theoretic perspective as they were preoccupied with "statistical sophistication of empirical investigation"[280] and the introduction of contingency variables at the expense of theoretical advancements.[281]

Notable exceptions to the role-theoretical approach are Brownell (1982), who employs balance and motivation theory, and Dunk (1993), who introduces new variables based on principal-agent theory. Critics, however, see little contribution to RAPM theory from these studies.[282] In sum, organizational Role Theory still represents the dominating theoretical foundation for RAPM research. Avenues for further theory development include the complementing application of motivation theory for selected RAPM settings[283] as well as the inclusion of the uncertainty paradox in theoretical considerations.[284]

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277 Rizzo/House/Lirtzman (1970), p. 151; Biddle (1986), p. 83.
278 DeCoster/Fertakis (1968), p. 240.
279 Briers/Hirst (1990), p. 377; Hartmann (2000), p. 454.
280 Briers/Hirst (1990), p. 385.
281 Hartmann (2000), pp. 468-469.
282 Briers/Hirst (1990), p. 390; Hartmann (2000), p. 467.
283 Briers/Hirst (1990), p. 395 propose motivation theory in the case of a "needling supervisory style"
284 Hartmann (2000), pp. 469-474 acknowledges that role theory (referencing the controllability principle) cannot explain the observed positive effects of uncertainty and proposes to link existing

In the derivation of his role-theoretical perspective on RAPM, Hopwood's (1972; 1973) line of argument follows three steps:[285] Due to the imperfect nature of accounting-based performance measures[286], a budget-constrained (BC) supervisory style leads to role conflicts and role ambiguity. This in turn creates managerial tension, stress, dissatisfaction, and anxiety. Lastly, managers engage in coping strategies and exhibit dysfunctional behavior with respect to organizational effectiveness and performance.

Basis for this argument is Hopwood's definition of a budget-constrained (BC) supervisory style as performance measurement where "evaluation is primarily based upon the cost center head's ability to continually meet the budget on a short-term basis […] at the expense of other valued and important criteria."[287] The extreme definition of RAPM as *exclusive* reliance on *short-term* APM lead to role-related dysfunctionalities via two mechanisms:

On the one hand, the use of budgets as incomprehensive and short-term-centered performance measures leads to role *conflicts*. In particular, they can arise as two types[288] either between multiple roles with incompatible expectations (3) or between conflicting definitions of the desired role behavior (4). In the former case, the role behavior derived on the basis of the short-term budgetary goals diverts from or even contradicts the behavior entailed by other relevant roles with a strategic or non-financial focus. In the latter case, the role behavior as defined by the overtly stated evaluation standards contradicts other overtly or covertly stated behavioral standards e.g., based on corporate guidelines, values, or general expectations on managerial behavior.

On the other hand, the imprecise and solely outcome-oriented nature of accounting performance measures leads to role *ambiguity* as the behavior necessary to achieve or ensure the expected outcome is not (exhaustively) specified. Therefore, it will render an incomplete account of the role expectations.

The fact that a manager's desired behavior is only ambiguously defined in terms of accounting performance measures results in stress, insecurity, and anxiety, The fact that his other roles are not reflected in performance measures leads to stress, tension, and dissatisfaction.

Lastly, to relieve the level of stress and tension, managers engage in various forms of coping behavior. This behavior usually has a dysfunctional character as it leads to

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RAPM research to the uncertainty paradox and to differentiate the impact of *environmental* and *task uncertainty*.

285 Hopwood (1972), pp. 159-163; Briers/Hirst (1990), p. 377; Hartmann (2000), p. 454.

286 See section C2.2.

287 Hopwood (1972), p. 160.

288 See section C2.4.1.

"transference of interest from the wider organizational purposes which they were designed to serve on to the specific behavior which is necessary to improve the indexes of performance."[289] It includes blaming other units for variances, local optimizations at the responsibility center level disregarding organizational goals, data manipulation, and management myopia.[290]

With respect to RAPM's impact on managerial long-term orientation, the issue is not about the ambiguously defined expectations entailed in the APM, i.e. not about role *ambiguity*, but about the inherent role *conflict* between a short-term role dedicated to (budgetary/financial) goal achievement and a long-term role devoted to strategic renewal, change, growth, etc.[291] In regard to the above definition, a intra-sender role conflict between multiple (short- vs. long-term) roles (type 4) is at the core of the proposed dysfunctional effect of RAPM on long-term orientation.

The role conflict can be further illustrated in reference to Floyd/Lane's (2000) description of role conflicts in strategic renewal processes. Despite the (narrow) focus on strategy and the missing link to short-term financial goals, the taxonomy contrasts the different expectations that are attached to managerial roles with short- and long-term foci.

In term of strategic role managers can play, they differentiate *competence deploying* roles, *competence defining* roles, and intermediate *competence modifying* roles.

*Competence deployment* aims at maximizing short-term performance through implementation and execution of existing strategies. Characteristic traits of this role are strong leadership and commitment to established norms.

*Competence definition*, on the contrary, aims at maximizing long-term performance through the replacement of existing strategies with an adequate new strategic direction. This role requires (exploratory)[292] innovation and risk-taking.

*Competence modification* falls in between *deployment* and *definition* with the aim to gradually adapt existing strategies taking into account emerging internal and external developments.

The different demands with respect to content, time horizon, and necessary traits and behavior can lead to role conflicts if managers play multiple roles, especially if they comprise both *competence deploying* and *defining* roles at the same time. Floyd/Lane

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[289] Hopwood (1972), p. 159.

[290] Ibid., pp. 162-163.

[291] Such a role conflict would persist even in the absence of any role ambiguity, i.e. if the behavior necessary to achieve the budgetary goals would be detailed explicitly.

[292] Based on the differentiation of exploration (leading to step-change innovation) and exploitation (leading to incremental innovation) by March (1991).

(2000, pp. 163-164) mention increased levels of tension, uncertainty, opportunistic behavior and a decreased level of interpersonal trust as dysfunctional effects of this role conflict.

Phrased in role-theoretic terms, the existing RAPM literature could not finally determine whether the intra-sender role conflict between managerial roles pursuing short-term budgetary goals and those concerned with long-term considerations leads to myopic behavior as one of Hopwood's dysfunctional effects mediated by increased levels of stress, tension, and dissatisfaction.

### *2.5. Social Dimensions of RAPM*

Lastly, the Reliance on Accounting Performance Measures as management accounting practice can also be interpreted as modality of Structuration and its behavioral effects can be traced and explained along the lines of Giddens' three dimensions of the Social (see Section B2.2.3). For illustration purposes, the following analytical decomposition is based on a somewhat extreme form of performance measurement where RAPM is the only relevant practice drawn upon.

With respect to the central dimension of domination, RAPM assigns manager accountability to a set of short-term financial performance indicators and determines the allocation of allocative as well as authoritative resources to individual managers based on their budgetary performance. Consequently, managers are not being held accountable for their activities towards the long run and will not receive resources based on this aspect of their work.

Basis for the execution of power in terms of assigning accountability, measuring performance, and allocating resources to individual managers can be found in the RAPM modalities of signification and legitimization.

With respect to signification, RAPM can be interpreted as an interpretive scheme, which assigns a purely financial value to managerial performance solely based on under-cutting or over-running previously defined short-term budgetary targets. As this indicator of managerial performance only records managerial actions with a direct impact on short-term budgetary targets, no 'value' is assigned to managerial long-term orientation as these activities do not materialize in short-term financial numbers. Considering the limited time and resources available to managers, long-term orientation is even associated with a negative value in the sense of budgetary opportunity costs. Consequently, RAPM appears to be an insufficient interpretive scheme for managerial performance as it is clearly biased towards the short-term and towards a financial perspective.

Closely linked to the distorted interpretation of managerial performance is the role of RAPM with respect to legitimation. The biased assignment of 'value' directly translates into behavioral norms which strongly approve managerial activities directed at meeting these short-term budgets and eventually legitimize financial rewards and other forms of compensation (exclusively) for this favored kind of action. Along these lines, managerial long-term orientation is considered neutral or even wasteful as it diverts management attention and resources from (directly rewarded) short-term activities.

In conclusion, a sole reliance on APM could indeed have a dysfunctional effect on managerial long-term orientation, as it assigns no or even a negative value to actions directed at the long-run (signification), does not specifically encourages this behavior as desired form of managerial conduct (legitimation) and lastly, does not hold managers accountable for their long-term performance and does not use it as basis for resource allocation (authoritative/allocative domination).

For the final assessment of the behavioral effects of RAPM in practice, though, it is important to also include the other relevant organizational practices to decide whether RAPM is indeed the differentiating practice representing the dominant modalities of Structuration that managers actually draw upon when deciding about their long-term orientation.

## 3. Research Gap and Research Questions

Based on the previous description of the research field opened up by the debate on 'economic short-termism', RAPM research and its underlying role-theoretical reasoning, the following chapter will first specify the research gap and demonstrate its relevance especially for middle management (Section C3.1). It will then determine the research scope of the study by narrowing the dependent long-term orientation down to the pivotal long-term *growth* orientation and, at the same time, broadening the set of independent variables in line with the structurationist research perspective to include the relevant organizational context (Section C3.2). Lastly, it will specify the resulting research questions to be addressed (Section C3.3)

### *3.1. Research Gap*

As indicated above, neither the debate on 'economic short-termism' nor the existing RAPM research *documents* the existence of a dysfunctional effect of RAPM on managerial long-term orientation.[293] The former only postulates a potential dysfunctional effect as common belief based on anecdotes while the latter fails to validate the proposed dysfunctionality empirically. Accordingly, Van der Stede (2001, p. 120) concludes that "literature is still inconclusive" and proposes further research to reach a conclusion as to whether budgets "encourage managerial short-term orientation through their focus on short-run budget targets". Hence, the research gap is the insufficient knowledge about the existence, nature, and extent of the alleged dysfunctional effect of RAPM on managerial long-term orientation.

Research in this direction is relevant as (1) some form of accounting-based controls will remain important, while (2) an increasing weight is being put on the encouragement of (middle) managers' long-term orientation and strategic behavior. This implies that the underlying latent conflict between the achievement of short-term (financial) goals and the encouragement of strategic behavior will persist and even gain further importance at the middle management level.

#### *3.1.1. Persistence of Accounting-Based Performance Measures*

Until the mid-1990s, performance measurement techniques have clearly centered on traditional accounting-based measures.[294] The associated emphasis on short-term financial information reflected the control mechanism within divisionalized organi-

[293] In his literature review on the consequences of budgetary control styles, Van der Stede (2000) states that "[s]everal studies in the management literature have indeed documented how an exclusive focus on accounting-based controls may encourage the worst practices of management aiming for short-run profit maximization at the expense of long- term effectiveness and competitive strength" (p.612).

[294] Ittner/Larcker (1998), p. 206; Otley (1999), pp. 370-371; Otley/Fakiolas (2000), p. 508.

zations as well as the information demand of the capital markets.[295] Budgetary targets also adhered to the "dominant themes [of] financial discipline […] and the 'commercial bottom line'"[296] that were characteristic for the 1990s. Since then, there have been growing concerns about the adequacy of these traditional performance measures and critics see a decline in importance for two reasons:[297] The narrow focus on short-term financials is increasingly viewed as problematic due to its potential dysfunctional consequences.[298] In addition, the growing external and strategic focus of management accounting[299] fuels the notion that an exclusive focus on these traditional performance measures is "inconsistent with their relative importance."[300] This development gives rise to alternative performance measures often referred to as Strategic Performance Measures (SPM).[301] They generally represent a more diverse set of performance measures ideally aligned with firm strategy and comprise two approaches: The implementtation of *refined* financial measures and the complementary introduction of *non-financial* measures. The refined financial measures[302] (additionally) take into account a responsibility center's cost of capital and are not distorted by external reporting rules. They include residual income measures like the *Economic Value Added* (EVA®)[303] and measures for the internal rate of return like the *Cash Flow Return on Investment* (CFROI)[304] as well as multiple variations of the two. The non-financial measures[305], often captured in Balanced Scorecards[306], complement the predominant financial perspective with non-financial performance indicators with respect to customers, internal business processes, or aspects of learning and growth.[307] While empirical studies report widespread adoption of these alternative measures[308], the evidence on improvements in performance measurement or firm performance is limited and at best mixed.

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[295] Hayes/Abernathy (1980), p. 70; Kaplan (1984), p. 408; Laverty (1996), pp. 332-333.
[296] Parker/Lewis (1995), p. 212.
[297] Ittner/Larcker (1998), p. 205; Otley/Fakiolas (2000), p. 508.
[298] Cf. Hartmann (2000), pp. 453-464 for an overview on the various dysfunctional effect attributed to RAPM.
[299] Otley/Fakiolas (2000), pp. 508-509; Ittner/Larcker/Randall (2003), p. 715.
[300] Ittner/Larcker (1998), p. 206.
[301] Ittner/Larcker/Randall (2003), p. 715; Chenhall (2005), pp. 295-296.
[302] Ittner/Larcker (1998), pp. 209-217.
[303] Stern/Stewart III/Chew (1995).
[304] Snyder (1995).
[305] Ittner/Larcker (1998), pp. 217-229.
[306] Kaplan/Norton (1992); Kaplan/Norton (1996).
[307] Examples for specific measures are market share, productivity, product quality, costumer and/or employee satisfaction (Ittner/Larcker/Rajan (1997), pp. 231-232).
[308] For residual income measures, cf. Biddle/Bowen/Wallace (1997), p. 302; Wallace (1997), p. 276; Ittner/Larcker (1998), p. 210; Malmi/Ikäheimo (2003), p. 235; for non-financial measures, cf. Ittner/Larcker (1998), p. 217; Hoque/James (2000), p. 7; Rigby (2001), p. 143; Chenhall (2005), p. 396 and Speckbacher/Bischof/Pfeiffer (2003), pp. 361-362 (yet, with comparably low adoption rates in Germany (p.381).

In the case of residual income measures, empirical evidence cannot confirm the alleged superiority of these measures to traditional accounting measures in predicting stock returns.[309] In addition, critics report that the use of residual income measures for performance measurement encourages other types of (potentially) dysfunctional management behavior such as decreasing new investments[310]. Also, these measures are too complex and abstract for use beyond the top management[311]. In the case of non-financial measures, existing studies mostly failed to validate the proposed links between (leading) non-financial indicators and their (lacking) financial counter-parts and could not establish a direct relationship between the use of non-financial measures and firm performance.[312] Many studies also report that the additional cost associated with implementing, running, and maintaining such a complex measurement system often exceed the benefits.[313] Lastly, critics see the risk of information overload and unfavorable trade-offs of the different indicators on the part of the individual manager faced with multiple performance measures.[314] Ittner/Larcker/Randall (2003, p. 239) report that the improvements in measurement system satisfaction associated with both types of alternative measures do not translate into improved (financial) performance. In line with the mixed evidence on the advantages of alternative measures, literature also reports cases of organizations abandoning these alternative approaches in favor of a return to their traditional measures.[315]

Consequently, one should be careful not to neglect the persisting importance of traditional accounting-based performance measures. In fact, Tuomela (2005, pp. 289-299) portrays accounting-based performance measures (still) as "predominant" and "most-widely-used form of diagnostic control" and Dugdale/Lyne (2006, p. 32) find budgeting "alive and well". Otley (2006, p. 303) acknowledges the emergence of *supplementary* measures but deems budgetary control as "the backbone of management control systems." Therefore, the study adopts Hartmann's (2000, p. 476) assessment that "'some form' of accounting based controls will remain important". Under this assumption, the dysfunctional aspects of RAPM also remain pivotal.

### *3.1.2. Increasing Relevance at the Middle Management Level*

The issue of dysfunctional effects of RAPM on managerial long-term orientation appears especially relevant at the middle management level. On the one hand, these managers are faced with the persistence of APM as described above. Frow/

309 Cf. Ittner/Larcker (1998), pp. 210-211 and the referenced studies.
310 Wallace (1997), p. 297.
311 Ittner/Larcker (1998), p. 214.
312 Ibid., p. 218.
313 Ibid., p. 223.
314 Ibid., pp. 226-227, 229.
315 E.g., Ibid., p. 215 (on residual income measures) and Speckbacher/Bischof/Pfeiffer (2003), p. 380 (on non-financial measures).

Marginson/Ogden (2005, p. 270), for example, see a "continued exposure to traditional budgetary control systems" at the middle management level. At the same time, these managers are now increasingly challenged to exhibit long-term orientation and to behave strategically, i.e. to pursue initiatives that achieve strategic adaptation and change and thereby ensure innovation, growth, and long-term survival of the company.

The latter development is grounded in the increasing relevance of middle managers with respect to innovation and strategic change and renewal.[316] In the late 1980s and early 1990s, middle managers were largely viewed as obstacles in the path of renewal and change – they were said to "slow things down, increasing the distance between the customer and the corporate response."[317] Consequently, organizational 'delayering' efforts were predominantly aimed at eliminating excess positions in middle management. Since then, a new perspective on the strategic role of middle management has emerged which, quite on the contrary, depicts its role as "critical"[318] and "pivotal"[319] for strategic change and renewal. As 'anchor', 'facilitator' or 'champion' of strategic initiatives[320], they contribute greatly to strategy and companies increasingly rely on their creativity and innovation to safeguard organizational survival.[321] Bartlett/Ghoshal (1993, p. 44) see the middle manager as "information broker and capability integrator" highlighting its crucial "hinge"[322] position both vertically and horizontally:[323]

Vertically, middle managers bridge the information gap between the top and lower management. Top-down, they provide for the proper transmission of corporate goals throughout the organization and create and maintain credibility and trust for these (short- and long-term) objectives. In addition, they facilitate strategic initiatives through resource allocation as well as through coaching and direct management support. Bottom-up, they screen, select, and interpret information for the top management as "filtering mechanism" thereby influencing strategic decision-making. Additionally, they also directly shape the strategic agenda by advocating 'grass-roots' initiatives as one form of bottom-up strategy-making.[324]

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[316] Dutton *et al.* (1997), p. 407; Floyd/Wooldridge (1997), p. 482; Marginson (2002), p. 1019; Frow/Marginson/Ogden (2005), p. 270.

[317] Floyd/Wooldridge (1994), p. 47.

[318] Bartlett/Ghoshal (1993), p. 32.

[319] Ibid., p. 34.

[320] Ibid., pp. 35, 38, 44; Floyd/Lane (2000), p. 158.

[321] Floyd/Wooldridge (1997), p. 465; Marginson (2002), p. 1019.

[322] Euske/Lebas/McNair (1993), p. 288.

[323] Cf. in the following Bartlett/Ghoshal (1993), pp. 29-44; Euske/Lebas/McNair (1993), pp. 288-289; Floyd/Wooldridge (1997), pp. 466-467; Floyd/Lane (2000), pp. 158-159.

[324] The top-down roles are also referred to as 'implementing' and 'facilitating' roles and the bottom-up roles as 'synthesizing' and 'championing'; cf. for example Floyd/Lane (2000), p. 159.

Horizontally, they foster and ensure coordination and integration across functions and business units in order to link and leverage skills, knowledge, capabilities, and ultimately strategies throughout the organization.

Due to their newly defined strategic role, middle manager "increasingly find themselves having to balance their continued exposure to traditional budgetary controls and imperatives […] with more broadly based but no less intense demands imposed by the need to pursue strategic initiatives."[325] The need to balance predictable goal achievement and strategic behavior creates an inherent tension which again can be interpreted in role-theoretical terms as intra-sender role conflict caused by divergent standards of evaluation, each associated with a different kind of role behavior (see Section C2.4.1). The alleged dysfunctional effect of traditional accounting-based controls on managerial long-term orientation would add to this tension. The intended research effort therefore appears particularly relevant at the middle management level. The conclusion is also in line with Floyd/Lane's (2000, p. 165) proposition that middle managers "are more likely to experience strategic role conflicts [between competence defining and deploying roles, see Section C2.4.2, OG] than managers at other levels."

In sum, there is a research gap in understanding if and to what extent RAPM exerts dysfunctional effects on the long-term orientation of middle managers and how these effects could be countered.

### *3.2. Research Scope*

After the identification of the research gap, this section will further specify the scope of the research project. It will start out with a review of existing concepts of managerial long-term orientation and will then select long-term growth orientation as (one) critical aspect of long-term orientation not yet explored (Section C3.2.1). Finally, it will outline how the study incorporates the notion of the relevant organizational context as characteristic of the Structurationist research perspective (Section C3.2.2).

#### *3.2.1. Long-Term Growth Orientation as Part of Long-Term Orientation*

In literature we find many notions of 'managerial long-term orientation'. Examples include the "pursuit of strategic adaptation and change"[326], the pursuit of "strategic initiatives"[327] or "longer-run entrepreneurial activities"[328], "concerns for long-term positioning, change and growth"[329] as well as related constructs like "initiating and funding new projects"[330], "commitment to innovation"[331] or "imagination and […]

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325 Frow/Marginson/Ogden (2005), p. 270
326 Marginson/Ogden (2005), pp. 436,438.
327 Frow/Marginson/Ogden (2005), p. 270.
328 Dent (1990), p. 3.
329 Heidmann (2008), p. 71.
330 Van der Stede (2000), p. 612.

technical daring."[332] Often, studies[333] also negatively define the *absence* of long-term orientation as myopic or (excessive) short-term orientation in the sense of "aiming for short-run profit maximization"[334] and "undervaluing the long-run."[335]

Yet overall, literature has not arrived at one shared perspective on long-term orientation and, consequently, has also not yet agreed upon an adequate operationalization. Even though the above listed concepts generally have much in common in terms of content and direction, the various definitions differ both by scope and focus. In terms of scope, there are both broad, inclusive concepts like the pursuit of strategic adaptation as well as more specific ones like the funding of individual new projects. In terms of focus, one can differentiate between orientation as intention or motivation (e.g., concern, commitment, or aim) and orientation as specific management action (e.g., initiation, facilitation, or pursuit of activities or projects). In addition, these concepts all lack a detailed, formal definition as well as a proper operationalization. The variety of competing concepts as well as the missing definitional depth are also in line with Van der Stede's (2000, p. 620) assessment that "the notion of managerial short-term [and long-term, OG] orientation is difficult to conceptualize and measure."

As a consequence, the use of the managerial long-term orientation construct in previous RAPM research has been rather limited with a small range of narrow operationalization described in the following.

The most frequently used *managerial time orientation* (MTO) construct, which measures a manager's time allocation towards long-term issues, can be interpreted in the above logic as an indicator for long-term orientation in terms of action. The (indirect) measurement of managerial behavior is problematic as it rests on the implicit assumptions that (1) the time amount spent on long-term issues reflects adequately and proportionally a manager's long-term orientation in terms of his actions towards these issues and that (2) the relationship is stable over time and comparable across a specific management population. Yet, in fact, one manager might only spend a small fraction of his time on the selection and review of long-term initiatives providing vital strategic guidance while another manager might spend large amounts of his time on elaborate long-term planning efforts that do not translate into action. In this sense, the measurement of pure time allocation does not appear to be an adequate indicator of long-term orientation, as "focus may not pick up on importance."[336] Due to these defi-

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[331] Ibid.
[332] Hayes/Abernathy (1980), p. 68.
[333] Laverty (1996), p. 825.
[334] Van der Stede (2000), p. 612.
[335] Merchant/Bruns (1986), p. 56; Merchant (1990), p. 301; Laverty (1996), p. 825; Van der Stede (2000), p. 612.
[336] Van der Stede (2000), p. 620.

ciencies, the study will not rely on the time orientation concept to measure long-term orientation.

The timing of expenditures for maintenance and repair collected by Hopwood (1972, pp. 171-172) as measure of long-term orientation *directly* measures managerial action but can only be employed in a specific (manufacturing or operational) context. In addition, it also has a tactical rather than strategic character as it relates to shifting expenditures from months with low production levels to those with high levels.

Lastly, Merchant's (1990, pp. 303-304) "discouragement of new ideas" instrument aims at capturing a motivational aspect of long-term orientation but, as mentioned above[337], Merchant himself seriously questions the applicability of his instrument in future RAPM research.[338]

Due to the apparent lack of existing *comprehensive* measures of long-term orientation, the study chooses a targeted approach and focuses on the motivational aspects of managerial long-term orientation using the following rationale: A manager's motivations and intentions are the prerequisite for his actions and overall behavior. Therefore, in lack of a dominant (action-centered) conceptualization of long-term orientation, this poses a logical starting point for systematic query into the domain of long-term orientation. In addition, orientation in terms of managerial decision-making and actions is more context-specific and thus complicates, for example, the comparison of long-term orientation across functional or business units and also across time.

In terms of scope of the motivational measure, the study aims to focus on one specific aspect of long-term orientation to arrive at an unequivocal operationalization and to allow for a more specific and, thus, potentially more meaningful interpretation of the study results.

The study chooses the managerial orientation towards long-term sales growth as key dependent variable. The *long-term growth orientation* (LGO) is defined as

> *'the importance, which the individual manager attributes to long-term sales growth as corporate goal.'*

The definition follows Autio/Sapienza/Almeida (2000, p. 917) who define growth orientation[339] as "importance of growth to a firm". Yet, in line with Nummela/ Puumalainen/Saarenketo (2005, p. 9), who likewise narrow this concept down to *international* growth orientation, the study confines the inquiry to *long-term* growth orientation to capture strategic rather than tactical considerations. The exact

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337 See Section C2.3.

338 Merchant (1990), p. 308.

339 Synonyms include *growth aspiration*, *growth intention*, and *willingness to grow* (Nummela/ Puumalainen/Saarenketo (2005), p. 8).

specification of the short- and long-term horizon in terms of planning years should reflect the business dynamics and planning horizons of the particular object of inquiry.[340] In addition, the study centers on the individual manager as object of analysis and therefore does not define growth orientation as property of an organizational but as individual characteristic. With growth orientation representing an "attitudinal concept, based on subjective evaluation"[341], a definition centering on the individual manager also seems to be more suitable for empirical research than the previous application to organizational entities.

The choice of long-term growth orientation ties in with Heidmann's (2008, p. 71) notion of long-term orientation as "concerns for long-term […] growth" and reflects both the relevance of growth in practice as well as findings of academic research justifying the prominent positioning of growth as corporate goal.

A large number of recent publications in practitioner journals deal with the issue of achieving and maintaining sustainable sales growth. On the one hand, they underline the relevance of growth as "do-or-die"[342] issue and establish its vital role for the long-term profitability and survival of corporations.[343] In addition, they provide extensive guidance as to how companies can best detect and capture growth opportunities through the identification of its sources[344] and drivers[345] and through the adjustment of processes[346] and organizations[347], accordingly.

In academic research, sales growth is – together with profitability – generally considered to be a "vitally important"[348] organizational performance indicator impacting firm value.[349] Studies have documented both a direct positive impact on firm value[350] as well as an indirect positive effect via a positive impact on profitability.[351]

The central role of sales growth – both in practical as well as in theoretical terms – justifies the study's deliberate focus on (long-term) growth. Finally, growth orientation is considered to be the necessary (yet, not sufficient) prerequisite for growth.[352] In

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340 See specification of the long-term growth orientation construct in Sections E2.2 and F2.1.
341 Nummela/Puumalainen/Saarenketo (2005), p. 8.
342 Smit/Thompson/Viguerie (2005), p. 405.
343 Seurat (1999); Heffes/Sinnett (2006).
344 Oliva (2003); Joachimsthaler (2007).
345 Baghai/Smit/Viguerie (2007).
346 Stewart (2006).
347 Mohrman (2007).
348 Varaiya/Kerin/Weeks (1987), p. 487.
349 Ibid; Cho/Pucik (2005), p. 555; Tsay/Goo (2006), p. 763.
350 Varaiya/Kerin/Weeks (1987), p. 496.
351 Cho/Pucik (2005), p. 569.
352 Nummela/Puumalainen/Saarenketo (2005), p. 8.

conclusion, *managerial long-term growth orientation* measures an important attitudinal prerequisite for a highly relevant strategic goal.

This general assessment is also in line with the observations at the researched company which regards managerial long-term growth orientation as one of their most pressing strategic issues (see Chapter D2).

### *3.2.2. The Relevant Organizational Context*

As a consequence of the Structurationist foundation of the research project, the (particular) organizational context of RAPM in practice is deemed central to understanding potential dysfunctional effects (see Section B2.2.2). Contrary to most previous RAPM studies, the contextual variables are not included in the sense of contingency factors to decide where and when RAPM is more or less 'appropriate'.[353]

Instead, the study will analyze the consequences of RAPM in one specific context and explore the linkages to and interplay with other organizational properties. These properties are perceived not as given contingencies but moreover as action variables, which can be adjusted together with the extent of RAPM in order to achieve an optimal setup to best balance considerations for the short- and long-term. Specifically, the study aims at identifying the most important 'other relevant organizational practices' impacting long-term growth orientation besides RAPM. The impact of these practices will then be contrasted with the (alleged) dysfunctional effect of RAPM to (1) determine the relative importance and thus the overall relevance of RAPM and any dysfunctionalities in the specific organizational context and to (2) identify levers to counter the dysfunctional relationship and encourage long-term growth orientation.

[353] Hartmann (2000) names "the frequent use of contingency frameworks in which the contextual appropriateness of RAPM is analyze" as common element of existing RAPM studies (p. 455).

### *3.3. Research Questions*

Based on the identified research gap and the subsequent scoping of the research project, the study aims to answer the following three research questions:

1. Does RAPM have a dysfunctional effect on managerial long-term growth orientation?
2. Which other organizational practices impact long-term growth orientation?
3. How relevant is RAPM with respect to managerial long-term growth orientation considering the other organizational practices?

The first question is confirmatory in nature as literature provides the alleged dysfunctional effect as a distinctive hypothesis to be tested that is well-founded in role-theoretic considerations. The study aims to make a contribution to literature by reconciling the contradictory results of anecdotal evidence in favor of the dysfunctionality and quantitative findings unable to support this proposition.

The remaining two questions have an exploratory focus as previous research has not yet systematically assessed the relevant organizational context of RAPM in practice and its (relative) impact on managerial long-term growth orientation. While question 2 aims at rendering potential levers to counter the dysfunctional effect of RAPM, question 3's main contribution would be to assess the overall relevance of that dysfunctionality considering other drivers of managerial long-term orientation.

In practical term, the study aims to decide whether managers need to take into account the dysfunctional effects of RAPM on long-term growth orientation. This would be the case if the dysfunctional relationship was confirmed and its strength considered substantial relative to the impact of other organizational factors. In addition, the study wants to identify promising levers managers can employ in order to counter any dysfunctional effects on long-term growth orientation.

# D Research Design

The following chapters outline the study's research approach (Chapter D1) and introduce the research site, a large divisionalized German manufacturing company (Chapter D2).

## 1. Research Approach

This chapter explains the study's choice of a n=1 case study based on the Structurationist research perspective (Section D1.1) and describes the two-staged research approach of combining qualitative and quantitative methods (Section D1.2). It then outlines the crucial case strategy with respect to enabling generalization of the study results (Section D1.3) and finally shows how the study's survey design addresses conceptual and methodological issues of previous RAPM studies (Section D1.4).

### *1.1. Case Study Approach*

Apart from equipping the researcher with a distinct ontological mindset as 'sensitizing device', conducting management accounting research informed by Structuration Theory holds specific implications with respect to the research approach (see also Sections B1.5, B2.2.2, and B2.2.4):

RAPM should be analyzed as social practice, i.e., the research effort should not be directed towards properties of (formal) management accounting systems. Instead, it needs to center on the perception, interpretation, and enactment of the related structuring properties of management accounting by individual managers. The way each manager perceives the use and relevance of accounting-based controls eventually determines both individual action as well as the action of organizational entities as aggregation of individual acts. Perception is likely to differ among individual managers and potentially diverts substantially from the intended effect of the formal control system. The study therefore focuses – as indicated above[354] – on the individual manager as unit of analysis and tries to link managerial behavior to practices rather than to the formal systems of management accounting.

In addition, the RAPM practice will be analyzed against the background of a particular organizational context which provides complementary and potentially competing modalities of structuration and, thus, greatly impacts the behavioral effects of RAPM. This requires a case study approach because it allows the researcher to explicitly 'get to know' the object of social inquiry and its (unique) organizational context.[355] On the one hand, such case study approach has to be broad and inclusive enough to identify

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[354] See the operationalization of *individual* long-term growth orientation as dependent variable in Section C3.2.1.

[355] Eisenhardt (1989), p. 534; Otley/Berry (1994), p. 46; Yin (2003), p. 13.

all other relevant organizational practices beyond management accounting. On the other hand, the researcher has to achieve sufficient depth of his analysis to enable a meaningful interpretation of the interplay between the different organizational practices in determining individual (and organizational) action. In line with these requirements, the study was conducted as n=1 case study in different business units of a single large organization.[356]

Even though the chosen institutional analysis approach puts a focus on structural aspects 'bracketing' the process of individual agency, the *Duality of Structure* paradigm, nonetheless, requires for the researcher to consider the influence of individual agency on managerial behavior. Consequently, the analysis of antecedents for managerial behavior is not per se confined to 'structural' elements but also aimed at the inclusion of relevant aspects of individual agency, such as for example individual predispositions in terms of personality traits.

### *1.2. Two-Staged Design*

In order to answer the three research questions against the background of the strutura-tionist research perspective, the study follows a two-staged research approach through the combination of field interviews and a questionnaire survey.

The intention of the initial series of semi-structured interviews was to establish a detailed understanding of the particular organizational context and the RAPM issue in practice. Specifically, the role and relevance of RAPM in the particular context was gauged and its dominant behavioral effects with respect to long-term growth orientation explored. In addition, potentially important other organizational practices with an impact on long-term growth orientation were identified. The subsequent survey then tested the hypothesis on the dysfunctional effect as well as the emerging propositions about the organizational context on a large middle management population.

In terms of the prevailing research methodology (see Section B2.2.4), the study abandons the dogmatic dichotomist view on qualitative vs. positivistic research. Instead, it purposely complements the qualitative elements inherent in the interpretive case study approach with positivistic elements of the questionnaire survey aimed at testing specific research propositions. The motivation for this procedure is the conviction that both methodological approaches can indeed engage in a fruitful dialogue.[357] On the one hand, the profound understanding of the organizational context gained through qualitative research is likely to allow for a much more sophisticated and meaningful interpretation of the survey results. On the other hand, the quantitative

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[356] The confinement to just one case is sufficient considering the 'crucial case' research strategy (see Section D1.3).

[357] Eisenhardt (1989) – even though relating to method and not methodology – describes the combination of qualitative and quantitative evidence as "highly synergistic" (p.538).

survey results both triangulate and challenge the findings derived from the interviews and aid the carve-out of theoretical findings from the qualitative body of evidence.

The two-staged research design also mirrors the setup of a similar study by Merchant (1990) on the effect of financial control on data manipulation and management myopia. The study starts out with a field study phase comprising largely unstructured interviews at two deliberately chosen companies with the first acting at the pilot site. The exploratory effort is then followed by a targeted survey at the second company. Merchant argues that the field study part added greatly the preparation, design and successful conduct of the questionnaire survey and eventually also allowed for a "better appreciation of the findings" (p. 298).

### *1.3. Crucial Case Setup*

The choice of a case-based survey with a single research site inevitably raises the issue of generalizability of the results as the inductive extension to the basic population cannot be legitimated by means of statistical inference. In fact, case studies are (still) largely considered to render only anecdotal evidence.[358] Nonetheless, Keating (1995, pp. 72-73) introduced the seemingly self-contradictory notion of "theory refutation case research" which has the potential to disconfirm theoretical propositions by providing (only) one "critical case"[359] as counter-example. While he exclusively stresses the potential to reject theories in a Popperian tradition, Lukka (2005, pp. 386-387) attributes to "theory testing case research" both the ability to *support* or *disconfirm* theory.

This research strategy is based on two basic features of empirical theory testing: (1) empirical evidence is always an incomplete representation of the researched phenolmenon; (2) each proposition – if formulated in absolute terms – requires only one contradicting observation to be refuted. Consequently, theory testing case research abandons the concept of a statistically significant yet (still) incomplete *random sample* in favor of the *deliberate selection* of one or a few "crucial" or "deviant"[360] cases that could potentially support or disconfirm the proposition to be tested. Such a crucial case setup can either pursue a *most-* or *least-likely* scenario. In a *most-likely* setup, a theoretical proposition is tested in a case were – given the existing theory – the proposition is most likely to hold. If the empirical evidence (even in this extreme case) contradicts the proposition, there is strong disconfirming evidence and the theory's validity might even suffer "irreparable damage"[361]. In the contrary least-likely setup, a proposition is tested in a case where it is least likely to hold. If the empirical evidence (even under

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[358] Lukka/Kasanen (1995), p. 76.
[359] Otley/Berry (1994), p. 76.
[360] Keating (1995), p. 72.
[361] Ibid.

these circumstances) supports the proposition, there is strong supportive evidence for the proposition. Even though both strategies pose viable routes in the pursuit of theory advancement, the explanatory power of a failed confirmation in a most-likely scenario is considered higher as it generally allows for the final rejection of a theory in terms of a Popperian falsification.

Consequently, the study counters the issue of limited generalizability through the means of a 'crucial case' approach in a 'most-likely' scenario. The case was therefore deliberately chosen to combine a strong RAPM with substantial concerns about a limited long-term growth orientation of the middle management. In such a case, the existence of the alleged dysfunctional effect appears 'most-likely' and it can be expected – based on the underlying role-theoretical considerations – to find significant quantitative proof in a questionnaire survey. If even this setup does not yield a significant dysfunctional effect, it has to be put in question. Possibly, a revisit of the common belief of a dysfunctional effect of the RAPM on managerial long-term orientation with respect to the study's research focus, i.e. concerning the long-term growth orientation of middle managers has to take place.

### *1.4. Survey Design Parameters*

In terms of the survey design, the study counters four conceptual and methodological issues that have been criticized in previous RAPM studies.

In regard to the concept, the survey avoids a broad and unspecific definition of RAPM as criticized by Hartmann (2000, pp. 466-467) but builds instead on the RAPM decomposition by Van der Stede (2001) to specifically address the time-frame aspect of RAPM with the sub-dimension *emphasis on meeting short-term budgetary targets* (see Section C2.1). The survey also introduces the concept of *managerial long-term growth orientation* as distinct and relevant attitudinal aspect of *managerial long-term orientation* in response to the acknowledged difficulties to conceptualize and measure the construct and the clearly stated limitations of constructs solely relying on *managerial time allocation* as indicator of long-term orientation (see Section C3.2.1).

In regard to methodology, the survey only comprises adaptations of existing proven constructs to prevent limitations due to reliability and validity issues that have been attributed to newly developed operationalization in previous RAPM studies.[362] Lastly, the survey is based on a comparably large sample (n = 412) to minimize limitations with respect to significance – small sample size is a common characteristic of many RAPM studies.[363]

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[362] Merchant (1990), p. 311.
[363] Hartmann (2000), p. 469.

## 2. Research Site

The research was conducted between February 2006 and June 2007 at a large divisionalized German manufacturing company with > 10,000 employees, > EUR 10 bn in annual revenues, and a global presence in all of its key segments. The analysis encompassed the corporate center as well as six business units[364] which differ greatly by industry (e.g., consumer vs. industrial goods), competitive position (e.g., majority vs. minority market share), and market dynamics (e.g., long vs. short innovation cycles). The study purposely targeted such a diverse set of sub-units to control external factors like environmental uncertainty or strategic posture which have proven influential in previous RAPM studies employing contingency approaches.[365] Comparable results across these different business units would lower concerns about these external factors systematically thereby distorting the results.

Until recently, the company had a track record of persistent above average[366] sales growth fueled both by inorganic expansion (mergers and acquisitions) and especially by a multitude of market-shaping innovations translating into substantial organic growth additions in the respective business units. The company is also known for a generally strong and effective management control system that ensures financial discipline which translates into a solid financial performance record of double-digit profit growth over the past decade.[367] The continuation on the path of sustained profitable growth entails the need to balance long-term growth orientation and short-term performance consideration. In general terms, the company presents an adequate setting to test the study's propositions on the dysfunctional effect of RAPM on managerial long-term growth orientation.

Furthermore, a number of company characteristics and recent developments qualify the case as a most-likely setting to assume the existence of the dysfunctional effect:

Despite a historically strong engineering culture, the company has recently put an increased emphasis on individual accountability for financial targets and thus strengthened the reliance on accounting performance measures. A three-year corporate transformation program specifically intends to stress cost and asset allocation levers to achieve the value-based targets and to foster an increased profit-orientation to complement the engineering mindset.[368] In line with this intention, the incentive system for

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[364] The questionnaire survey was eventually conducted at five of the six business units.

[365] Cf. Hartmann (2000), pp. 456-462 for an overview of contingency factors employed in previous RAPM research.

[366] Total sales CAGR with respect to market growth rates. Source: Annual reports.

[367] Profit before tax CAGR. Source: Annual reports.

[368] "Concerning the target achievement, the one-sided focus on sales measures was reduced and complemented with cost measures". Source: Company presentation - Final report of the transformation program.

the middle management (second and third management level) centers on financial performance indicators referring to the current budgetary year and does not comprise a long-term component. This increased profit-orientation is accompanied by a strong increase in profit growth rates.[369]

On the other hand, there are growing concerns about the sustainability of the company's growth performance level and also about the long-term orientation of individual managers. Over the past decade, the sales growth rates developed in diametrical opposition to the profit increase and almost halved as previous path-breaking innovations face market saturation and substitution threats.[370] Also, the company's main motivation to partake in the research cooperation was to better understand the apparent trade-off of profit and growth as well as to identify drivers and inhibitors of managerial long-term growth orientation in order to better foster strategic behavior.

In sum, these characteristics are strong indicators that the increased emphasis on budgetary targets has 'most-likely' led to the currently unsatisfactory levels of managerial long-term growth orientation and overall growth rates threatening future performance.

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[369] The profit before tax CAGR increased by >50% for the period '01-'06 vs. '96-'01. Source: Annual reports.

[370] Total revenue CAGR for the period ´96-´01 vs. CAGR ´01-´06. Source: Annual reports.

# E Field Interviews

The approach and findings of the qualitative first research phase are at the center of this part of the study. It first outlines the purpose of the field interviews (Chapter E1) and describes the details of the method employed (Chapter E2). Then it reports the main findings of the first research phase and deducts the specific propositions to be tested in the questionnaire survey of the second research phase (Chapter E3).

## 1. Purpose

In line with the overall research approach outlined above (see Chapter D1), the series of initial field interviews was intended to explore the unique organizational context at the researched company. This includes the creation of a detailed understanding of the particular RAPM practice in terms of how the structuring properties of budgetary controls are enacted in day-to-day operations, how and to which extent the practice affects managerial behavior, and how relevant RAPM is compared to other relevant practices.

Apart from the general exploration of RAPM in practice, the field interviews also pursued two more specific goals vital for the achievement of the study's research targets. First, the interviews were supposed to confirm the 'most-like' character of the case by assessing the extent of RAPM and myopic management behavior at the research site and gathering anecdotal evidence on the dysfunctional relationship of RAPM and managerial growth orientation. The verification of the crucial case setup is required for any conclusions the study draws on the dysfunctional effect of RAPM beyond the case environment.

Second, the study tried to identify the most important 'other organizational practices' with an impact on managerial long-term orientation based on the interviews. These practices represent the competing modalities of Structuration a manager draws upon apart from RAPM when determining his long-term growth orientation. The most prominent ones were to be included in the questionnaire survey for further quantitative analysis of their (relative) impact.

For the remaining course of the study, both the rich understanding and the rapport with senior managers proved helpful in two ways. With respect to the quantitative research phase, it allowed for firm-specific tailoring of the questionnaire and secured senior management endorsement of the survey to increase both the response rate as well as the quality of the survey results. With respect to interpreting the study results and deriving managerial implications, the study could draw both on the profound inside knowledge of the organizational context as well as on direct feedback and suggestions from senior managers gathered in presentations of the preliminary results to former interview partners.

## 2. Method

During the field interview phase, which was conducted in Q1 and Q2 of 2006, 16 managers were interviewed in a series of 14 semi-structured interviews followed by two group discussions.

The following sections describe the selection of informants (Section E2.1), the semi-structured interview approach (Section E2.2), and the aggregation of results in group discussions (Section E2.3).

### *2.1. Selection of Informants*

Organizational research and especially the in-depth study of intra-organizational social relationships[371] often relies on the so-called 'informant technique'.[372] 'Informants' are "knowledgeable participants, who observe and articulate social relationships for the researcher"[373]. Other than 'respondents', who report on their *own individual* behaviors, opinions, or feelings, 'informants' *summarize* actual (or prescribed) behavior and report *patterns* of organizational behavior. In this case, the use of APM and its consequences in combination with the particular context represent such patterns as objects of organizational inquiry.

As far as the selection of informants is concerned, the goal is not to arrive at a statistically representative sample of the organization but to identify members of the organization who are knowledgeable, at the same time willing to communicate, and, lastly, accessible to the researcher.[374] Because literature has identified a number of significant drawbacks in relying on the "social judgment"[375] of informants,[376] studies strongly recommend the use of multiple informants to increase both reliability and variability of reports.[377]

In this study, access was generally granted to all management levels and functions below the corporate top management team (TMT) both at the corporate center and at all business units selected for the research. Yet, the total number of interviewees was

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[371] Kumar/Stern/Anderson (1993) describe the constructs of interest as "unobservable, theoretical, and accessible only as shared constructions about what a focal organizational is and does" (p.1635). RAPM as organizational practice qualifies as such a construct.

[372] Seidler (1974), pp. 816-818; Phillips (1981), pp. 395-397; Kumar/Stern/Anderson (1993), pp. 1633-1634; van Bruggen/Lilien/Kacker (2002), p. 469.

[373] Seidler (1974), p. 816

[374] Ibid., p. 817; Phillips (1981), p. 396; Kumar/Stern/Anderson (1993), p. 1634.

[375] Phillips (1981), p. 397.

[376] The 'informant bias' includes both issues related to sampling (e.g., observations and perceptions of organizational patterns systematically varies between informants and non-informants) and to cognitive deficiency (e.g., hindsight bias or other memory failures by the informant). Cf. Ibid; Kumar/Stern/Anderson (1993), p. 1634.

[377] Kumar/Stern/Anderson (1993), p. 1634; van Bruggen/Lilien/Kacker (2002), p. 469.

restricted to approximately 10-20 in order to limit the binding of management capacity and also in consideration of the subsequent large scale survey.

Due to these restrictions and the prospect of submitting a questionnaire survey to a large middle management population, the field interviews were not conducted with a middle management sample but with a number of senior management informants who were supposedly knowledgeable about the middle management population, the strategic issues it faces, and the systems and processes it is subject to. The sample was to include both managers with a business unit perspective and members of the corporate center who were able to summarize in the above mentioned sense across different business units. The selection of specific individual managers was done together with the senior management sponsor of the research project. It reflected the manager's tenure in the position and with the company to ensure knowledgeability and his presumed willingness to share his perspective on organizational issues.

This approach resulted in the following sample (see Table 3 for details):

In line with previous studies, which frequently chose a company's owner or general manager as (key) informants[378], the sample comprised three Chief Executive Officers (CEOs), three Chief Financial Officers (CFOs) and one Head of Sales from the business unit top management team who combine knowledge of their middle management team with insights into the specific business and its current strategic challenges and priorities.

On the business unit side, their perspective was enriched by the reports of three Heads of Business Development who were specifically familiar with the strategy process and the issues of developing and implementing strategic initiatives.

On the corporate center side, the sample included the Head of Talent Management and the Head of Management Development to capture their aggregated perspective on the behavior and priorities of the middle managers. In addition, the Head of Internal Accounting, the Head of Strategy, and the Head of Management Accounting were chosen to analyze the company's processes and systems involved in long-term planning, strategy-making and performance management. Lastly, the former project leader of the corporate transformation program was also interviewed to explore the intentions and results of the program for the assessment of its impact on organizational and cultural properties.

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378 Kumar/Stern/Anderson (1993), p. 1635.

| Number | Organizational unit | Participant(s) | Duration |
|---|---|---|---|
| 1 | Corporate Center | Head of Internal Accounting | 70 min. |
| 2 | Corporate Center | Head of Strategy | 110 min. |
| 3 | Corporate Center | Project Leader Transformation Program | 70 min. |
| 4 | Corporate Center | Head of Management Accounting | 50 min. |
| 5 | Corporate Center | Head of Talent Management | 70 min. |
| 6 | Business Unit D | CEO<br>CFO | 140 min. |
| 7 | Business Unit C | CFO | 80 min. |
| 8 | Business Unit B | CFO | 70 min. |
| 9 | Business Unit B | Head of Business Development | 70 min. |
| 10 | Business Unit F | Head of Sales | 105 min. |
| 11 | Business Unit A | Head of Business Development | 70 min. |
| 12 | Business Unit F | CEO<br>Head of Business Development | 95 min. |
| 13 | Business Unit A | CEO | 70 min. |
| 14 | Corporate Center | Head of Top Management Development | 70 min. |

*Table 3: Overview Field Interviews*

### 2.2. Semi-Structured Interviews

The interviews were conducted with the help of interview guidelines and consisted of three parts.

As a start, the background and intentions of the research project were described and a shared understanding of long-term (growth) orientation as pertaining to sales growth over a horizon of 4-8 years[379] was established.

The second part asked the interviewee to describe and rate the current long-term orientation of the middle management in his business unit (BU informant) or overall (corporate center informant) and included questions like "how do you assess the long-term growth orientation of middle managers (in general/within your business unit)?" After the (descriptive) assessment, the interview continued with the exploration of organizational factors that might have a potential impact on managerial long-term growth orientation with open-ended questions like "which factors, from your point of view, are key promoters or inhibitors of a stronger long-term growth orientation?"

In contrast to the exploratory notion of part two, part three finally 'tested' the impact of RAPM and other emerging factors with the interviewee (in a qualitative and anecdotal sense). Questions on the role and relevance of RAPM included: "How do you assess the relationship of short- and long-term value drivers with respect to performance management?" or "how are the managers currently incentivized towards long-term

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379 The company's planning regime differentiated short-term planning pertaining to the budget year 1, a mid-term planning including year 1 to 3 and a long-term perspective covering 8 years.

growth?" With the emergence of other organizational factors like strategy-making and corporate entrepreneurship, specific questions like "how would you characterize the company's strategy-making process?" and "how does the current strategy-making practice impact individual long-term growth orientation?" were added.

Each interview concluded with a final section for additional comments and expectations on the research project to provide room for the interviewee to mention any aspects not covered by the interview guidelines or touched upon in the course of the interview.

The interview guidelines were constantly updated to reflect the previous findings. With respect to analyzing other organizational factors, the initial interviews followed a generic structure and asked the managers about the impact of (1) (formal) systems, tools, and processes; (2) individual skill- and will profiles; (3) cultural properties. During the course of the field interviews, this part became increasingly structured along the most prominently and frequently mentioned factors.

The duration of the interviews ranged from 60 to 120 minutes (see Table 3). The interviews were either taped or captured in detailed interview notes immediately after the interview if taping was not desired.

### *2.3. Group Discussion*

Field data gathered in a multi-informant approach often comprises (partially) diverting or even contradictory social judgments.[380] The lack of agreement poses the question of how to aggregate the individual data points into one composite group response. The issue has not yet been finally solved and literature proposes two general strategies which van Bruggen/Lilien/Kacker (2002, p. 417) refer to as "mathematical" and "behavioral" methods of aggregation.[381]

The mathematical aggregation relates to the calculation of a group score based on the individual data points. Procedures range from simple weighted or unweighted averaging to more sophisticated models of statistical pooling or structural equation modeling. All of these procedures can only be applied if the constructs under inquiry have been quantified by the informants.

While the mathematical aggregation does not involve the participation of the informants, the behavioral aggregation method aims to reach consensus through the means of group discussions among the informants. A shared position should be developed through a "heated, intense, and biased confrontation between somewhat biased ideas of

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[380] Kumar/Stern/Anderson (1993), pp. 1636-1637; van Bruggen/Lilien/Kacker (2002), pp. 471-472.

[381] Kumar/Stern/Anderson (1993) refer to the behavioral method as "consensual approach" and differentiate mathematical approaches into the simple pooling "aggregation approach" and the more sophisticated "latent trait approach" involving SEM. (pp. 1636-1637).

somewhat biased individuals"[382]. Despite the additional effort and issues related to achieving agreement in group discussion[383], literature claims that behavioral aggregation can improve the validity of data to approach a somewhat 'objective' assessment.[384] In addition, the close following of the process of arriving at a consensual response is said to further increase the researcher's understanding of the organizational phenomenon.

As the series of semi-structured field interviews was not designed to render quantitative data but rather qualitative information, the study pursued a behavioral aggregation approach involving the group discussion of the interview findings in order to achieve a shared perspective on the role and relevance of RAPM and the most influential other organizational factors. Due to the availability of informants and scheduling issues, the group discussion was confined to a sub-sample of six informants, combining corporate center and business unit perspectives as well as the most extreme positions in the interviews. Participants from the corporate center, included the Head of Internal Accounting, the Head of Management Accounting, and the Head of Strategy. The CFOs of business units B, C, and E participated in the discussion representing the business units. Consensus was achieved in two rounds of discussions lasting 120 minutes each.

[382] Mitroff (1972), p. B615.

[383] The issues relate to the systematic distortion of the group score through the influence of power-dependencies between participants, conformity pressures and group think. Cf. Kumar/Stern/Anderson (1993), p. 1637; van Bruggen/Lilien/Kacker (2002), p. 471.

[384] Kumar/Stern/Anderson (1993), p. 1637; van Bruggen/Lilien/Kacker (2002), p. 471.

## 3. Results

Considering the multi-informant approach, it is expected that the series of field interviews will paint a multi-faceted picture of the organization. In most aspects of interest – the current level of managerial long-term growth orientation, the role and relevance of RAPM as well as the impact of 'other organizational factors' – the interviewees provided controversial viewpoints and contradicting explanations. Nonetheless, some overarching patterns emerged from the interviews and the group discussions, which allowed for a synthesization of a prevailing view of the organization.

The following sections describe in detail the findings with respect to long-term growth orientation (Section E3.1), RAPM (Section E3.2YY), and the relevant organizational context (Section E3.3ZZ). Each section outlines the range of responses including extreme positions, describes the emerging patterns, and reports the shared perspective and its implications for the remaining part of the study. Finally, the specific hypotheses to be tested in the questionnaire survey are derived for each research question (Section E3.4).

### *3.1. The Level of Managerial Long-Term Growth Orientation*

The assessment of managerial long-term growth orientation varies greatly throughout the interviews and range from statements that point out the lack of long-term orienttation as a "huge problem" to statements that deny the existence of myopic behavior as the managers were said to fully understand the need for sustainable growth.

On needs to distinguish between the corporate center and the BU perspective because the corporate center managers appeared to be more skeptical about the extent of myopic behavior than their BU counterparts. The skepticism within the corporate center pertains first of all to a general short-termism among middle managers. They are believed to prefer short-term value levers at the expense of a pursuit of long-term (growth) initiatives. Some statements are:

"*We have very ambitious targets […] and if you run into profit issues, you naturally rather look for return and avoid anything that produces cost without generating revenue in the same period.*"[385]

"*We do have the […] issue of short-termism or of a preference for short-term levers to achieve our value-based targets.*"

"*With respect to the business, in the past we always had a rather short-term perspective.*"

[385] The interviews were conducted in German. All quotes have been translated by the author.

In addition, both, corporate center as well as BU managers, question their intrinsic will and their conviction about the imperative to grow. The latter aspect relates to the overall relevance of long-term growth and the prioritization of growth vs. profit as performance drivers under the company's 'profitable growth' regime. Comments include:

"*Maybe sometimes you also need the desire to grow – and think about profitability afterwards.*"

"*Their managers [at General Electric, OG] emanate and you can see it in their faces that they are pursuing double-digit growth rates – you don't sense that here.*"

"*If you ask people, 'why actually growth?', I doubt that they have really understood, why...*"

"*People internalized the issue of outcome and profitability […] actually we would need the same movement towards growth.*"

Even though the opinions expressed above dominate among the corporate center interviewees, there are nonetheless individual statements that oppose this view and claim that a long-term growth perspective is deeply grounded among middle managers.

"*I think we are far ahead [with respect to sustainable growth, OG].*"

"*We have an agreed-upon 8 year strategy – therefore the [long-term, OG] focus is always present.*"

Quite in contrast to the predominant corporate center position, most of the BU senior managers (initially) position long-term growth as integral part of their organizations agenda and claim that the growth theme strongly resonates with their management team. Their statements – mostly opening statements in the early phase of the interviews – include:

*"[Business unit A] has always been growth-driven.*"

"*The topic of sustainable growth is on top of our agenda.*"

"*My organization fully understands it [the need to grow, OG].*"

Yet, during the course of the interviews most BU interviewees also concede that there exist substantial issues leading to partly myopic behavior among their middle management. These issues relate to the neglect of long-term growth levers in favor of short-term cost measures, i.e. to a low priority setting for growth and the long-term in general, and also again to an insufficient internalization of the growth imperative. Comments include:

"*From my point of view today the growth dynamic has rather decreased […] and the cost management has become tighter.*"

"*It is probably correct to presume that the effort put into cost reduction is disproportionally higher than the effort put into growth.*"

"*Is a saved Euro better than an earned Euro? There was the notion: A Euro is a Euro – but a saved Euro is a certain Euro.*"

"*That makes a long-term orientation difficult.*"

"*The sales people – when planning customer projects – put a lot of effort into the first five years, and beyond that they completely lose their imagination and appetite and simply extrapolate the planning or omit it completely […] they simply do not take stock in long-term planning.*"

"*If you want to convince someone to pursue a profitable growth target, you need to convince him that growth matters in the first place…*"

"*It [long-term growth orientation, OG] is a question of awareness.*"

In addition to the latent tradeoff of short-term cost levers and long-term growth aspirations, the BU managers also mention a number of other factors impeding managerial long-term growth orientation[386] This further indicates that there is substantial myopic behavior.

For the synthesization across the corporate center and the BU perspective it has to be concluded that long-term growth orientation of middle managers is a highly relevant topic and that its current level is insufficient considering the growth aspirations of the company. In other words, there are strong indications for myopic behavior related to low priority setting of long-term (growth) issues with respect to short-term (cost) measures and low relevance attributed to the corporate goal of sustainable growth. This view was also shared in the final group discussions.

### *3.2. The Role and Relevance of RAPM*

In the first part of this section first the incentive system for the middle management is outlined. It serves as the core element of the performance management system and thus assesses the *formal* role and position of accounting-based measures in the performance management context (Section E3.2.1). This description is based on the field interviews as well as on company presentations and publications. Next, it explores the role of RAPM in practice based on the interview findings to determine the extent to which performance management actually relies on budgetary measures and centers on the short-term horizon (Section E3.2.2). Lastly, the section reports on the dys-

[386] See Section 3.3 below for details.

functional effect of RAPM on long-term growth orientation as expressed by the interviewees (Section E3.2.3).

### *3.2.1. Formal Incentive System*

The company has two complementary systems to determine the variable compensation of managers: A short- and a long-term incentive scheme.

The short-term incentive pertains to the budget year and has three components tied to (1) group performance, (2) business unit performance, and (3) individual performance with respect to the personal performance contract. The share of the group and BU component increases by management level. Group and BU performance is measured as the actual value added against plan under the company's value-based management regime. The individual targets tend to be quantitative[387] as well and often also involve accounting-based measures of the budget year. With the exception of sales positions, they rarely comprise (long-term) growth related targets.

The long-term incentive covers a three-year horizon and is tied to the cumulated increase in value added over the entire period independent of plan values.

While all middle and top managers are subject to the short-term incentives, the long-term component only applies to the top management level. Consequently, the variable compensation of the middle management population under inquiry is exclusively tight to a short-term system with a one-year horizon predominantly relying on accounting-based measures. The analysis of how the formal RAPM translates into practice follows in the next two sections.

### *3.2.2. Extent of RAPM in Practice*

During the field interviews, three critical aspects of performance management practice emerged: The balancing of profit and growth levers to achieve the value-based targets, the (closely related) potential dominance of short-term cost levers, and the impact of short management rotation cycles.

The issue of balancing profit and growth relates to the fact that performance is solely measured against the 'profitable growth' target in terms of the value added and does not (any more) address profit and growth targets separately. This raises the question, whether growth is adequately reflected in this scheme and whether managers neglect the growth levers and rather concentrate on the supposedly easier to control cost and asset allocation levers. Some statements clearly contradict this argument. Here, the emphasis is on the definitional equality of profit and growth levers that influence the value added and on the claim that the coupling of both elements is "absolutely accepted in the organization". Some even denounce the argument as "pre-textual".

[387] One manager mentioned illustratively that "everything is measured – in some form or another".

Nonetheless, a considerable number of interviewees still express concern as to whether (long-term) growth is sufficiently incentivized. They note that the current system contains growth "only implicitly" and concede that incentivation can be "counterproductive" with business units hesitating to enter new product segments as they could potentially harm current BU performance. The question could not be conclusively answered. The question remained whether the issue of growth vs. profit is nonetheless "the reality" and managers – in case of doubt – still prioritize cost and profit levers over (long-term) growth levers.

The second dominant aspect emerging from the interviews is also in support of the argument: The dominance of (short-term) cost consideration in planning, decision-making, and performance measurement. The issue was raised almost unanimously by all interviewees and related statements include:

"*Cost is currently really our number one topic.*"

"*If we think about profit generation, we think about cost reduction.*"

"*Profit generation is cost reduction.*"

"*If you say: In case of doubt, cost is priority, it's probably not entirely wrong…*"

"*That [the incentive scheme, OG] is the reason why there is a strong focus on cost.*"

The last aspect of performance management does not only pertain to compensation but also to consequence management in terms of promotions or demotions of managers. An informal corporate policy calls for managers to change positions on average every three years. The interviewees agree that these short rotation cycles have negative implications for the managers' behavior towards the long term. While it is undisputed that the frequent outflow of (business-related) knowledge negatively affects strategic decision-making, there was disagreement as to whether opportunistic management behavior further worsens the effect. Some interviewees saw the tendency that "managers try to optimize their three years and do not necessarily take stock in investing in long-term projects" to improve their three-year track record and thus their prospect of favorable promotions. Under these conditions, long-term considerations would be systematically neglected. The argument could also not be conclusively settled during the interview phase.

Despite the partially inconsistent reports, the three above mentioned aspects together are strong indicators that short-term accounting-based measures, especially cost and to a lesser extent asset allocation, play a dominant role in the company's performance management practice.

The observation of a strong RAPM in conjunction with the insufficient managerial long-term growth orientation (see Section E3.1) also confirms the crucial case properties of the research site as most-likely scenario (see Section D1.3).

### *3.2.3. Dysfunctional Consequences of the RAPM Practice*

The discussion of the potentially dysfunctional relationship between the emphasis on short-term accounting-based performance measures and the managerial long-term growth orientation proved to be quite controversial for two reasons.

One the one hand, managers tend to mix their perceived effect of a management accounting *practice* with their view on the management accounting *function* and also their personal experience with management accountants. This may result in a somewhat biased perspective as the management accounting function often plays the role of a critical counterpart[388] in challenging and thus potentially stopping strategic initiatives. Accordingly, some managers report about frustrating experiences with rigid profitability hurdles and related "fights with our management accountants". In consequence, one has to be careful not to reduce the dysfunctional effect under inquiry to "the management accounting [function, OG] inhibits growth" as explicitly pointed out in one interview.

On the other hand, behavioral consequences of RAPM exclusively draw on extrinsic factors 'guiding' managerial actions. Such a discussion can quickly be perceived as mechanistic as it seems to neglect the intrinsic drivers of managerial behavior and also to some extent the self-determination of managers, who under the assumption of the Dialectic of Control (see Section B1.5), can always act differently – e.g., not solely along the lines of short-term performance measures. One interviewee states: "To believe that the people are only after the money is a serious mistake". In line with this argument another manager notes: "For myself, it's intrinsic, because I say we are basically doomed to grow."

Despite these difficulties, a rather clear pattern emerges from the interviews with respect to the impact of emphasizing short-term budgetary goals in performance management. The narrow short-term focus is believed to limit the attention managers direct towards the long-term, which is also perceived as virtually irrelevant with respect to a manager's performance evaluation. In other words, the interviews render strong evidence in favor of the existence of the dysfunctional effect of RAPM and managerial long-term growth orientation. Exemplary comments include:

"*Because profit has been strongly emphasized in recent years and also because the new incentive systems were strongly influenced by these [short-term accounting-based, OG] measures, you could make the case that growth has been neglected and that the*

[388] Weber/Schäffer (2006), pp. 411-413.

*entire focus and energy and vigor has been put on profit or return or whatever measure was given priority.*"

"*This [myopic management behavior, OG] is currently one of our key issues as we, from my point of view, tend to forget the long-term perspective due to short-term performance measures.*"

"*The interest for long-term planning is significantly lower, as it is not relevant.*"

This apparent consensus during the interviews also surfaced during in the final group discussions. Here, the short-term focus of the management accounting practices was agreed upon as one of three primary inhibitors of a stronger long-term growth orientation.

In summary, the most-likely scenario appears to hold its position based on the anecdotal evidence gathered during the first phase. The strong reliance on APM and especially on cost measures together with the clear short-term emphasis seems to negatively affect managerial long-term growth orientation by encouraging myopic behavior.

### *3.3. Other Relevant Factors of the Organizational Context*

During the second and third part of the interviews (see Section E2.2), the managers mentioned a large variety of other organizational factors with an impact on managerial long-term growth orientation apart from performance management practices. Examples include process- rather than project-centered culture, top-down communication issues, and limited tolerance for individual failure. Despite the wide range of potentially relevant factors mentioned, there are two focal aspects that emerged during the field interview phase: Elements of corporate entrepreneurship (Section E3.3.1) and properties of the strategy process (Section E3.3.2). They were most frequently mentioned by the interviewees, deemed most influential and were also agreed upon as the two most important aspects during the final group discussions. Based on this univocal qualitative evidence, the study chooses these two other organizational factors as likely relevant factors to be further investigated in the second study phase.

#### *3.3.1. Corporate Entrepreneurship*

The concept of corporate entrepreneurship (CE) refers to entrepreneurship within existing organizations[389] or, in other words, "start-up entrepreneurship turned inward."[390]

[389] Sharma/Chrisman (1999), pp. 11-12; Antonacic/Hisrich (2001), p. 497. The term entrepreneurship itself is most of the times conceptualized either along the lines of Schumpeter's definition entrepreneur as a person "carrying out new combinations" in terms of new products, processes, markets, organizational forms or sources of supply (Schumpeter (1934), p. 66) or according to Gartner's notion of entrepreneurship as the "creation of organizations" (Gartner (1988), p. 26).

The differentiation between 'corporate' and 'independent' entrepreneurship can be traced back to Collins/Moore (1970) who distinguished "independent" entrepreneurs creating new organizations "from scratch" and "administrative" entrepreneurs creating new organizations within or alongside existing organizations.[391] Terms that are used interchangeably to corporate entrepreneurship include *intrapreneurship[392] and internal (corporate) entrepreneurship[393]*.

Over the past 30 years, there have been numerous attempts to define the notion of corporate entrepreneurship and to move beyond the abstract Schumpeterian (1934) notion of 'creating new combinations' within a corporate context. In their review of existing definitions, Sharma/Chrisman (1999, pp. 14-15), for example, list 26 different attempts to conceptualize aspects of corporate entrepreneurship but state "definitional ambiguities" (p.13) and a "striking lack of consistency" (p. 11) between the different terms and definitions. This is not only the result of varying conceptual breadths of those definitions but also due to an inconsistent or at least ambiguous use of the CE terminology and a general "proliferation of labels for entrepreneurial phenomena in organizations."[394]

Generally, most conceptualizations define corporate entrepreneurship along its main modes or types as constituent parts. Sambrook/Roberts (2005, pp. 142-144) identify 5 key classifications typologies of the modes of corporate entrepreneurship (see Table 4).

<table>
<tr><th>Author</th><th colspan="8">Modes of Corporate Entrepreneurship</th></tr>
<tr><td>Vesper (1984)</td><td>New strategic direction</td><td>Initiative from below</td><td>Autonomous BU operations</td><td>New product development</td><td>Acquisition</td><td>Joint venture</td><td>Venture groups</td><td>Spin-offs/ start-ups</td></tr>
<tr><td>Ginsberg/Hay (1994)</td><td colspan="2">Intrapreneuring</td><td colspan="2">Internal corporate venturing</td><td colspan="2">Merger and acquisition</td><td colspan="2">Entrepreneurial partnership</td></tr>
<tr><td>Stopford/Baden-Fuller (1994)</td><td colspan="3">New business venturing</td><td colspan="3">Organizational renewal</td><td colspan="2">Frame-breaking change</td></tr>
<tr><td>Covin/Miles (1999)</td><td colspan="2">Sustained regeneration</td><td colspan="2">Organizational rejuvenation</td><td colspan="2">Strategic renewal</td><td colspan="2">Domain redefinition</td></tr>
<tr><td>Thornberry (2001)</td><td colspan="2">Intrapreneuring</td><td colspan="2">Corporate venturing</td><td colspan="2">Organizational transformation</td><td colspan="2">Industry rule-bending</td></tr>
</table>

*Table 4: Corporate Entrepreneurship Classification Typologies[395]*

[390] Sambrook/Roberts (2005), p. 142.
[391] Sharma/Chrisman (1999), p. 13.
[392] Cf. e.g., Nielson/Peters/Hisrich (1985), p. 181; Pinchot (1985), p. ix.
[393] Schollhammer (1982), p. 211; Jones/Butler (1992), p. 734.
[394] Covin/Miles (1999), p. 48.
[395] Own compilation based on Sambrook/Roberts (2005), p. 143.

Despite the different labeling of the modes, the core of corporate entrepreneurship can be derived as the common ground around the two focal concepts[396] of

- *New business creation through innovation and/or venturing* comprising the notions of new product development, venture groups, spin-offs/start-ups, intrapreneuring, (internal/corporate) venturing, new business venturing, and sustained regeneration

- *Transformation and renewal of existing organizations/existing business* comprising new strategic direction, organizational/strategic renewal, organizational rejuvenation and organizational transformation.

In line with these two conceptual pillars of corporate entrepreneurship, the study will in the following adopt the inclusive and widely-used[397] definition by Guth/Ginsberg (1990, p. 5) who state that corporate entrepreneurship encompasses both "(1) the birth of new businesses within existing organizations, i.e. internal innovation or venturing; and (2) the transformation of organizations through renewal of the key ideas on which they are built, i.e. strategic renewal."

The definition above explains *what* corporate entrepreneurship consists of in an outcome-oriented sense. Yet, for a full understanding of the CE phenomenon as potential driver of managerial long-term orientation it is necessary to also explore *how* the birth of new business or the transformation of organizations is undertaken, and, in addition, the influence of individual, organizational, or environment factors as well as how and why corporate entrepreneurship occurs at an organization.[398] In line with this intention, the analysis of a particular CE practice can address three different aspects: It can (1) capture the essential elements of CE-related organizational behavior. To additionally explore the underlying drivers of this behavior, it can (2) analyze the structuring factors of the organizational context impacting corporate entrepreneurship and (3) explore the preferences for corporate entrepreneurship of the individual actors.[399]

The organizational behavior leading to corporate entrepreneurship has been primarily assessed along two key concepts and their related measurement instruments:[400] The Entrepreneurial Orientation (EO) of the organization by Covin/Slevin (1989; 1991) and the corporate entrepreneurship concept and scale by Zahra (1991; 1993). While the Entrepreneurial Orientation centers on an organization's general posture towards

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[396] Cf. Zahra (1993), p. 321; Sharma/Chrisman (1999), pp. 11-15; Hornsby/Kuratko/Zahra (2002), pp. 254-255; Dess/Lumpkin (2005), p. 147. Accordingly, *(corporate) venturing* and *strategic/organizational renewal* have also been employed as (more narrow) synonyms for CE.

[397] Sharma/Chrisman (1999), p. 16; Dess/Lumpkin (2005), p. 147.

[398] Lumpkin/Dess (1996), pp. 135-136.

[399] The potential impact of environmental factors is outside the research scope of this n=1 case study.

[400] Antonacic/Hisrich (2001), pp. 500-501.

corporate entrepreneurship, the corporate entrepreneurship concept relates to an organization's engagement in specific CE activities in terms of venturing, innovation, and self-renewal. Going forward, the study will employ the more frequently[401] used concept of Entrepreneurial Orientation to describe and to capture general patterns of entrepreneurial behavior at the organizational level, which are the prerequisite for specific CE activities.

The Entrepreneurial Orientation (EO) concept by Covin/Slevin (1989; 1991) builds on the previous works by Miller/Friesen (1982) and Khandwalla (1977) on the strategic posture of entrepreneurial firms. Covin/Slevin (1989, p. 7) identify three dimensions of Entrepreneurial Orientation and define "firms with entrepreneurial posture [as] risk-taking, innovative, and proactive". In other words, organizations with a high Entrepreneurial Orientation exhibit a strong risk-taking propensity by the top management (*risk-taking*), are characterized by frequent and substantial process and product innovations (*innovativeness*), and can be described as proactive and aggressive towards the competition (*proactiveness*).[402]

Subsequent research by Lumpkin/Dess (1996; 2001) proposes the extension of the three-factor model of Entrepreneurial Orientation to a five-factor model. On the one hand, Lumpkin and Dess add *autonomy* as a new dimension that relates to the independent actions of individuals or teams.[403] On the other hand, they propose the separation of *proactiveness* as attitude towards opportunities and *competitive aggressiveness* as attitude towards threats.[404] Even though their research yields some limited empirical evidence to treat proactiveness and competitive aggressiveness as distinct factors, the more recent empirical studies building on the Entrepreneurial Orientation concept return to the original three-factor model.[405] Likewise, the study will focus on those three primary aspects of Entrepreneurial Orientation.

Literature on corporate entrepreneurship also investigates the organizational antecedents of entrepreneurial orientation. The associated findings consistently attribute great importance to factors of the internal organizational context[406] as "ambient internal conditions that can facilitate intrapreneurial activities."[407] During the course of

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401 Knight (1997), pp. 214-215; Lyon/Lumpkin/Dess (2000), p. 1056; Kreiser/Marino/Weaver (2002), p. 71; Dess/Lumpkin (2005), p. 147.

402 Covin/Slevin (1989), p. 79.

403 Lumpkin/Dess (1996), p. 140.

404 Lumpkin/Dess (2001), p. 434.

405 Cf. for example Kreiser/Marino/Weaver (2002), p. 74; Wiklund/Shepherd (2005), p. 75; Green/Covin/Slevin (2008), p. 357; Stam/Elfring (2008), pp. 102-103.

406 Burgelman (1983), p. 1362; Kuratko/Montagno/Hornsby (1990), p. 55; Covin/Slevin (1991), pp. 14-19; Antonacic/Hisrich (2001), pp. 501-502; Hornsby/Kuratko/Zahra (2002), p. 255; Holt/Rutherford/Clohessy (2007), p. 50.

407 Kuratko/Montagno/Hornsby (1990), p. 49.

investigation, a wide range of these internal organizational antecedents has been identified but no conclusion has been reached as to which factors are most influential.[408] From the discussion, two perspectives emerged on the different dimensions accounting for the intra-organizational environment for corporate entrepreneurship: The five-factor solution introduced by Kuratko/Montagno/Hornsby (1990) and the differentiation into tangible and intangible factors introduced by Zahra (1991) (see Table 5).

<table>
<tr><th>Author</th><th colspan="6">Organizational Antecedents for Corporate Entrepreneurship</th></tr>
<tr><td>Kuratko/Montagno/ Hornsby (1990)</td><td>Management support</td><td>Organizational structure</td><td colspan="2">Risk-taking</td><td>Time availability</td><td>Reward and resource availability</td></tr>
<tr><td>Hornsby/Kuratko/ Montagno (1999) Hornsby/Kuratko/ Zahra (2002)</td><td>Management support</td><td>Work discretion/ autonomy</td><td colspan="2">Rewards/ reinforcements</td><td>Time availability</td><td>Organizational boundaries</td></tr>
<tr><td rowspan="2">Zahra (1991)</td><td>Tangibles</td><td>Communi-cation</td><td>Scanning</td><td>Integration</td><td>Differentiation</td><td>Controls</td></tr>
<tr><td>Intangibles</td><td colspan="2">Individual-centered values</td><td colspan="3">Competition-oriented values</td></tr>
<tr><td rowspan="2">Antonacic/ Hisrich (1999)</td><td>Structure</td><td>Communi-cation</td><td>Formal controls</td><td colspan="2">Environmental scanning</td><td>Organizational support</td></tr>
<tr><td>Values</td><td colspan="2">Person-related values</td><td colspan="3">Competition-related values</td></tr>
</table>

*Table 5: Organizational Antecedents for Corporate Entrepreneurship*

The initial five-factor model comprises the dimensions (1) *management support*, (2) *organizational structure*, (3) *risk-taking*, (4) *time availability*, and (5) *reward and resource availability*. It was first introduced and tested in the Intrapreneurial Assessment Instrument (IAI) by Kuratko/Montagno/Hornsby (1990). Yet, the empirical application could only confirm three distinct factors:[409] (1) *Management support* including risk-taking aspects, (2) *organizational structure*, and (3) *resource availability* comprising time and rewards. Hornsby/Kuratko/Montagno (1999) and Hornsby/Kuratko/Zahra (2002) validated a refined version of the five-factor model using a cross-cultural sample. Their Corporate Entrepreneurship Assessment Instrument (CEAI) comprises the dimensions (1) *management support*, (2) *work discretion/autonomy*, (3) *rewards/reinforcements*, (4) *time availability,* and (5) *organizational boundaries*.[410]

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408 Ibid., p. 52; Hornsby/Kuratko/Zahra (2002), p. 259; Holt/Rutherford/Clohessy (2007), p. 40.

409 Kuratko/Montagno/Hornsby (1990), p. 55.

410 Hornsby/Kuratko/Montagno (1999), p. 12; the factor structure was also confirmed by Holt/Rutherford/Clohessy (2007), pp. 45-46.

The different aspects are defined as follows:[411] *Management support* refers to the willingness of the top management to encourage, promote, and facilitate entrepreneurial activity within the organization. *Work discretion/autonomy* indicates how much judgmental freedom an individual manager has to decide and take entrepreneurial risks. The appropriate use of rewards in an effective, results-based reward system is captured by *rewards/ reinforcements*. *Time availability* is concerned with the amount of time and other resources a manager can spend on entrepreneurial activities. Lastly, *organizational boundaries* refer to the existence of a supportive organizational structure aiding the identification, evaluation, and implementation of entrepreneurial initiatives.

The alternative approach by Zahra (1991) differentiates on the one hand four *tangible* aspects of the formal organizational structure: (1) *Communication*, (2) *scanning*, (3) *integration*, (4) *differentiation*, and (5) *controls*. In detail[412], *communication* refers to the quality and amount of formal communication. *Scanning* relates to the collection, analysis, and interpretation of data concerning the external environment and the competition. *Integration* and *differentiation* both refer to the organizational setup with *integration* measuring the linkage and interaction between different organizational units and *differentiation* capturing the specialization and division of labor within the organization. Lastly, *controls* deals with the formal control mechanisms for entrepreneurial initiatives. On the other hand, Zahra (1991) also considers two *intangible* aspects in terms of organizational values: (1) *Individual-centered values* expressing strong commitment and support for employees and (2) *competition-oriented values* encouraging an agile and aggressive posture towards the competitive environment. The results of the framework's empirical application were mixed, especially in regard to the two variables referring to the organizational setup (*integration* and *differentiation*). Hence, Antonacic/Hisrich (2001) refine the approach of tangible *structure* and intangible *values* by replacing the integration/differentiation aspect with the single dimension *organizational support* comprising management involvement and support as well as resource availability.[413] The application on a cross-cultural sample again only renders partial support for the relevance of the different dimensions, especially concerning the *communication* dimension and the *person-related/individual-centered values*.[414]

The Corporate Entrepreneurship Climate Instrument (CECI) proposed by Ireland/Kuratko/Morris (2006) can be interpreted as an attempt to combine both approaches through the enrichment of the five-factor Corporate Entrepreneurship

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411 Hornsby/Kuratko/Zahra (2002), pp. 259-260
412 Zahra (1991), pp. 265-266.
413 Antonacic/Hisrich (2001), p. 502.
414 Ibid., pp. 519-520.

Assessment Instrument (CEAI) with an 'intangible' value component capturing the *cultural climate* for corporate entrepreneurship.[415] The multi-faceted dimension covers individual-cen-tered values as well as aspects of risk-taking decision-making.

Going forward, the study will employ the five dimensions of the Corporate Entrepreneurship Assessment Instrument (CEAI) by Hornsby/Kuratko/Zahra (2002) to capture the organizational antecedents for corporate entrepreneurship. The rationale for this choice is the following: The *formal control* dimension by Zahra (1991) and Antonacic/Hisrich (2001) is already more specifically addressed by the RAPM construct. Likewise, most of the intangible aspects such as competitive aggressiveness and risk-taking are covered by the Entrepreneurial Orientation of the organization as discussed above. Lastly, the five-factor solution also exhibits a better fit to various empirical datasets and is rigidly derived from and linked to the relevant corporate entrepreneurship literature.[416]

Against the background of Structuration Theory guiding the research effort, it appears necessary to consider both structural aspects that enable or constrain corporate entrepreneurship as well as the individual-level antecedents for agency, i.e. the "motivation" of the individual towards corporate entrepreneurship as "potential for action".[417] In literature on entrepreneurship, substantial research effort is directed at assessing the *entrepreneurial dispositions* of individuals and their role in determining (individual and organizational) entrepreneurial behavior.[418]

Dispositions refer to psychological characteristics such as personality, traits, needs, attitudes, and motives.[419] Particular research interest is directed towards the most stable dispositions personality and traits as "relatively fixed structures that globally define or characterize individuals."[420] Even though research has not yet delivered conclusive results on the most important factors of entrepreneurial disposition and their predictive value,[421] there is general agreement on the relevance of dispositional

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[415] Ireland/Kuratko/Morris (2006), pp. 26-28.

[416] Hornsby/Kuratko/Zahra (2002), p. 269; Kuratko/Hornsby/Goldsby (2004), pp. 81-82; Holt/Rutherford/Clohessy (2007), pp. 40,45-46.

[417] Giddens (1984), p. 6. For Giddens, the "notion of practical consciousness is fundamental to structuration theory" (p. 6). It refers to "pre-conscious" (p.7) aspects of motivation influencing individual agency especially in non-routine situations – for example during acts of corporate entrepreneurship.

[418] Korunka *et al.* (2003), pp. 24-25; Stewart *et al.* (2003), pp. 27-28; Zhao/Seibert/Hills (2005), p. 1265; Holt/Rutherford/Clohessy (2007), p. 42.

[419] House/Shane/Herold (1996), p. 205.

[420] Ibid.

[421] Stewart *et al.* (1999), p. 192; Stewart *et al.* (2003), p. 28; Schmitt-Rodermund (2004), p. 499; Holt/Rutherford/Clohessy (2007), p. 42.

factors in organizational research and the need to study both, structural (situational) and individual (dispositional), factors simultaneously.[422]

In the exploration of the individual entrepreneurial predisposition or "proclivity for entre-preneurship" [423] in terms of (stable) traits determining entrepreneurial behavior,[424] entrepreneurship literature yields a range of potentially relevant aspects including the need for achievement, internal locus of control, self-confidence, extra-version, risk-taking propensity, and self-efficacy.[425]

Based on this broad range of 'entrepreneurial' traits, two research strategies emerge: On the one hand, researchers follow a more traditional approach in selecting and applying a subset of most important traits to cover the domain of entrepreneurial disposition. Examples are Stewart *et al.* (2003) who choose *achievement orientation*, *preference for innovation* and *risk-propensity* or Korunka *et al.* (2003) who rely on *need for achievement*, *internal locus of control*, *risk-taking propensity*, and *personal initiative*. One the other hand, researchers recently started to apply the so-called Big Five personality dimensions as "parsimonious yet comprehensive taxonomy of personality"[426], i.e. they describe and measure entrepreneurial predisposition in terms of the general five-factor model of personality developed by Costa/McCrae (1992). The Big Five model comprises the dimensions (1) *agreeableness*, (2) *con-scientiousness*, (3) *extraversion*, (4) *neuroticism*, and (5) *openness*. Following this logic, an entrepreneur can be characterized by high levels of *extraversion*, *openness*, and *conscientiousness* and respectively low levels of *agreeableness* and *neuro-ticism*.[427]

The study follows the first, more traditional approach because the narrower, higher-order personality traits appear more suitable for the study of *corporate* entrepreneurship, i.e. for the application in a business context, than the lower-order five-factor constructs. On the one side, they can be linked directly to qualitative evidence from the interviews (e.g., managers' risk propensity and innovativeness; see below). On the other side, the associated scales have been adapted to business settings

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422 House/Shane/Herold (1996), pp. 218-220; Korunka *et al.* (2003), p. 23; Lumpkin/Erdogan (2004), pp. 21-22; Zhao/Seibert/Hills (2005), p. 1265.

423 Stewart *et al.* (1999), p. 192.

424 Existing research usually compares the personality traits of entrepreneurs with the characteristics of managers as reference group for non-entrepreneurs (Schmitt-Rodermund (2004), p. 499; Zhao/Seibert (2006), p. 260).

425 Korunka *et al.* (2003), p. 24; Schmitt-Rodermund (2004), p. 499; Zhao/Seibert/Hills (2005), p. 1266; for detailed overviews, cf. Chell/Haworth/Brearley (1991); Stewart (1996) .

426 Zhao/Seibert (2006), p. 260; also cf. Schmitt-Rodermund (2004), pp. 501-502, 506; Holt/Rutherford/Clohessy (2007), p. 42.

427 Schmitt-Rodermund (2004), p. 502; Zhao/Seibert (2006), pp. 260-262, 264.

and can more easily be applied in quantitative research involving senior managers than the original psychological personality scales (see Section F2.1).

Specifically, the study takes into account the three most prominently positioned[428] aspects in existing literature that portray the entrepreneur as a "driven, creative risk taker"[429]: *Achievement orientation*, *preference for innovation,* and *risk-propensity*. While *achievement orientation* captures an individual's (basic) need to achieve in order to attain satisfaction, *preference for innovation* pertains to the bias towards innovative and creative problem solving, and *risk-taking propensity* relates to one's orientation toward taking chances in decision-making.

In conclusion, the study takes a detailed and at the same time holistic approach in an effort to capture the corporate entrepreneurship phenomenon (see Figure 6). In addition to the perception of corporate entrepreneurship as organizational outcome, it also takes into account the underlying patterns of organizational behavior necessary to yield the desired outcome, i.e., an organization's Entrepreneurial Orientation. Furthermore, it explores the antecedents of this behavior along two lines: The organizational entrepreneurial environment as structural or situational antecedent and the proclivity for entrepreneurship as individual or dispositional antecedent of entrepreneurial behavior.

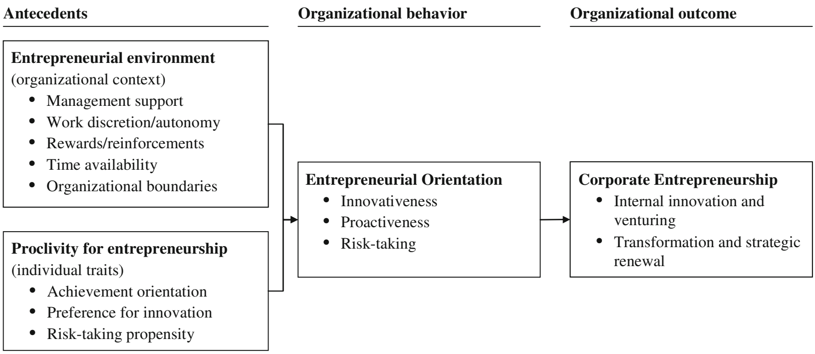


*Figure 6: Integrated Perspective on Corporate Entrepreneurship*

The field interviews addressed the issue of corporate entrepreneurship on two levels: On the one hand, managers refer to corporate entrepreneurship as aggregate organizational practice and report on the overall level of CE both in terms of outcome and behavioral aspects. On the other hand, they mention a variety of particular aspects of the organizations entrepreneurial orientation and its antecedents.

[428] Carland *et al.* (1984), pp. 355-357; Stewart *et al.* (1999), p. 192; Stewart *et al.* (2003), pp. 30-31.
[429] Stewart *et al.* (1999), p. 190.

On the aggregate level, most managers concede a general lack of 'entrepreneurial spirit' in terms of entrepreneurial orientation within the organization and link the unsatisfactory level of long-term growth orientation back to this deficit. Many interviewees also concede outcome-oriented issues of corporate entrepreneurship mirroring the strong focus on other (short-term) outcome dimensions like cost and profitability.[430] They include entry in new market segments, build-up of innovation-based new business, and rapid adaptation and transformation of the organization to the changing market environment. Supporting this view is the fact that an internal corporate venturing unit – set up to specifically address the topic of business building in new markets – has been recently shut down due to unsatisfactory results. In addition, the business units rarely make use of the corporate funding opportunity[431] designed to spur the initiation of long-term growth projects within and across the individual business units. The issue of low levels of corporate entrepreneurship – both in terms of entrepreneurial orientation and outcome – is said to be widely acknowledged but not successfully coped with, yet.

Exemplary comments on the low overall entrepreneurial orientation included:

"*Mindset, the much-used term entrepreneurship, the willingness to take risks and the long-term perspective. These are the key aspects we are not good at.*"

"*That [managerial long-term growth orientation, OG] requires someone who – it might be a trite term – nonetheless develops the entrepreneurial will.*"

"*We had a senior management session on 'entrepreneurial action at [company]' and one of the participants asked 'where do we find the central directive, which defines it?'*"

Exemplary outcome-oriented statements are:

"*Currently, the units are – in terms of their management attention or however you want to call it – totally occupied with operational issues, product issues, achieving regional growth, achieving growth above the market level and I do not think there is much leeway in the system to pursue many more things additionally*."

*"[Company] is probably not the one that creates new markets.*"

*"[We] struggle with new business segments*."

"*We are partly running out of ideas.*"

"*In fact, we would also need to – what our competitors already do – quickly exit one market segment and enter another one as part of portfolio management*."

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430 See sections E3.1 and E3.2.

431 One interviewee noted that "in other companies people would tussle for them".

Despite individual comments that acknowledge corporate entrepreneurship as "absolutely built-in" and report that "there is a huge pile of ideas ready", the evidence from the interviews in total indicates a comparatively low and thus unsatisfactory level of corporate entrepreneurship and the related entrepreneurial orientation. It also establishes a link to the (low) level of managerial long-term growth orientation. Accordingly, the participants in the final group discussions agreed that corporate entrepreneurship as most influential 'other organizational factor' needs to be further investigated.

Individual aspects of entrepreneurial orientation, structural as well as individual antecedents that were also mentioned during the field interviews form the starting point for this further investigation. Most of the aspects repeatedly mentioned can be attributed to entrepreneurial risk-taking and innovativeness as two of the three dimensions of entrepreneurial orientation.

The discussion of the issue of entrepreneurial risk-taking was rather controversial. While a few interviewees deny any lack thereof – "everyday, we display a great deal of courage" –, most managers report that both organizational entities as well as individuals take too little business-related risk and instead display substantial amounts of risk aversion. Their comments include:

"*We at [Business Division A] lack the courage.*"

"*We do not expose ourselves to this uncertainty.*"

"*It requires the will to act – that requires courage.*"

"*Fear in the back of one's head: Will it go on like this?*"

A number of managers link this risk avert behavior back to individual antecedents and specifically to the managers' risk propensity as one aspect of their proclivity for entrepreneurship. Middle managers are portrayed as unwilling to take personal risks and without the "intrinsic urge to venture on unknown territory" but rather as people who "also in private affairs safeguard against losses". Yet, most of the interviewees disagree with that explanation and rather hold the structural antecedents of the relevant organizational context responsible for the lack of individual risk-taking. For example, they claim:

"*I do not believe that we only have the risk-averse type at [company], definitely not.*"

"*People would be willing to take entrepreneurial risk, but our philosophy, our way of thinking does not encourage that, does not support it.*"

In summary, there is substantial evidence indicating a lack of organizational and individual risk-taking and that can be linked to the insufficient level of managerial long-term growth orientation. Yet, it is not possible to draw the final conclusion that such risk averse behavior reflects individual traits (individual antecedents) and/or is the result of organizational contextual factors (structural antecedents).

In favor of the latter line of reasoning are also the many reports on individual underlying organizational factors with an alleged negative effect on long-term orientation. The most prominent factors are low tolerance for individual failure, insufficient role-modeling, top management support as well as the lack of clear-cut ownership and accountability. It appears that the dimension *management support* of the entrepreneurial environment concept as described above is the crucial structural determinant at this organization. Related comments are for example:

"*Of course, everyone can make mistakes – but if something goes wrong, it mostly does not look great for the person concerned*."

"*I think entrepreneurship, risk-taking, […] is very much related to the culture and spirit in the company, how it is rewarded, how such people are respected – and there are unfortunately rather contrary examples*"

"*We would need our [corporate, OG] top management to act like entrepreneurs*."

"*Maybe we lack growth drivers at the top level. Maybe it already starts there*."

"*We do not have proper 'caretakers'.*"

"*Clear responsibilities would help. We have the issue that there are always too many people a little bit involved, whether on the corporate or BU level. No one dares to decide without involving X, Y, and Z. Most of the times, after he has involved them and decides, someone else comes forward and says: I would also have something to add to this.*"

The issue of innovativeness is a second emerging aspect of entrepreneurial orientation and touches on a fundamental aspect of corporate culture. As engineering-driven company, most managers are instilled with innovativeness as core value and one of the key corporate goals. The past growth and financial performance has also been based on a steady flow on innovations including a number of decisive break-through developments.

Despite the vital role of innovation within the company, it appears necessary to differentiate between two types of innovation, namely *exploitative* and *exploratory* innovation. The differentiation goes back to March (1991), who distinguishes between the notions of exploitation and exploration in the context of organizational learning. While exploitation is associated with refinement, efficiency, and execution, i.e. the use and development of existing knowledge, exploration includes search, experimentation, and discovery, in other words the pursuit of new knowledge.[432] Both modes of organizational learning are essential for the survival of organizations with exploitation to ensure short-term viability and exploitation to safeguard the long-term prospect. Yet, as they are competing for the same scarce organizational resources, there is an immanent trade-off between exploitation and exploration and consequently the need to balance both aspects of organizational learning.[433] In that context Levinthal/March (1993) address the issue of 'learning myopia' as the tendency to privilege the short-term and "ignore the long run" (p. 101) which leads to the common phenomenon that "exploittation tends to drive out exploration" (p. 107). Consequently, they see the main challenge for organizations in sustaining sufficient levels of exploration.

March's notion of exploration vs. exploitation has also emerged as underlying theme in recent innovation research.[434] With the classification of innovation as either exploitative or exploratory in nature, the study adapts the frequently used classification based on Abernathy/Clark (1985, pp. 4-7) who describe innovation along the two domains of (1) their proximity to the current technological trajectory and (2) their proximity to the existing customer and market segments.[435] Along these lines, exploitative innovations can be defined as incremental innovations addressing the needs of existing customers and/or markets. Exploratory innovations, on the contrary, are radical or step-change innovations meeting the needs of emerging customers and/or markets.

In line with March's perspective on organizational learning, literature on innovation also reports the need to balance exploitative and exploratory innovation within organizations – and the inherent dilemma[436] in *simultaneously* pursuing both types of innovation under one organizational umbrella.[437] Apart from competing for scarce management resources, both types of innovation also imply different and often inconsistent demands with respect to organizational capabilities, processes, and setup. And while the return of exploitative innovation is "short-term, near, and clear", the benefits of exploration tend to be "more remote in time, distant, and uncertain".[438] Against this background, Benner/Tushman (2003, p. 239) report that companies have recently favored exploitation which in return is said to "stunt exploratory innovation and

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[432] March (1991), p. 71; Levinthal/March (1993), p. 105.

[433] March (1991), pp. 72-74; Levinthal/March (1993), pp. 105-109.

[434] Danneels (2002), p. 1104; Lee/Lee/Lee (2003), p. 553; Jansen/van den Bosch/Volberda (2006), p. 1661.

[435] Benner/Tushman (2003), p. 242; Jansen/van den Bosch/Volberda (2006), p. 1662.

[436] The issue was first raised in "The Productivity Dilemma" by Abernathy (1978); Lee/Lee/Lee (2003) mention "a strategic dilemma" (p. 553) between exploitation and exploration.

[437] Benner/Tushman (2003), pp. 239, 252; Lee/Lee/Lee (2003), p. 553; Jansen/van den Bosch/Volberda (2006), p. 1661.

[438] Danneels (2002), pp. 1104-1105.

responsiveness to new customer segments" (p. 240).[439] This line of argument mirrors March's 'learning myopia' with the notion of a potential myopia towards exploitative innovation.

The theoretical argument outlined above can be mapped to the different perspectives on innovation expressed during the field interviews. Instead of a balance between exploitation and exploration, the managers report a latent preference for the former, i.e. a preference for gradual, continuous product improvement and a strong focus on existing customer and market segments (though with the notable exception of regional expansion[440]). In line with this assessment, many of the company's most successful product innovations are in fact based on acquired technologies which were then continuously refined, scaled-up and efficiently produced by the company – in a series of extremely rigorous exploitative innovation efforts. Some interviewees concede that the unbalanced innovation approach distracts management attention from exploratory innovations targeted at creating long-term growth. Examples of related statements are:

"*We probably dissipate all our energies on new generations and the improvement of existing products*"

"*μ in millions – that's what we can do.*"

"*Maybe one needs to differentiate a bit between the permanent drive to achieve technical perfection in a certain area and deep-diving into a particular technology – what probably renders the thousands of patents we produce every year – and the aspect of entering a new segment or launching a new product or doing something new.*"

Even though the concern about a too narrow innovation focus on exploitation is not shared by all interviewees, the evidence from the field interviews nonetheless indicates that the issue might contribute to the insufficient entrepreneurial activities and the unsatisfactory level of managerial long-term orientation.

### *3.3.2. Properties of the Strategy-Making Process*

The strategy-making process and its properties was the second most prominently mentioned 'other organizational factor' during the course of the interviews. These properties do not relate to the particular strategic posture of a business unit or the portfolio of specific strategic initiatives but relate to *how* a strategy is formulated, or

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[439] They link this exploitation preference to the increasing process orientation and process management efforts.

[440] Broadly mentioning growth opportunities in Asia, particularly in China and India.

*how* "organizations make important decisions and link them together to form strategies."[441]

In their review of 40 years of strategy-making research, Mintzberg/Lampel (1999) list 10 distinct schools[442] of strategy-formation with a broad range of perspectives on the design, focus, scope, and nature of the strategy-making process (see Table 6).

| **School** | **Primary reference** | **Perspective on the process** | **Perspective on strategy** |
|---|---|---|---|
| Design school | Selznick (1957) | A process of conception | Strategy is designed to achieve a fit of internal strength/weaknesses and external opportunities/treats |
| Planning school | Ansoff (1965) | A formal process | Strategy is a plan based on a formalized, stepwise process supported by dedicated techniques |
| Positioning school | Porter (1980) | An analytical process | Strategy is favorable strategic positioning based on detailed analysis of the competitive environment |
| Entrepreneurial school | Schumpeter (1934), Cole (1959) | A visionary process | Strategy is primarily guidance from visions or broad perspectives |
| Cognitive school | March/Simon (1958) | A mental process | Strategy is a result of a cognitive process and therefore subject to cognitive bias |
| Learning school | Braybrooke/Lindblom (1963), Weick (1969), Quinn (1980) | An emergent process | Strategies are not made but rather emerge from within the organization |
| Power school | Allison (1971), Pfeffer/Salancik (1978), Astley (1984) | A process of negotiation | Strategy is the result of a political process within organizations (micro) or between organizations (macro) |
| Cultural school | Rhenman (1973), Normann (1977) | A social process | Strategy is the result of a social process and deeply rooted in culture |
| Environmental school | Pugh *et al.* (1968), Hannan/Freeman (1977) | A reactive process | Strategy is the reaction or response to external contingencies |
| Configuration school | Chandler (1962), Miles/Snow (1978) | A process of transformation | Strategy is a favorable steady state configuration or the (leap) change from one configuration to another |

*Table 6: Ten Schools of Strategy-Making*[443]

The starting point for the development of the different schools of thought was the so-called *design school*, which was dominant until the 1970s.[444] It perceives strategy-making as the mere formulation of strategy by senior management reflecting the

441 Mintzberg (1973), p. 44.

442 In the same sense, Hart (1992) refer to numerous "different perspectives" and "varying approaches" on strategy-making (p. 327).

443 Based on Mintzberg/Lampel (1999), pp. 22-25.

444 Cf. also in the following ibid.

organization's strengths and weaknesses and the external opportunities and threats. In the late 1970s and early 1980s, the *planning* and *positioning schools* developed the process of conscious thought entailed in the early perception of strategy formulation into a highly formalized, analytical process rendering sophisticated strategic plans and positions. In contrast to this "rational model, which calls for comprehensive and exhaustive analysis prior to decision"[445], a number of alternative perspectives arose that questioned the traditional perspective or focused on individual aspects of strategy-making that have not yet been addressed. In the *entrepreneurial school*, vision and a general sense of purpose and direction, for example, replaces extensive analyses as foundation and guidance for strategy-making.[446] The *learning school* likewise questions the value of a formalized, analytical process as it believes that strategy is not 'made' but rather emerges from within the organization independent of any strategy-making process. The *cognitive school* likewise shifts the focus away from the strategy process as a rational, deterministic system rendering an optimal solution based on analyses towards strategy-making as a mental process that is subject to cognitive biases, sub-optimal heuristics, and, generally, bounded rationality[447]. In a different way, *power* und *cultural school* also relativize the importance of analyses in favor of the "organizational frames of reference"[448] by stressing the extent to which strategy-making is eventually impacted by conflicting (political) interests (in the former case) and by the underlying organizational and national culture (in the latter case). The *environmental school* complements the (pro-)active perspective taken by the other school through a contrary perspective that perceives strategy-making much more as a *re*action to external contingencies. The *configuration school* is twofold and to some extent integrative of the other approaches outlined above. One the one hand, it views organizations and their strategic posture as configurations, i.e. as interplay of organizational characteristics, the competitive environment and a suitable approach to strategy-making. There are, in fact, many of these potential (steady-state) configurations. On the other hand, complementing the static perspective, this school also includes the notion of transformation as (leap) change from one state to another.

In the context of these competing schools it is important to note that even though they all represent rather different approaches to strategy-making, they can still be part of the same process, i.e. strategy-making can integrate different aspects in a complementary fashion. In this sense, Mintzberg/Lampel (1999, p. 27) summarize that strategy-making "*is* judgmental design, intuitive visioning, and emergent learning; it is about transformation as well as perpetuation; it must involve individual cognition and social

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[445] Hart (1992), p. 328; also cf. the discussion of the *comprehensiveness* construct in Fredrickson/Mitchell (1984), pp. 401-402.
[446] Mintzberg (1978), p. 934.
[447] Simon (1957).
[448] Hart (1992), p. 328.

interaction, cooperative as well as conflictive; it has to include analyzing before and programming after as well as negotiating during; and all this must be in response to what may be a demanding environment." Yet, even though strategy-making generally contains all these aspects, a particular strategy-making practice in an organizational and environmental context can nonetheless tilt toward one aspect or dominant school of thought. It is therefore useful to derive strategy-making typologies that cover the broad range of aspects mentioned above to describe, characterize, and contrast particular strategy-making approaches.

Accordingly, strategy research has developed a wide variety of these frameworks and typologies mostly reflecting the emergence of competing schools of thought.[449] Examples are Mintzberg (1973), who contrasts the rational *planning* mode with the visionary *entrepreneurial* mode, Allison (1971), who incorporates the power school into his *bureaucratic* model, or Nonaka (1988), who follows the learning school with his *inductive* strategy-making. Yet, most of these typologies only address selected aspects and do not capture the full range and complexity associated with strategy-making.[450] One notable exception[451] is the integrative framework by Hart (1992) which will be adopted by the study. It differentiates the following five strategy-making modes representing the prevailing patterns of action or routines: *Command*, *symbolic*, *rational*, *transactive*, and *generative*.[452] It can be interpreted as an extension of Mintzberg's (1973; 1978) three strategy-making modes – *entrepreneurial*, *adaptive*, and *planning* – incorporating additional aspects from other schools or typologies as needed.[453] It is important to note that Hart's framework cannot be interpreted in 'either/or' terms because the different modes are not meant to be mutually exclusive but rather complementary strategy-making capabilities.[454] Therefore, a company should generally try to combine multiple modes of strategy-making in order to counter the limitations and biases of the individual modes and, thus, eventually enhance performance.[455]

The different modes can be characterized as follows (see also Table 7):[456] In the *command* mode, the top management prescribes the desired behavior and 'dictates' the strategy top-down. This mode can be linked back to the *design school* with the 'commander' conceiving the organization's strategy on his own. On the contrary, in the *generative* mode, the strategy solely emerges bottom-up where the top management

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449 For a detailed overview, cf. Ibid., pp. 328-333.
450 Hart/Banbury (1994), p. 251.
451 Regnér (2003), p. 58.
452 Hart (1992), pp. 333-335.
453 Ibid., p. 336.
454 Hart/Banbury (1994), p. 253.
455 Ibid., pp. 255-256.
456 Hart (1992), pp. 335-339.

merely endorses and sponsors strategic initiatives. The notion of emerging strategy clearly borrows from the *learning school*. Hart refers to these two modes as *extreme* strategy-making modes because those do not utilize the full range of organizational capabilities. Therefore, they are less predictive of high company performance than the other three modes which Hart refers to as *hybrid* modes as they combine elements of top management direction and lower/middle management initiative. In the *symbolic* mode, strategy-making is strongly guided by the top management's compelling vision and clear corporate mission, which closely ties in with the *entrepreneurial school*. The *rational* mode is characterized by a high level of information processing in formal processes and planning systems. It can be linked to the 'rational model' of the *planning* and *positioning school*. Lastly, in the *transactive* mode, strategy-making is conducted as iterative and participative process stressing strategy-making as a social and organizational process which is also in part embraced by the *cultural* and the *power school*.

| | **Mode** | **Style** | **Role of Top Management** | **Role of Lower/ Middle Mgmt.** | **Associated school** |
|---|---|---|---|---|---|
| ***Extreme mode*** | **Command** | *Imperial*<br>Strategy driven by leader or small top management team | *Commander*<br>Provide direction | *Soldier*<br>Obey orders | *Design school* |
| ***Hybrid modes*** | **Symbolic** | *Cultural*<br>Strategy driven by mission and vision of the future | *Coach*<br>Motivate and inspire | *Player*<br>Respond to challenge | *Entrepreneurial school* |
| | **Rational** | *Analytical*<br>Strategy driven by formal structure and planning systems | *Boss*<br>Evaluate and control | *Subordinate*<br>Follow the system | *Planning* and *positioning school* |
| | **Transactive** | *Procedural*<br>Strategy driven by internal process and mutual adjustment | *Facilitator*<br>Empower and enable | *Participant*<br>Learn and improve | *Cultural* and *power school* |
| ***Extreme mode*** | **Generative** | *Organic*<br>Strategy driven by organizational actors' initiative | *Sponsor*<br>Endorse and sponsor | *Entrepreneur*<br>Experiment and take risks | *Learning school* |

*Table 7: Strategy-Making Modes*[457]

During the field interviews, the managers' long-term growth orientation was often linked to *how* the long-term issues were addressed in the course of strategy formulation and to the role and current design of the (formal) strategy process. The interviewees clearly concede a dominance of the formal process and the related planning

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457 Own compilation based on Hart/Banbury (1994), p. 254.

systems. On the one hand, they see the wide range of strategy-making routines often merely confined to the procedures of the strategy process. One consequence is that strategic issues are usually not approached immediately but only channeled into the process and dealt with according to the process manual. Another consequence is that the strategy process itself is believed to have a strong focus on elaborate long-term planning and most interviewees concede a deficit in the core activity of strategy development. As a result, the current strategy process is primarily concerned with the existing business and its future development and puts too little emphasis on the identification and evaluation of new business opportunities and their related growth potential. Associated comments by the interviewees are:

"*We have the tendency to always cast strategic issues onto the strategy process instead of dealing with them right away.*"

"*We need to develop new business – this needs to result in business and in nothing else. I am terrified about the process orientation at [company]. We immediately invent the process of business development with guiding principles and building blocks and then we are at the level of overall concepts and planning processes and systems of control […], and the poor activist developing some business somewhere is not here."*

"*It irritates me that people, when they think about strategy, they immediately think about the strategy process – there is no innovation to strategy to be found.*"

"*We believe we can somehow 'plan' growth.*"

"*To occupy yourself with processes does not necessarily mean you are generating entrepreneurial ideas...*"

These portrayals strongly indicate the dominance of the *rational* mode if interpreted in terms of Hart's strategy-making framework. Hart argues that companies with an exclusive focus on rational strategy-making will most likely exhibit superior current profitability and growth but might not perform equally well in terms of long-term growth and positioning.[458] He sees success in the latter performance dimensions connected to a strategy-making following a symbolic and transactive mode.

The perspective of a dominant rational mode and an entailed negative impact on manager's long-term growth orientation was also shared during the two group discussion. Strategy-making, and especially the extent of *rational* strategy-making, was agreed upon as second most prominent 'other organizational factor'.

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[458] Hart (1992), pp. 341,345.

### *3.4. Propositions to Be Tested and Resulting Research Model*

Based on the qualitative evidence gathered during the field interviews and the two group discussions, in the following section the specific research hypotheses will be derived to be tested in the subsequent questionnaire survey dealing with the dysfunctional effect of RAPM (Section E3.4.1), the impact of corporate entrepreneurship (Section E3.4.2), and the impact of strategy-making (Section E3.4.3). Lastly, it summarizes the hypotheses in the resulting research model (Section E3.4.4).

#### *3.4.1. Dysfunctional Effect of RAPM*

On the existence of the dysfunctional effect (research question 1), the interviews – once again[459] – provide seemingly strong anecdotal evidence in support of the dysfunctionality proposition. The study therefore adopts the following hypothesis for the questionnaire survey which has been tested in previous RAPM studies[460] without rendering definite answers:

$H_1$: The reliance on short-term APM has a dysfunctional effect on managerial long-term growth orientation.

The study aims to substantiate the anecdotal findings with quantitative evidence using the same management population. Survey results *not* in support of the hypothesis would (1) imply that the value of anecdotal evidence on this issue is potentially limited and (2) seriously question the proposed dysfunctional relationship considering the most-likely setup.

With respect to the exploration of the role and relevance of the organizational context (research questions 2 and 3), corporate entrepreneurship and strategy-making emerge as potential other relevant factors with respect to managerial long-term orientation.

#### *3.4.2. Impact of Corporate Entrepreneurship*

In terms of determining the impact of corporate entrepreneurship, the study will – in line with corporate entrepreneurship literature[461] – employ the Entrepreneurial Orientation (EO) concept to measure the (behavioral) extent of corporate entrepreneurship as prerequisite for internal innovation, venturing and renewal. The study assumes a positive relationship from each EO dimension to managerial long-term orientation. This assumption reflects both the evidence from the field interviews[462] as

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[459] Cf. previous studies mentioned in Chapter C1.

[460] Merchant (1990), p. 302; Van der Stede (2000), p. 612; both studies tested for the dysfunctional effect on managerial long-term orientation in general captured by the time orientation construct.

[461] Lumpkin/Dess (1996), p. 136; Lyon/Lumpkin/Dess (2000), p. 1056; Dess/Lumpkin (2005), p. 147.

[462] See Section E3.3.1.

well as the positive impact of Entrepreneurial Orientation on performance including sales growth mentioned by previous studies.[463]

To validate the Entrepreneurial Orientation as 'other relevant organizational factor', the survey will therefore test the following hypothesis:

$H_{2.1}$: The Entrepreneurial Orientation of the organization has a positive impact on managerial long-term growth orientation.

In connection with the sub-hypotheses

$H_{2.1a)}$: The innovativeness of the organization has a positive impact on managerial long-term growth orientation.

$H_{2.1b)}$: The proactiveness of the organization has a positive impact on managerial long-term growth orientation.

$H_{2.1c)}$: The risk-taking of the organization has a positive impact on managerial long-term growth orientation.

To determine the *relative* importance of Entrepreneurial Orientation with respect to RAPM as driver of managerial long-term growth orientation, the study adopts the assumption[464] that the most prominent other factors identified are at least as important as RAPM and will therefore test the following hypothesis:

$H_{3.1}$: The impact of Entrepreneurial Orientation on managerial long-term growth orientation is equal or greater to the impact of RAPM.

Evidence from the field interviews also indicates the importance of both structural and individual antecedents in determining the level of entrepreneurial orientation and corporate entrepreneurship in general terms.

To capture the structural antecedents, the study will, as outlined above, adopt the notion of an entrepreneurial environment as described by the Corporate Entrepreneurship Assessment Instrument (CEAI) by Hornsby/Kuratko/Zahra (2002). Consistent with the findings from the interview phase as well as with previous studies[465], a positive relationship will be assumed between the different dimensions of

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[463] Covin/Slevin (1991), p. 9; Lumpkin/Dess (1996), p. 151; Lumpkin/Dess (2001), p. 445. Nevertheless, critics see a "strong normative bias" (Dess/Lumpkin/Covin (1997), p. 678) assuming an inherent value of entrepreneurial activity not adequately founded on empirical evidence.

[464] This assumption reflects the notion of the 'relevant organizational context' and the underlying assumption that RAPM as management accounting practices is only one of the rules and resources actors draw upon (see Section B2.2.2).

[465] Kuratko/Montagno/Hornsby (1990), p. 49; Hornsby/Kuratko/Montagno (1999), p. 11; Hornsby/Kuratko/Zahra (2002), pp. 259-260.

the entrepreneurial environment and entrepreneurial orientation as dependent. Consequently, the study will test for

$H_{2.2}$: The entrepreneurial environment has a positive impact on the Entrepreneurial Orientation of an organization.

In connection with the sub-hypotheses

$H_{2.2a)}$: Management support has a positive impact on the Entrepreneurial Orientation of an organization.

$H_{2.2b)}$: Work discretion/autonomy has a positive impact on the Entrepreneurial Orientation of an organization.

$H_{2.2c)}$: Rewards/reinforcement have a positive impact on the Entrepreneurial Orientation of an organization.

$H_{2.2d)}$: Resource/time availability has a positive impact on the Entrepreneurial Orientation of an organization.

$H_{2.2e)}$: Organizational boundaries have a positive impact on the Entrepreneurial Orientation of an organization.

In terms of the individual antecedents, the study will, as indicated above, employ the proclivity for entrepreneurship concept by Stewart *et al.* (1999) to capture the alleged psychological predispositions of entrepreneurs. Even though literature on entrepreneurship has not reached a final decision on the contribution of the different traits, most studies assume a positive relationship between the proclivity for entrepreneurship and (individual) entrepreneurial behavior.[466] Similarly, a strong positive influence on entrepreneurial activity was attributed to the risk propensity dimension during the interviews.

The studies mentioned above refer to the impact of *individual*-level dispositions on *individual* behavior. Yet, the study only addresses entrepreneurial behavior as *collective* phenomenon in terms of organizational entrepreneurial orientation. This entails an issue in terms of different units of analysis. While it makes sense to analyze the impact of organizational-level variables on individual behavior, it is not meaningful to study the (direct) impact of individual-level variables on organizational behavior. Therefore the study will directly analyze the impact of the individual proclivity for entrepreneurship on the respective individual managerial long-term orientation as key dependent variable assuming a positive relationship.

The positive relationship can be argued along two paths: For one, it is reasonable to assume a direct relationship between an individual's proclivity for long-term growth

[466] Carland *et al.* (1984), p. 357; Stewart *et al.* (1999), p. 192; Stewart *et al.* (2003), pp. 30-31.

and his respective proclivity for entrepreneurship as internal innovation and venturing are primary means to achieve long-term growth. In addition, the relationship can be an indirect one mediated by the entrepreneurial orientation construct in the logic of the integrated perspective on corporate entrepreneurship indicated in Figure 6. This carries the implicit assumptions that (1) the individual-level proclivity for entrepreneurship positively impacts individual-level behavior, which (2) in turn positively affects organizational-level behavior as aggregation across individuals, which lastly (3) promotes managerial long-term growth orientation as hypothesized in $H_{2.1}$.

The study will therefore include the following hypothesis:

$H_{2.3}$: The individual proclivity for entrepreneurship has a positive impact on managerial long-term growth orientation.

In connection with the sub-hypotheses

$H_{2.3a)}$: The individual achievement orientation has a positive impact on the managerial long-term growth orientation.

$H_{2.3b)}$: The individual preference for innovation has a positive impact on the managerial long-term growth orientation.

$H_{2.3c)}$: The individual achievement orientation has a positive impact on the managerial long-term growth orientation.

While the proclivity for entrepreneurship captures the managers' preference for innovation, it does not explicitly differentiate between exploitative and exploratory innovation. Yet, the distinction appears pivotal with respect to determine a manager's long-term growth orientation.[467] Consequently, the study will, in addition, test for the respective impact of a preference for exploitative and exploratory innovation under the assumption that a preference for exploratory innovation has a greater positive impact on long-term growth orientation. Accordingly, the survey will test the following hypothesis:

$H_{2.4}$: The individual preference for exploratory innovation has a greater positive impact on managerial long-term growth orientation than the preference for exploitative innovation.

### *3.4.3. Impact of Strategy-Making*

In terms of determining the impact of strategy-making on managerial long-term growth orientation, the study will adopt Hart's (1992) notion of the five strategy-making modes as organizational capabilities and prevailing procedures and routines in strategy formulation. As indicated above, both evidence from the field as well as Hart

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[467] See Section E3.3.1.

himself link the (exclusive) dominance of the *rational* mode to inferior long-term growth performance, which is assumed to also apply to long-term growth orientation. On the contrary, Hart positions the *symbolic* and *transactive* mode as beneficial for long-term success, which implies a positive impact also on the managers' long-term orientation. As Hart (1992, p. 340) positions the three hybrid modes as "more predictive of high performance" than the two extreme modes, the study will additionally assume a negative relationship between the *command* and *generative* modes and managerial long-term growth orientation, for reference purposes.

In order to also validate strategy-making as 'other relevant organizational factor', the survey will adopt the following hypotheses:

$H_{2.5a)}$: The command mode in strategy-making has a negative impact on managerial long-term growth orientation.

$H_{2.5b)}$: The symbolic mode in strategy-making has a positive impact on managerial long-term growth orientation.

$H_{2.5c)}$: The rational mode in strategy-making has a negative impact on managerial long-term growth orientation.

$H_{2.5d)}$: The transactive mode in strategy-making has a positive impact on managerial long-term growth orientation.

$H_{2.5e)}$: The generative mode in strategy-making has a negative impact on managerial long-term growth orientation.

Lastly, to determine the *relative* importance of strategy-making with respect to RAPM as driver of managerial long-term growth orientation, the study again adopts the assumption that strategy-making (in line with the Entrepreneurial Orientation) is at least as important as RAPM and will therefore test the following hypothesis

$H_{3.2}$: The impact of strategy-making on managerial long-term growth orientation is equal or greater to the impact of RAPM.

### *3.4.4. Resulting Research Model*

The research model resulting from the different hypotheses derived above is illustrated in Figure 7. It gives an overview of the (aggregate) independent variables under inquiry and their hypothesized direct or indirect[468] impact on managerial long-term orientation as dependent variable.

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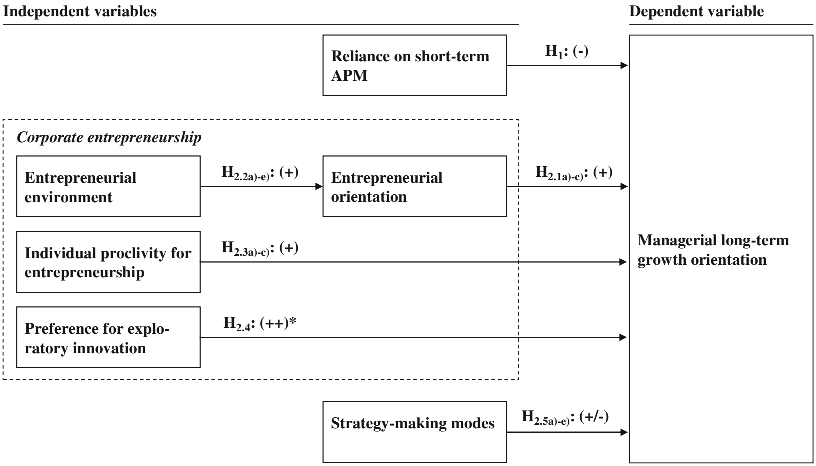
[468] In the case of the entrepreneurial environment.




* Greater than the (positive) impact of the (individual) preference for exploitative innovation.
Not shown for the sake of clarity: $H_{3.1}$ and $H_{3.2}$.

*Figure 7: Overview Research Model and Hypotheses*

It includes the hypothesized dysfunctional impact of the reliance on short-term accounting performance measures (research question 1) as well as the impact of different aspects of corporate entrepreneurship and strategy-making as potential 'other relevant factors' of the organizational context (research question 2).

Not shown for the sake of clarity are the hypotheses attached to research question 3. It contrasts the impact of the reliance on short-term APM on the one and corporate entrepreneurship and strategy-making on the other hand.

# F Questionnaire Survey

To test the hypotheses derived during the field interview phase, a questionnaire survey was conducted addressing the middle management population at selected business units of the researched company.

This part of the research report describes the sample characteristics as well as the survey development and administration details (Chapter F1). Then, it specifies the different measures employed in the survey and their development (Chapter A1). Finally, it will report the survey results (Chapter A1).

## 1. Sample and Procedure

In line with the research scope, the survey targets the middle management population (management levels 2 and 3 at business unit level) of the researched organization (see Section C3.1.2). Nonetheless, the survey intends to draw conclusions beyond the researched company. Therefore, the approach entails a systematic *coverage error.*[469] Only a fraction of the entire *survey population*, the *general* middle management population, has a non-zero chance of being included in the survey. This systematic flaw is being addressed through the crucial case setup, which purposely does not try to achieve adequate coverage of the survey population but deliberately chooses a small and to some extent extreme sample.

During the interview phase, five of the six business units (A-E) agreed to participate in the subsequent questionnaire survey. Consequently, the *sample frame* as the part of the survey population from which the sample is drawn consists of the middle managers from these five business units. Units A, D, and E granted access to their entire middle management population. This eliminates a potential *sampling error* as the sample equals the sample frame. Units B and C confined their respective sample to a smaller sub-sample due to capacity restrictions. The requested randomization of the sample should limit the sampling error at these units. The business units' human resources departments provided contact information for a sample of 832 middle managers in total explicitly including business unit personnel outside of Germany.

The questionnaire was developed in line with the Total Design Method by Dillman (2007). Prior to sending it to the recipients, the survey was subject to substantial pre-testing.[470] In order to detect potential flaws with respect to the general design and content of the survey, it was first submitted to the scrutiny of 6 academics and 3 senior managers from the researched companies for review and discussion. In addition, a small formal pilot survey was conducted to detect issues with respect to wording and

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[469] In the following the study employs the definitions by Dillman (2007), pp. 196-198.
[470] Ibid., pp. 140-148.

interpretation of individual questions in the particular organizational context. The pilot group consisted of 15 randomly selected middle managers who were not part of the survey sample. After completion of the pilot survey, feedback from these managers was collected either orally or in writing. Both pre-test elements only resulted in minor modifications of selected items and, thus, indicate sufficient construct validity and decrease concerns about measurement errors due to questions being misunderstood.

The survey was administered as a web-based online survey. Compared to paper-based surveys, this mode of administration improves both the efficiency and effectiveness of self-report surveys.[471] In terms of efficiency, online surveys allow for a less costly duplication, distribution, and collection of survey data and do not require any data entry procedures. In terms of effectiveness, it allows for dynamic and adaptive questionnaire design such as the rotation of items and improves data validity through instant consistency checks and the elimination of data entries. Meinert/Vitell/Blankenship (1998, pp. 41-42) especially recommend the use of computer-based questionnaires in the case of sensitive questions like those relating to personal preferences.

The survey was sent out in English, the official corporate language. To minimize a bias towards socially desired answers, it was administered by an external third party research agency and respondents were assured that their responses would be subject to strict confidentiality, analyzed anonymously by the researcher and shared with the company only in aggregated form.

The survey was launched at the end of November 2006 and was active for 6 weeks. Initially, the link to the survey website and personalized log-ins were sent out to the 832 managers together with a cover letter briefly explaining the research project and a letter of endorsement by the respective business unit leadership. A reminder including the link and the log-in was sent out after two weeks to all non-respondents. The procedure yielded a completed sample of 432 completed questionnaires. 20 questionnaires were incomplete and had to be excluded from the sample. As a result, 412 usable records were used to test the hypotheses. The resulting effective response rate of 50.1% was satisfactory considering the length of the questionnaire and the timing of the survey at the end of the (budgetary) year.

The final sample of 412 managers (see Figure 8) was dominated by business unit A with 282 managers or 68.4% of that sample. Units D and E with 55 and 38 managers, respectively, accounted for 13.3% and 9.2% of the sample. The units B and C who had restricted their sample size contribute only marginally with 9 (2.2%) and 28 (6.8%) of the responses. The potential sampling error indicated above is therefore not likely to have a substantial impact on the survey results. Due to the preponderance of unit A,

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[471] Meinert/Vitell/Blankenship (1998), p. 34; Dillman (2007), p. 354.

any conclusions drawn from the sample will be verified with respect to the sub-sample comprising units B-E to control for a potential bias within the middle management of unit A affecting overall survey results. 31.1% of the population belonged to the second and 62.9% to the third management level. The remaining 6.0% of managers had either not answered the question (2.1%) or had indicated "other" (3.9%).

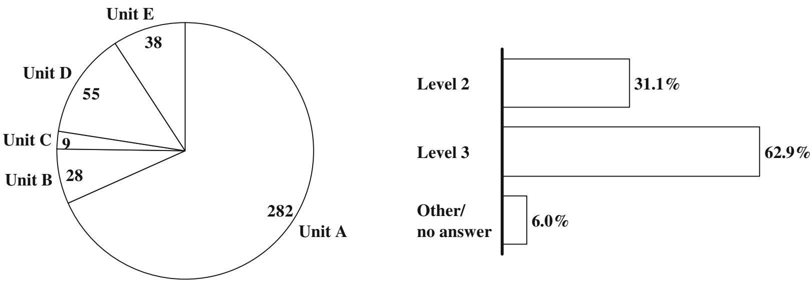


*Figure 8: Sample Composition by Business Unit and Management Level*

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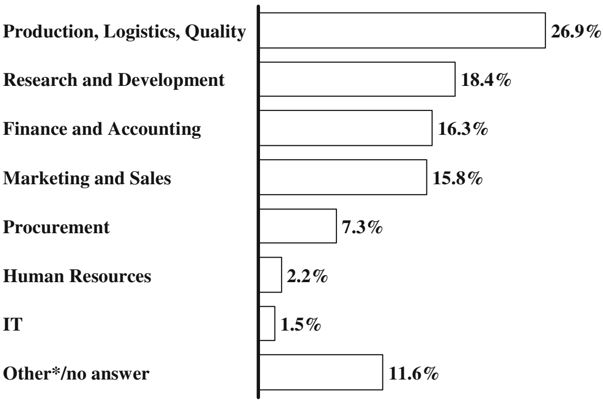
Functionally, the sample was split as indicated in Figure 9. Except for the stronger-than-expected share of Finance and Accounting, the functional split is a fair representation of the distribution within the sample frame.




* "Other" includes general, regional, product, project, and plant management.

*Figure 9: Sample Composition by Function*

In terms of age and tenure (see Figure 10), the sample was dominated by managers between 40 and 49 years of age (55.6%) and by managers with a long (> 5 years) tenure both at the company (86.4%) and at their respective BU (59.0%). The sample was predominantly male (95.9%).[472]

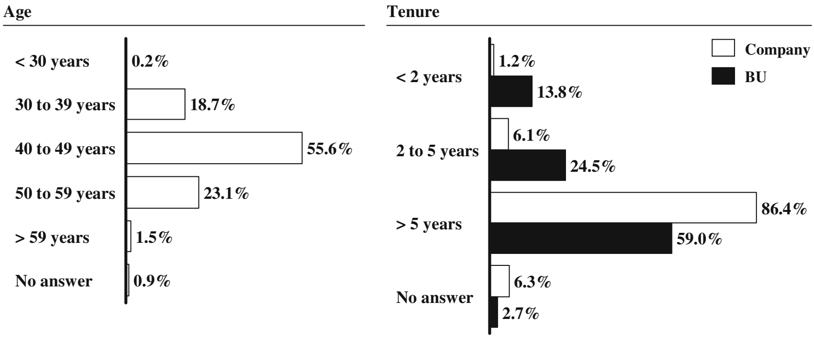



*Figure 10: Sample Composition by Age and Tenure*

In order to test for a potential non-response bias, the final sample of 412 respondents was split into three equally large sub-samples according to the date of survey completion (early, middle, and late respondents with 137, 138, and 137 managers respectively).[473] The test is based on the assumption that late respondents should be similar to non-respondents. Accordingly, the mean responses for all latent variable scores were compared across the three groups employing ANOVA and pair-wise Bonferroni T-tests within the SPSS 15.0 software package. The absence of any significant differences (at $p < .1$) reduces the concerns about a possible non-response bias. (The results of the ANOVA by construct are provided in the Appendix)

[472] No answer: 1.0%.

[473] Armstrong/Overton (1977), pp. 397-401.

## 2. Measures

The measurement of the different constructs followed standard scale development and validation procedures.[474] In all cases, existing scales were used directly or adapted to the context. With two exceptions, variables were measured on seven point Likert-type scales anchored by 1 (strongly disagree) and 7 (strongly agree).[475]

This chapter introduces the scales employed for each latent construct (Section F2.1) and reports on their psychometric properties (Section F2.2). A complete list of the items (including the eliminated ones) is provided in the Appendix.

### *2.1. Measure Development*

The following scales were included in the questionnaire:

***Emphasis on meeting short-term budgetary targets* (EMPHASIS):** As indicated in Section C2.1, the study builds on the RAPM decomposition by Van der Stede (2001) and employs a narrow time frame oriented definition of RAPM according to the sub-dimension *emphasis on meeting the (short-term) budget*. The study employs Van der Stede's seven-item instrument *emphasis on meeting the budget* with a reported Cronbach α of .83 to measure "the extent to which top management considers meeting the budget essential on a short-term basis"[476].

Van der Stede explicitly approves and encourages researchers to utilize sub-dimensions of his conception to measure and analyze particular aspects of interest.

***Long-term growth orientation* (LGO):** As no instrument for long-term growth orientation has been reported so far, the measurement adapted existing instruments measuring general growth orientation. The approach has already been used to measure *international* growth orientation.[477] The five-item instrument was based on two growth orientation scales from Autio/Sapienza/Almeida (2000) and Nummela/ Puumalainen/Saarenketo (2005) to measure the perceived "importance of growth to a firm"[478]. The long-term was included by adding "in the long run (i.e., concerning the next 4-8 years), …". It captures the relevance managers attribute to strong sales growth

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[474] Cf. for example Gerbing/Anderson (1988).

[475] Exceptions for Likert-scales were *long-term time orientation* and one (eventually eliminated) item of *long-term growth orientation* where respondents were asked to allocate percentage points across categories (adding to 100%). In the case of the three entrepreneurial orientation scales, the Likert-scales were anchored by dichotomous statements.

[476] Van der Stede (2001), p. 129.

[477] Nummela/Puumalainen/Saarenketo (2005), p. 11.

[478] Autio/Sapienza/Almeida (2000), p. 917.

as a long-term target.[479] The original scales comprised 3 items each with a reported α of .83 for the scale by Autio/Sapienza/Almeida (2000) (no α was reported for the other scale).

***Long-term time orientation* (LTO)[480]:** Managerial time orientation was measured by an instrument which was initially introduced by Lawrence/Lorsch (1967) and later used in the RAPM studies by Otley (1978), Merchant (1990), and Van der Stede (2000). The original version of the instrument asked respondents to indicate the percentage of time spent on matters which will be relevant (i.e. affect the budget or profit and loss statement) within (a) 1 month or less, (b) 1 month to 1 quarter, (c) 1 quarter to one year, and (d) 1 to 5 years. Percentages should sum up to 100%. In order to better differentiate between the medium-term (1 to 3 years) and long-term (4 to 8 years) perspective according to the companies planning regime, the last category was split and adapted accordingly. In return, the first two categories were merged as the differentiation of month vs. quarter is not needed with regard to the measurement of managerial long-term orientation. The adaptation results in the following time horizons of (a) 1 quarter or less, (b) 1 quarter to 1 year, (c) 1 to 3 years, and (d) 4 to 8 years. Percentages allocated to the last category provide a measure for managerial long-term time orientation as (one) indicator of managerial long-term orientation.

***Entrepreneurial orientation* (EO):** As indicated above (see Section E3.3.1), the study employs the Entrepreneurial Orientation concept by Covin/Slevin (1989) to capture the level of entrepreneurial behavior on the organizational level in terms of innovativeness, proactiveness, and risk-taking. While Covin/Slevin initially considered their scale as an aggregate, uni-dimensional measure of Entrepreneurial Orientation,[481] recent research proposes a multi-dimension approach that acknowledges the fact that each of the EO dimensions might vary independently and potentially display a unique contribution to firm performance.[482]

In line with the latter view on Entrepreneurial Orientation, the study separately measures ***organizational innovativeness*** **(ORGINNO)**, ***organizational proactiveness*** **(ORGPRO)**, and ***organizational risk-taking*** **(ORGRISK)** with three items each taken from the original Entrepreneurial Orientation scale by Covin/Slevin (1989). ORGINNO measures the frequency and extent of process or product innovations, ORGPRO the level of aggressiveness towards the competition, and ORGRISK the organization's risk-taking behavior. For these individual sub-scales Kreiser/

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[479] The definition of long-term as year 4 to year 8 reflects the company's planning regime, which differentiates the budgetary year 1, a mid-term horizon comprising year 2 and 3 and a long-term perspective until year 8.

[480] Even though the study focuses on LGO as dependent, LTO is included for reference purposes.

[481] Covin/Slevin (1989), p. 79.

[482] Lumpkin/Dess (1996), p. 165; Antonacic/Hisrich (2001), p. 499; Lumpkin/Dess (2001), p. 431; Kreiser/Marino/Weaver (2002), p. 72.

Marino/Weaver (2002, p. 81) reported a Cronbach α of .75, .71, and .74 for ORGINNO, ORGPRO, and ORGRISK, respectively.[483]

***Entrepreneurial environment:*** As outlined above, the study adopts the Corporate Entrepreneurship Assessment Instrument (CEAI) by Hornsby/Kuratko/Zahra (2002) in order to capture the *entrepreneurial environment* as "organizational factors that foster corporate entrepreneurial activity within a company" (p. 263). The factor structure of the CEAI comprises the following five distinctive dimensions of entrepreneurial environment: ***Management support*** **(SUPPORT)** with 17 items and α of .89, ***work discretion/autonomy*** **(AUTONOMY)** with 10 items and α of .87, ***rewards/ reinforcements*** **(REWARDS)** with 5 items and α of .75, ***time availability*** **(TIME)** with 6 items and α of .77, and ***organizational boundaries*** **(BOUNDARIES)** with 5 items and α of .64. Due to capacity restrictions in self-administered surveys, the item batteries were shortened reflecting both the factor loadings reported by Hornsby/Kuratko/Zahra (2002) and suitability to the particular organizational context.

These adjustments result in an 8-item version of SUPPORT measuring the top management support for new idea development, innovation and risk-taking, a 6-item version of AUTONOMY measuring a manager's leeway to take independent decisions based on judgment, a 4-item version of REWARDS measuring the appreciation of good performance, a 4-item version of TIME measuring time availability for long-term issues, and a 4-item version of BOUNDARIES measuring the extent of structural support.

***Proclivity for entrepreneurship:*** As indicated in the previous part, the study aims at capturing the (individual) psychological predisposition for (corporate) entrepreneurship in terms of the proclivity for entrepreneurship concept by Stewart *et al.* (1999) who propose ***achievement orientation*** **(ACHIEVE)**, ***preference for innovation*** **(INNOVATE)**, and ***risk-taking propensity*** **(RISK)** as the most different tiating personality traits. For the measurement, Stewart *et al.* (1999) rely on psycho logical constructs from the widely-used personality assessment instruments by Jackson (1967) that demonstrate sound psychometric properties.[484] Specifically, they employ the *achievement* scale of the Personality Research Form (PRF) and the *risk-taking* and *innovation* scale of the Jackson Personality Inventory (JPI). All of these scales comprise 20 bipolar questions. As the resulting total of 60 items could not be included in the questionnaire due to capacity restrictions, the study chose to employ the following alternative scales which have demonstrated both sufficient content proximity to the Jackson's instruments and applicability in a management environment.

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[483] Values for ORGINNO and ORGRISK were based on two-item solution.
[484] Steers/Braunstein (1976), p. 254; Stewart *et al.* (2003), p. 35; Zhao/Seibert/Hills (2005), p. 1272.

The 7-item ACHIEVE scale combines the 5-item *n achievement* scale of the Manifest Needs Questionnaire (MNQ) by Steers/Braunstein (1976) with a reported α of .66 and two additional items taken from the Mehrabian Achieving Tendency Scale (MATS) by Mehrabian (1994). Both scales measure a person's need (i.e. desire, pursuit, and strive) to achieve a stable personality trait and exhibit highly acceptable correlation to the *achievement* scale of the PRF.[485]

The 7-item INNOVATE construct was taken from Mueller/Thomas (2000) who developed this measure of the "tendency to be creative in thought and action" (p.63) based on the *innovation* scale of the JPI. Mueller/Thomas report Cronbach α ranging from .66 to .82 for their different country samples.

The 6-item RISK construct was taken from Zhao/Seibert/Hills (2005) who developed the scale based on previous work by Gomez-Mejia/Balkin (1989) and Slovic (1972).[486] It measures risk propensity as general personality trait with a reported α of .68 and exhibits strong, statistically significant correlation with the *risk-taking* scale from the JPI.[487]

***Preference for exploitative/exploratory innovation*** **(EXPLOIT/EXPLORE):** For the differentiation of the managers' preference for innovation with respect to March's notion of exploitation vs. exploration, the study adapts two 6-item scales from Jansen/van den Bosch/Volberda (2006) with reported α of .80 and .86 respectively. The original scales measure the extent of exploitative and exploratory innovation of a company or business unit. As the study intends to capture preferences of individual managers, the scales were adapted to reflect the relevance managers attribute to exploitative (EXPLOIT) and exploratory (EXPLORE) innovation. For that purpose, the managers were asked to rate their agreement with the business unit's need to pursue aspects of exploitative and exploratory innovation respectively.

**Strategy-making modes:** With respect to measuring the different types of strategy formulation along the five strategy-making modes by Hart (1992), the study employs the strategy-making process mode instrument developed by Hart/Banbury (1994). They use a 3-item subscale and two 4-item sub-scales to measure the hybrid modes **SYMBOLIC**, **RATIONAL** and **TRANSACTIVE**, respectively, rendering Cronbach α of .70, .76, and .70. These scales capture the extent by which strategy-making is influenced by mission and vision (SYMBOLIC), formal planning (RATIONAL), or iterative processes and participation (TRANSACTIVE). The extreme modes **COMMAND** and **GENERATIVE** were operationalized with 3-item constructs with reported α scores of .67 and .61. They measure the extent by which strategy-making is

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485 Steers/Braunstein (1976), p. 256; Mehrabian (1994), p. 359.
486 The complete item list has been obtained from the authors upon request.
487 Zhao/Seibert/Hills (2005), pp. 1267-1268.

either dominated by the top management team (COMMAND) or by 'grassroots' initiatives of organizational members (GENERATIVE). The interviews identified the RATIONAL mode as critical with respect to long-term growth orientation. Hence, the study included three additional items adapted from the "three essential features"[488] of the *planning* mode by Mintzberg (1973), which is equivalent to the RATIONAL mode by Hart (1992).

### *2.2. Measure Validation*

In line with Gerbing/Anderson (1988), the quality of the measurement model was assessed prior to the test of the hypotheses from the theoretical model. To ensure reliable measures of the different constructs used in the study, the items administered in the questionnaire underwent a scale purification procedure employing reliability analysis statistics available in the SPSS software package.

| **Construct** | **Details** | **# of items*** | **Cronbach α** |
|---|---|---|---|
| EMPHASIS | Emphasis on meeting short-term budgetary targets | 6 | .89 |
| LGO | Long-term growth orientation | 3 | .80 |
| LTO | Long-term time orientation | 1 | n/a |
| ORGINNO | Organizational innovativeness | 3 | .75 |
| ORGPRO | Organizational proactiveness | 3 | .68 |
| ORGRISK | Organizational risk-taking | 3 | .72 |
| SUPPORT | Management support | 7 | .83 |
| AUTONOMY | Work discretion/autonomy | 4 | .82 |
| REWARDS | Rewards/reinforcement | 4 | .80 |
| TIME | Time availability | 4 | .70 |
| BOUNDARIES | Organizational boundaries | 4 | .60 |
| ACHIEVE | Achievement orientation | 4 | .64 |
| INNOVATE | Preference for innovation | 4 | .65 |
| RISK | Risk propensity | 4 | .70 |
| EXPLOIT | Preference for exploitative innovation | 5 | .60 |
| EXPLORE | Preference for exploratory innovation | 6 | .65 |
| COMMAND | Command mode | 3 | .71 |
| SYMBOLIC | Symbolic mode | 3 | .71 |
| RATIONAL | Rational mode | 5 | .85 |
| TRANSACTIVE | Transactive mode | 4 | .78 |
| GENERATIVE | Generative mode | 3 | .73 |

*After scale purification procedure; eliminated items are indicated in the Appendix.

*Table 8: Inter-Item Reliability*

The examination of inter-item and item-to-total correlations resulted in the elimination of some items in order to improve the reliability of the individual scales. The final

[488] Mintzberg (1973), p. 48 – items were not empirically tested.

scores showed satisfactory to good reliability, with Cronbach α ranging from .60 for BOUNDARIES and EXPLOIT to .89 for EMPHASIS (see Table 8 for details).

Next, the uni-dimensionality of the different constructs was assessed using confirmatory factor analysis (CFA) employing the LISREL 8.80 software package.[489] This involves mirroring the assumed factor structure of the measurement model with a covariance-based structural equation model.[490] If the model exhibits good fit with the empirical data, the facture structure is confirmed. The confirmatory factor analysis is deemed superior to exploratory factor analysis in assuring the uni-dimensionality of constructs or factor structures.[491]

As there is no single significance test to determine the goodness-of-fit of a covariance-based structural equation model, researchers usually take into account a number of fit measures in order to evaluate a model.[492] The study adapts the following broad range of widely used fit indices: The ratio of *chi-square divided by the degrees of freedom* ($X^2$/dF), the *root mean square error of approximation* (RMSEA), the *standardized root mean square residual* (SRMR), the *comparative fit index* (CFI), and the *goodness-of-fit index* (GFI). These measures are also employed in the following to evaluate the structural models relating to the hypotheses to be tested.

The $X^2$ statistic tests the appropriateness of a theoretical model against the background of empirical data by testing whether the model-implied covariance matrix equals the empirical covariance matrix. Following Jöreskog/Sörbom (2001), the study employs the $X^2$ statistic descriptively and takes the ratio $X^2$/dF as goodness-of-fit measure with values $\leq 2$ indicating good fit and values between 2 and 3 indicating acceptable fit.[493]

While the $X^2$ statistic tests for *exact* fit, the RMSEA acknowledges the fact that the theoretical model usually only *approximates* the population. Thus, it tests for a *close* rather than *exact* fit.[494] RMSEA values $\leq .05$ and between .05 and .08 are considered to indicate good and acceptable fit, respectively.

Contrary to the first two measures, the SRMR assesses the *badness*-of-fit by calculating the square root of the mean of the standardized squared fitted residuals, i.e. measuring the average difference or deviation of the model-implied covariance matrix

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[489] For details on CFA, cf. Gerbing/Anderson (1988), pp. 186-188; Steenkamp/van Trijp (1991), pp. 286-288; for an overview on the LISREL software package, cf. Jöreskog/Sörbom (1993a); Jöreskog/Sörbom (2001).

[490] For an overview on structural equation modeling (SEM), cf. Bollen (1989); Bollen/Long (1993); Hoyle (1995); Schermelleh-Engel/Keith (1998).

[491] Gerbing/Anderson (1988), p. 189.

[492] Schermelleh-Engel/Moosbrugger/Müller (2003), pp. 31, 51.

[493] Ibid., pp. 31-33.

[494] Browne/Cudeck (1993), p. 146; Schermelleh-Engel/Moosbrugger/Müller (2003), pp. 36-37.

from the empirical one.[495] A SRMR ≤ .05 indicates good fit and values between .05 and .10 indicate acceptable fit.

The last two measures do not assess the model fit in absolute terms but compare the model to some baseline model in terms of how much better it fits the empirical data. In the case of the CFI, the baseline is the so-called *independence model* where all variables are measured without error and are independent from each other, i.e. uncorrelated.[496] A CFI > .95 and > .97 is associated with an acceptable and good fit, respectively. The GFI on the other hand uses the so-called *null model* as baseline, where all parameters are fixed to zero.[497] The thresholds for acceptable and good model fit are .90 and .95, respectively.

Table 10 summarizes the fit measures used in the study and their characteristic threshold values.

| **Measure** | **Details** | **Good fit** | **Acceptable fit** |
|---|---|---|---|
| $X^2$/dF | Ratio of chi-square and degrees of freedom | $0 \leq X^2/dF \leq 2$ | $2 < X^2/dF \leq 3$ |
| RMSEA | Root mean square error or approximation | $0 \leq RMSEA \leq .05$ | $.05 < RMSEA \leq .08$ |
| SRMR | Standardized root mean square residual | $0 \leq SRMR \leq .05$ | $.05 < SRMR \leq .10$ |
| CFI | Comparative fit index | $.97 \leq CFI \leq 1.00$ | $.95 \leq CFI < .97$ |
| GFI | Goodness-of-fit index | $.95 \leq GFI \leq 1.00$ | $.90 \leq GFI < .95$ |

*Table 9: Overview SEM Goodness-of-Fit Measures*[498]

In the confirmatory factor analysis, the measurement model of the study had a ratio of $X^2$/dF of 1.50, a RMSEA of .036, a SRMR of .055, a CFI of .948 and a GFI of .775. With the exception of the GFI, all measures indicate acceptable to good model fits and therefore sufficient uni-dimensionality of the different factors (latent constructs) in the measurement model. The low GFI scores can be neglected as the measure decreases significantly with model complexity and the measurement model with 81 items and 21 latent variables is considerably complex.[499]

Finally, discriminant validity was assessed using the Fornell and Larcker criterion[500], which requires the Average Variance Extracted (AVE) of each construct to exceed the squared correlations between the constructs. The AVEs and squared correlations for all constructs are provided in the Appendix. 14 of the 21 constructs meet the criterion and therefore show satisfactory discriminant validity. For the remaining 7 constructs (SUPPORT, ACHIEVE, INNOVATE, SYMBOL, RATIONAL, TRANSACTIVE,

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[495] Bentler (1995), p. 171; Schermelleh-Engel/Moosbrugger/Müller (2003), pp. 37-38.
[496] Bentler (1990); Schermelleh-Engel/Moosbrugger/Müller (2003), pp. 41-42.
[497] Jöreskog/Sörbom (1993b), p. 123; Schermelleh-Engel/Moosbrugger/Müller (2003), pp. 42-43.
[498] Extract from Schermelleh-Engel/Moosbrugger/Müller (2003), p. 52.
[499] Anderson/Gerbing (1984), p. 171; Schermelleh-Engel/Moosbrugger/Müller (2003), p. 43.
[500] Fornell/Larcker (1981), pp. 41-45.

and GENERATIVE) at least one squared correlation exceeds the AVE, which renders them not discriminant in terms of the Fornell/Larcker criterion.

For the decision on how to deal with these seven constructs in the following, it has to be kept in mind that Fornell/Larcker (1981) introduced the criterion in the context of psychometric scale validation. If the psychometric properties of a scale already have been validated, it needs to be decided whether the proximity or missing selectivity of two constructs can be justified on theoretical terms or whether it reflects a flaw in the operationalization. In the former case, the measurements can be employed despite (formally) not exhibiting discriminant validity. In the latter case, the measurements would have to be rejected or at least handled cautiously. The study only employs previously proven constructs. In addition, in all the problematic cases, the missing disriminant validity can be argued in terms of theoretical proximity. Specifically, SUPPORT for entrepreneurship shares common ground with GENERATIVE strategy-making. Another cluster refers to the three dimensions of the proclivity for entrepreneurship which should theoretically be highly correlated. Lastly, four of the five strategy-making modes appear to form a highly correlated cluster. This also appears plausible as they are complementary organizational capabilities and Hart/Banbury (1994, p. 265) rather differentiate between low and high capability firms across all five dimensions. Therefore, the study will consider all 21 latent constructs for the following structural analysis.

## 3. Results

Table 10 reports the descriptive statistics of the latent variable scores assuming equal weights for all items.

| | | | | | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|
| **Construct** | **Min.** | **Max.** | **Mean** | **Std. dev.** | **Statistic** | **Std. Er.** | **Statistic** | **Std. Er.** |
| EMPHASIS | 1.00 | 7.00 | 4.382 | 1.225 | -.433 | .122 | -.413 | .243 |
| LGO | 1.00 | 7.00 | 4.750 | 1.305 | -.418 | .122 | -.288 | .244 |
| LTO | 0 | 100 | 15.28 | 16.668 | 2.453 | .122 | 7.932 | .243 |
| ORGINNO | 1.67 | 7.00 | 4.813 | 1.191 | -.423 | .121 | -.516 | .242 |
| ORGPRO | 1.33 | 7.00 | 4.423 | 1.076 | -.353 | .121 | -.038 | .242 |
| ORGRISK | 1.00 | 7.00 | 3.753 | 1.137 | .053 | .122 | -.416 | .243 |
| SUPPORT | 1.00 | 6.00 | 3.428 | 1.014 | .254 | .123 | -.487 | .246 |
| AUTONOMY | 1.25 | 7.00 | 4.518 | 1.204 | -.397 | .122 | -.436 | .243 |
| REWARDS | 1.00 | 7.00 | 4.619 | 1.167 | -.510 | .122 | -.138 | .244 |
| TIME | 1.00 | 6.25 | 3.148 | 1.069 | .217 | .121 | -.305 | .242 |
| BOUNDARIES | 1.00 | 6.75 | 4.290 | 1.040 | -.203 | .122 | -.100 | .243 |
| ACHIEVE | 2.25 | 7.00 | 5.551 | .796 | -.594 | .122 | .841 | .244 |
| INNOVATE | 2.00 | 7.00 | 4.904 | .854 | -.304 | .121 | .210 | .242 |
| RISK | 1.00 | 7.00 | 4.419 | 1.008 | -372 | .122 | .080 | .243 |
| EXPLOIT | 2.20 | 7.00 | 5.269 | .765 | -.243 | .122 | .205 | .244 |
| EXPLORE | 2.67 | 7.00 | 5.105 | .810 | -.247 | .122 | .065 | .244 |
| COMMAND | 1.33 | 7.00 | 4.923 | 1.136 | -.449 | .122 | -.100 | .243 |
| SYMBOLIC | 1.00 | 7.00 | 4.558 | 1.208 | -.260 | .121 | -.427 | .242 |
| RATIONAL | 1.40 | 7.00 | 4.731 | 1.130 | -.453 | .122 | -.044 | .244 |
| TRANSACTIVE | 1.75 | 7.00 | 4.352 | 1.113 | .023 | .122 | -.555 | .243 |
| GENERATIVE | 1.00 | 7.00 | 3.806 | 1.064 | .052 | .122 | -.282 | .243 |

*Table 10: Descriptive Statistics*

While the range of responses for each variable covers most of the available scale, there is a clear tendency towards 'the right' in terms of mean scores above 3.5 (the 'natural' mean on the 7-point scale). In line with that, univariate tests of skewness and kurtosis found most of the variables to be (moderately) non-normal.[501] The predominant negative skew indicates an elongated tail at the left and thus the mass of the distribution to be concentrated on the right of the scale. The mostly negative kurtosis on the other hand indicates that the distribution clusters less around the mean (smaller 'peak' and has shorter ('thinner') tails.

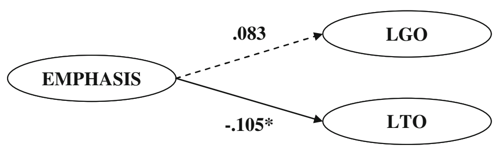
[501] The skewness and kurtosis of normally distributed variables has a value of 0. The common test for non-normality employs the ratios of the fourth order sample moment skewness and kurtosis to its respective standard error. The threshold to reject normality is less than -2 or greater than +2 in both cases.

The correlation coefficients between all latent constructs (calculated under the assumption of equal weights for all items) are provided in the Appendix for reference.

The hypotheses were tested using Structural Equation Modeling (SEM) with LISREL employing conventional maximum likelihood (ML) estimation. Even though maximum likelihood is the most widely used fitting function for SEM, it requires the latent variable scores to have a multivariate normal distribution. Yet, at the same time, most of the data collected in organizational and behavioral research does not even exhibit univariate normal distribution.[502] Accordingly, the univariate tests of skewness and kurtosis reported above found most of the study's variables to be non-normally distributed. Nonetheless, ML has proven to be quite robust against moderate violations of the normality assumption.[503] West/Finch/Curran (1995, p. 74) still recommend the use of normal theory ML if skewness does not exceed a value of 2 and kurtosis is less than 7. With the exception of long-term time orientation (LTO), which scores slightly above the threshold, all variables appear to be only moderately non-normally distributed, allowing for the application of ML fitting.

### *3.1. Dysfunctional Effect of RAPM*

Figure 11 presents the structural model for hypothesis $H_1$, which hypothesizes a negative impact of the emphasis on short-term APM (EMPHASIS) and on managerial long-term growth orientation (LGO). As second dependent, the model also includes the much-cited[504] long-term time orientation (LTO) construct for reference purposes.




*** p < .001 ** p < .01 * p < .05 § p < .1 (two-tailed)

*Figure 11: Structural Model Dysfunctional Effect of RAPM*

For the structural model, LISREL reports a $X^2$/dF of 1.82, a RMSEA of .046, a SRMR of .043, a CFI of .989, and a GFI of .970 indicating a good fit to the empirical data.

Based on the results, $H_1$ has to be rejected. The path coefficient from EMPHASIS to LGO is not significantly negative but even slightly positive (.083 with t = 1.474, p > .05) which would indicate a *functional* rather than *dysfunctional* effect. A strong

[502] Curran/West/Finch (1996), p. 17; Schermelleh-Engel/Moosbrugger/Müller (2003), p. 26.
[503] West/Finch/Curran (1995), p. 74; Curran/West/Finch (1996), pp. 25-26; Boomsma/Hoogland (2001), pp. 165-166; Schermelleh-Engel/Moosbrugger/Müller (2003), p. 26.
[504] See Section C2.3.

(perceived) emphasis on short-term targets does not appear to translate into managers' neglect of long-term growth targets.

The data nonetheless suggests a dysfunctional effect of EMPHASIS on LTO with a (barely) significant negative path (-.105 with $t = 1.986$, $p < .05$). Managers who are subject to tight budgetary control tend to spend comparably more time on issues which will be relevant (i.e., affect the budget or profit and loss statement) in the short- and medium-term and less on long-term issues.

### *3.2. Impact of Corporate Entrepreneurship*

The following section will report on the impact of corporate entrepreneurship in three steps. The first step is the consideration of the impact of organizational Entrepreneurial Orientation (EO) on long-term growth orientation (LGO) (Section F3.2.1). The second step, with the inclusion of one more level in the hierarchical structural model, is the report on the impact of the entrepreneurial environment on EO (directly) and on LGO (indirectly) (Section F3.2.2). And the last step is the coverage of the impact of the manager's individual proclivity for entrepreneurship on long-term growth orientation (Section F3.2.3).

#### *3.2.1. Impact of Entrepreneurial Orientation on LGO*

In terms of the hypothesized positive impact of organizational Entrepreneurial Orientation on the manager's individual long-term growth orientation (LGO) ($H_{2.1}$), Figure 12 reports the results of the structural equation model reflecting the underlying three sub-hypotheses that propose a positive impact of organizational innovativeness (INNOVATE/$H_{2.1a)}$), proactiveness (ORGPRO/$H_{2.1b)}$) and risk-taking (ORG-RISK/$H_{2.1c)}$).

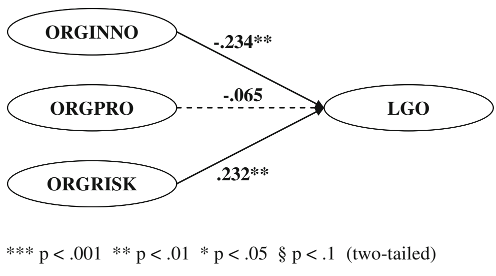
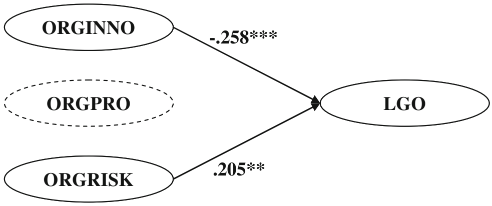



*Figure 12: Structural Model EO on LGO*

The results suggest a highly significant negative impact of ORGINNO on LGO and a highly significant positive impact of ORGRISK. Yet, the model does not exhibit an acceptable fit across all fit measures with X²/dF of 3.97, a RMSEA of .872, a SRMR of .065, a CFI of .926, and a GFI of .925. Especially the X²/dF and the RMSEA indicate a poor fit to the empirical data. The analysis of the modification indices in

LISREL suggests that the measurement model of ORGPRO is the main source of model misfit. Accordingly, an alternative model is tested eliminating ORGPRO from the structural equations.

Figure 13 presents the resulting alternative model. It now exhibits a good model for with $X^2$/dF of 1.82, a RMSEA of .457, a SRMR of .044, a CFI of .983, and a GFI of .976.



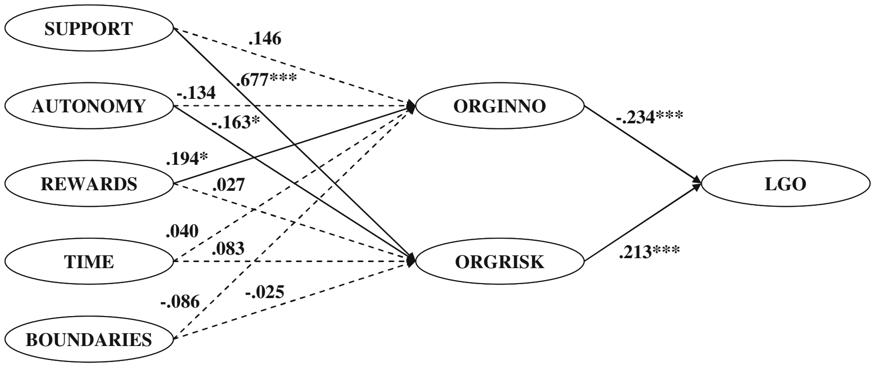

*** p < .001 ** p < .01 * p < .05 § p < .1 (two-tailed)

*Figure 13: Structural Model EO on LGO (modified)*

Based on the model, $H_{2.1a)}$ has to be rejected. Contrary to the hypothesized positive impact of ORGINNO on LGO, the model yields a strong and highly significant negative path (-.258 with t = -3.778, p < .001). The stronger a middle manager perceives his unit's innovativeness, the less he is concerned with long-term growth targets. On the other hand, $H_{2.1c)}$ is confirmed because ORGRISK does have a significant positive impact on LGO (.205 with t = 2.991, p < .01). Managers in units with a comparably high (perceived) level of risk-taking also inhibit a strong long-term growth orientation. Lastly, $H_{2.1b)}$ cannot be confirmed as ORGPRO was eliminated due to bad fit of the measurement model. Even though the negative path coefficient in the initial model indicates a dysfunctional rather than the proposed functional relationship, no final evaluation can be made.

### *3.2.2. Impact of the Entrepreneurial Environment*

The next model expands the previous one by one hierarchical level to include the five dimensions of the organizational entrepreneurial environment with a proposed positive impact on organizational Entrepreneurial Orientation ($H_{2.2a)-e)}$). Figure 14 shows the resulting structural model with each environmental factor separately affecting ORGINNO and ORGRISK as remaining distinctive dimensions of Entrepreneurial Orientation.




*** p < .001  ** p < .01  * p < .05  § p < .1  (two-tailed)

*Figure 14: Structural Model Entrepreneurial Environment on EO*

LISREL reports an acceptable model fit with $X^2$/dF of 2.00, a RMSEA of .051, a SRMR of .071, a CFI of .946, and a GFI of .876.

Structurally, it has to be concluded that neither time availability (TIME) nor organizational boundaries (BOUNDARIES) seem to affect organizational Entrepreneurial Orientation. Consequently, $H_{2.2d)}$ and $H_{2.2e)}$ have to be rejected.

Management support (SUPPORT) exhibits a positive, yet not significant impact on ORGINNO (.146 with t = 1.619, p > .05) and an extremely strong, highly significant positive impact on ORGRISK (.667 with t = 6.527, p < .001). Thus, hypothesis $H_{2.2a)}$ can be confirmed with limitations. The encouragement, promotion, and facilitation of entrepreneurial activities by the top management appear to spur both innovativeness and risk-taking of the business unit. Nevertheless, it should be kept in mind that the resulting indirect effect on LGO is positive via the mediator ORGRISK but negative via the mediator ORGINNO. Considering the path coefficients and t-values, the positive impact via ORGRISK dominates.

Contrary to hypothesis $H_{2.2b)}$, work discretion/autonomy (AUTONOMY) exhibits a negative impact on the EO dimensions ORGINNO (-.134 with t = -1.508, p > .05) and ORGRISK (-.163 with t = -2.011, p < .05) even though only the path towards ORGRISK is significant. Consequently, the hypothesis has to be rejected based on the empirical evidence. Within the sample, additional leeway in terms of discretionary decision-making appears to lead to lower levels of innovativeness and risk-taking.

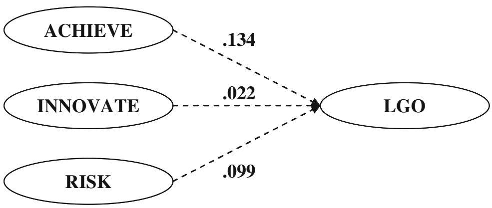
The level of rewards/reinforcements (REWARDS) only seems to positively affect ORGINNO (.194 with t = 2.225, p < .05) whereas the impact on ORGRISK is negligible (.027 with t = .357, p > .05). $H_{2.2c)}$ can therefore only be confirmed in parts. A strong and effective results-based rewards system appears to only spur innovativeness but not risk-taking. Again, it needs to be acknowledged that the positive direct impact on ORGINNO translates into a negative indirect impact on LGO.

A further modification of the model eliminating TIME and BOUNDARIES rendered comparable results with a slightly improved (good) model fit ($X^2$/dF of 1.73, a RMSEA of .043, a SRMR of .056, a CFI of .974 and a GFI of .916). The only difference to the previous model is that the negative path from AUTONOMY to ORGRISK is no longer significant.

### *3.2.3. Impact of the Individual Proclivity for Entrepreneurship*

The impact of the managers' psychological predispositions is examined on two levels. First, the study explores whether the individual traits of a (corporate) entrepreneur as an achieving, innovative, and risk-taking individual have an effect on his long-term growth orientation. Second, the study further differentiates the preference for innovation along March's notion of exploitation vs. exploration.

Figure 15 reports the structural model analyzing the impact of entrepreneurial traits on LGO. Despite the good model fit ($X^2$/dF of 1.83, a RMSEA of .046, a SRMR of .043, a CFI of .966, and a GFI of .950), none of the relationships were significant at the 5% level and hypothesis $H_{2.3}$ can therefore not be confirmed.

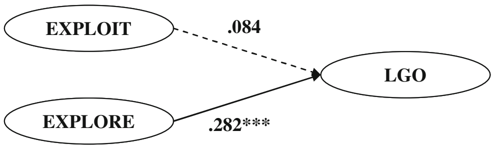



*** p < .001 ** p < .01 * p < .05 § p < .1 (two-tailed)

*Figure 15: Structural Model Traits on LGO*

In detail, a manager's achievement orientation (ACHIEVE) positively affects his LGO (.134 with t = 1.391, p > 5%) in line with $H_{2.3a)}$ but the relationship misses significance. A similar picture can be drawn for the impact of his risk-propensity (RISK/$H_{2.3c)}$) which also slightly, yet not significantly, appears to enhance individual-level LGO (.099 with t = 1.060, p > 5%). In contrast, the managers' preference for innovation (INNOVATE) does not exhibit any of the proposed positive effect for LGO (.022 with t = .219, p > 5%). Hypothesis $H_{2.3b)}$ has to be rejected – at least with respect to the aggregate measure of individual level innovativeness and creativity.

If the individual preference is differentiated for innovation with respect to exploitation (EXPLOIT) and exploration (EXPLORE), the picture changes as indicated in Figure 16.




*** p < .001 ** p < .01 * p < .05 § p < .1 (two-tailed)

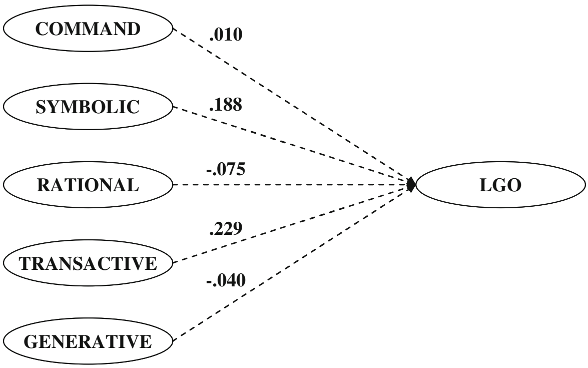
*Figure 16: Structural Model EXPLOIT vs. EXPLORE*

The simple 3-construct model exhibits acceptable to good model fit with $X^2/dF$ of 2.03, a RMSEA of .051, a SRMR of .059, a CFI of .946, and a GFI of .948.

Both aspects show a much stronger effect on LGO than the aggregate INNOVATE. When the results are interpreted it needs to be kept in mind, though, that the INNOVATE scale originates from a (general) personality assessment instrument while EXPLOIT and EXPLORE have been developed to specifically measure different innovation approaches in a business setting. Therefore, one would expect generally a stronger correlation with the (also) business-related LGO scale. Nevertheless, the results show that a manager's preference for exploratory innovation has a much stronger effect on his LGO than his preference for exploitation and, thus, confirm hypothesis H2.4. While the effect of EXPLORE is strong and highly significant (.282 with $t = 3.453$, $p <.001$), the effect of EXPLOIT is low and far from significant (.084 with $t = 1.092$, $p > .05$). In other words, managers striving for exploratory rather than exploitative innovation appear to also exhibit stronger concerns for long-term growth.

### *3.3. Impact of Strategy-Making*

Figure 17 reports the structural model testing, the proposed relationships of Hart's strategy-making modes and long-term growth orientation (LGO) (Hypotheses $H_{2.5a)-e)}$). The model exhibits acceptable fit to the empirical data with X²/dF of 2.76, a RMSEA of .067, a SRMR of .062, a CFI of .963, and a GFI of .894 but renders no significant relationships (at the 5% level).




*** p < .001 ** p < .01 * p < .05 § p < .1 (two-tailed)

*Figure 17: Structural Model Strategy-Making Modes on LGO*

In an attempt to improve the model fit, COMMAND and GENERATIVE are eliminated from the model based on the following reasoning: The current model indicates virtually no impact of the command and generative modes (.010 with t = .090, p > 5% and -.040 with t = -.287, p > 5%, respectively) and these extreme modes have only been included for reference purposes (see Section E3.4.3). In addition, the modification indices in LISREL also indicate potential collinearity issues in the measurement model especially for these two constructs also suggesting their removal from the model. Unfortunately, the remaining modified 4-construct model does not exhibit a better goodness of fit with X²/dF of 2.98, a RMSEA of .072, a SRMR of .049, a CFI of .968, and a GFI of .921 and also does not yield significant paths. Therefore, the study only reports and interprets the initial 6-construct model with a better model fit in terms of X²/dF and RMSEA.[505]

Due to the missing statistical significance, none of the hypotheses tested with the model can be confirmed. The model shows no impact at all of the extreme modes ($H_{2.5a)+e)}$), i.e., neither a dominant top-down provision of strategy nor the excessive

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[505] The better fit scores for the SRMR, the CFI, and the GFI are partly due to the reduced complexity moving from a 6- to a 4-construct model and are therefore not taken into account.

reliance on grass-roots initiatives appears to translate into increased levels of managerial long-term orientation. But, it is possible to report preliminary findings in support of the hypothesized impact of the hybrid modes (SYMBOL, RATIONAL, and TRANSACTIVE). In line with $H_{2.5b)}$, the (perceived) extent of symbolic strategy-making appears to have a relatively strong (yet not significant) positive impact on a manager's LGO (.188 with t = 1.052, p > 5%). Similarly, there is weak evidence in support of $H_{2.5c)}$ with an (insignificant) negative path from RATIONAL to LGO (-.075 with t = -.477, p > 5%) and for $H_{2.5d)}$ with an (insignificant) positive path from TRANSACTIVE to LGO (.229 with t = 1.221, p > 5%). In other words, basing a strategy on a strong and compelling vision and mission as well as executing strategy-making as an iterative, participative process is likely to foster managerial long-term orientation. On the contrary, a strong reliance on formalized planning procedures and processes will most likely decrease the manager's concern with long-term growth.

### *3.4. Relative Impact of RAPM and the Other Relevant Factors*

After assessing the impact of RAPM, corporate entrepreneurship, and strategy-making on managerial long-term orientation individually, the study finally wants to compare the *relative* impact of these drivers in order to decide on the relative importance of RAPM with respect to the other relevant organizational factors.

For this purpose, the structural models, as described above, analyzing the impact of a single organizational factor on managers' long-term growth orientation will be combined into one model. It will simultaneously determine the relative impact of each factor taken into account possible interdependencies or collinearities with the other factors. The different path coefficients of the model will allow to draw conclusions on the relative importance of each factor. In order to limit model complexity, the aggregate model will only comprise those constructs from the organizational context that have shown a significant impact on long-term growth orientation in the previous models. In terms of corporate entrepreneurship it will include organizational innovativeness and risk-taking (ORGINNO/ORGRISK) as those aspects of organizational Entrepreneurial Orientation significantly influence long-term growth orientation. In addition, the impact of the managers' preference for exploratory innovation (EXPLORE) will be analyzed as only element of individual entrepreneurial predisposition with a significant impact on LGO. In terms of strategy-making, the model will include the extent of transactive strategy-making (TRANSACTIVE) as strongest driver of long-term growth orientation despite the missing significance.[506]

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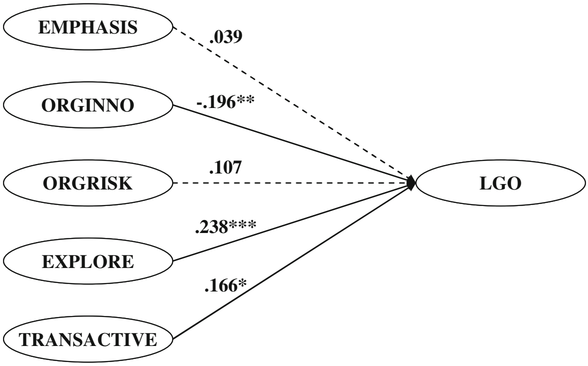
[506] The comparably high path coefficients of SYMBOL and TRANSACTIVE indicate a substantial influence which most likely did not materialize as significant relationships because of the proximity of the different modes in terms of organizational capabilities (both theoretically as well as measurement wise (moderate collinearity indicated by LISREL modification indices). In other

The resulting structural model is shown in Figure 18. It exhibits a good overall fit to the empirical data with X²/dF of 1.56, a RMSEA of .038, a SRMR of .050, a CFI of .968, and a GFI of .923.




*** $p < .001$ ** $p < .01$ * $p < .05$ § $p < .1$ (two-tailed)

*Figure 18: Relative Impact on LGO*

In line with the partial models tested above, the *emphasis on short-term budgetary targets* (EMPHASIS) has the smallest impact on LGO, both in relative and absolute terms, and again there is no indication of any significant dysfunctionality (.039 with $t = .715$, $p > 5\%$).

All other factors score substantially higher and three out of four factors exhibit significant relationships. The *preference for exploratory innovation* (EXPLORE) has the strongest and highly significant effect on LGO (.238 with $t = 3.358$, $p < 0.001$). This strong relationship was to be expected as these two constructs – unlike the other four – measure individual preferences and pertain to the closely related topics of long-term growth and exploratory innovation.

Nonetheless, also the organizational context factors besides EMPHASIS show a relatively strong effect on LGO which could not have been expected considering the prominent positioning of the dysfunctional effect of RAPM/EMPHASIS on managerial long-term orientation. The level of *organizational innovativeness* (ORGINNO) – still counter-intuitively – has a strong and highly significant negative, i.e. dysfunctional effect on managerial LGO (-.196 with $t = -2.976$, $p < .01$). The extent of *transactive strategy-making* (TRANSACTIVE) now shows a significant effect on LGO (.166 with $t = 2.336$, $p < .05$) which supports the argument above that

words, strategy-making probably did not show a significant effect because too many highly correlated aspects were measured simultaneously rendering none of them significant.

the insignificance of SYMBOLIC and TRANSACTIVE was due to these constructs measuring closely related and highly correlated organizational capabilities. Lastly, *organizational risk-taking* (ORGRISK) still has a positive effect but the path is no longer significant (.107 with t = 1.463, p > 5%). This is apparently due to an interdependency and partial collinearity with the TRANSACTIVE construct. In fact, both are highly correlated (correlation coefficient of .395 with estimated factor loadings from LISREL) and are also indirectly linked via high correlations to the entrepreneurial environment and especially to management support (SUPPORT) (see correlation table in the Appendix). An integrative, participative strategy-making approach appears to be associated with a strong risk-taking propensity of the leadership and vice versa.

The finding underlines the importance of integrating the partial models to avoid over-interpretation of individual, isolated correlations, or path coefficients. In sum, it can be concluded that certain dimensions of corporate entrepreneurship (especially ORGINNO and with limitation ORGRISK) and properties of the strategy-making process (TRANSACTIVE) have a much stronger impact on LGO than RAPM in terms of the EMPHASIS construct. The results, thus, at least partially support $H_{3.1}$ and $H_{3.2}$ which propose that entrepreneurial orientation and the strategy-making modes, respectively, would have an equal or stronger impact on LGO than EMPHASIS.

In addition to modeling the direct effects of EMPHASIS and the relevant organizational factors on LGO, the study also explored potential moderating effects of the other relevant factors on the alleged dysfunctional effect of EMPHASIS on LGO. A strong moderating effect could partially reconcile the observed absence of such a dysfunctionality with the widely held common belief in its existence. The study employed the Moderated Regression Analysis (MRA) method[507] to test for moderating effects. The Moderated Regression Analysis is a multiple linear regression method, which includes as 'interaction term' the product of the independent variable (in this case EMPHASIS) and the potential moderator (in this case the other relevant factor). The product term represents the *moderating effect* in addition to the *main effects* of the independent variables. The regression equation has the format

$$LGO = \beta_0 + \beta_1 \text{ EMPHASIS} + \beta_2 \text{ [factor]} + \beta_3 \text{ EMPHASIS x [factor]} + \varepsilon.$$

A significant interaction effect exists if the interaction regression coefficient $\beta_3$ is significant. In this case, the null hypothesis $H_0$ assuming no interaction between EMPHASIS and the other relevant factor has to be rejected indicating a moderating effect of the other factor on the relationship of EMPHASIS on LGO.[508]

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507 Hartmann/Moers (1999), pp. 293-295; Bisbe/Otley (2004), pp. 721-725.

508 The MRA itself is symmetrical. Which of the two independents is the moderator has to be specified based on theory; cf. Hartmann/Moers (2003), p. 805.

The study tested for moderation of ORGINNO, ORGRISK, and TRANSACTIVE as most influential organizational factors and for moderation of EXPLORE which proved to be the only significant aspect of entrepreneurial predisposition. All variables were standardized prior to the procedure.[509] The results of the linear regression models obtained with SPSS are shown in Table 11.

| **Model (dependent variable: LGO)** | **Coeff.** | **Value** | **Std. Er.** | **t-value** | **Sig.** |
|---|---|---|---|---|---|
| Constant | $\beta_0$ | .013 | .049 | .267 | .789 |
| EMPHASIS | $\beta_1$ | -.179 | .049 | -3.659 | .000 |
| ORGINNO | $\beta_2$ | .111 | .049 | 2.256 | .025 |
| **Interaction term (EMPHASIS x ORGINNO)** | $\boldsymbol{\beta_3}$ | **.008** | **.044** | **.177** | **.860** |
| $R^2$=.045; Adj. $R^2$ = .037; F = 5.971; Sig. = .001 | | | | | |
| Constant | $\beta_0$ | .019 | .050 | .383 | .702 |
| EMPHASIS | $\beta_1$ | .099 | .050 | 1.971 | .049 |
| ORGRISK | $\beta_2$ | .084 | .050 | 1.672 | .095 |
| **Interaction term (EMPHASIS x ORGRISK)** | $\boldsymbol{\beta_3}$ | **.016** | **.050** | **.315** | **.753** |
| $R^2$=.018; Adj. $R^2$ = .010; F = 2.298; Sig. = .077 | | | | | |
| Constant | $\beta_0$ | .003 | .048 | .065 | .948 |
| EMPHASIS | $\beta_1$ | .093 | .048 | 1.927 | .055 |
| TRANSACTIVE | $\beta_2$ | .239 | .048 | 4.940 | .000 |
| **Interaction term (EMPHASIS x TRANSACTIVE)** | $\boldsymbol{\beta_3}$ | **.105** | **.044** | **2.387** | **.017** |
| $R^2$=.088; Adj. $R^2$ = .081; F = 12.297; Sig. = .000 | | | | | |
| Constant | $\beta_0$ | .018 | .049 | .365 | .715 |
| EMPHASIS | $\beta_1$ | .097 | .049 | 1.968 | .050 |
| EXPLORE | $\beta_2$ | .207 | .049 | 4.216 | .000 |
| **Interaction term (EMPHASIS x EXPLORE)** | $\boldsymbol{\beta_3}$ | **.040** | **.052** | **.773** | **.440** |
| $R^2$=.060; Adj. $R^2$ = .052; F = 8.006; Sig. = .000 | | | | | |

*Table 11: Results Moderated Regression Analysis*

The interaction coefficient $\beta_3$ is insignificant for ORGINNO, ORGRISK as well as for EXPLORE ($p > .05$). This indicates the absence of interaction between EMPHASIS and the respective factor and therefore the absence of the proposed moderating effect of the factor on the relationship of EMPHASIS on LGO.

On the contrary, $\beta_3$ is significant for TRANSACTIVE at the 5% level ($t = 2.387$). With the inclusion of the interaction term, the explanatory power of the model increases from .070 to .081 (in terms of the adjusted $R^2$). This indicates interaction between TRANSACTIVE and EMPHASIS with respect to the influence of LGO and supports the proposition of a moderating effect of TRANSACTIVE on the relationship of EMPHASIS on LGO. The interaction coefficient in this case is positive and it can be

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509 Hartmann/Moers (1999), p. 300; Bisbe/Otley (2004), p. 724.

concluded that the slope of the line representing the relationship of EMPHASIS and LGO is significantly steeper in situations with strong transactive strategy-making. In other words, *transactive* strategy-making appears to render EMPHASIS more functional (or less dysfunctional) with respect to individual level LGO. Despite the statistical significance, one needs to bear in mind that the additional explanatory power of the interaction terms is limited (1.1%) and that therefore the impact of the moderation in absolute terms should not be overrated.

Finally, to test the robustness of the results and to control for the potential impact of industry, competitive position, and market dynamics, sub-samples of managers along the three industries included in the survey were analyzed and compared with respect to the resulting correlations matrices. None of the sub-samples exhibited statistically significant deviant results. In particular, no statistically significant dysfunctional effects of EMPHASIS on LGO were observed across the sub-samples. With respect to the other significant relationships identified above, their strength varied across industries indicating some dependency on the external context. Yet, there was also no evidence for significant opposing effects supporting the general direction of the effect across the researched organization. Similarly, splitting the sample by management level (level 2 vs. level 3) did not render dissenting results. Both the lack of a dysfunctional effect of EMPHASIS on LGO as well as the other relationships were confirmed within each management level. Both findings lower the concerns of a potential sample-related selection bias and increase the confidence in the robustness of the results.

# G Discussion and Outlook

## 1. Theoretical Implications

This chapter summarizes the study's theoretical implications and main contributions to management accounting research. The first two sections deal with the contribution to the core RAPM research stream concerning the alleged dysfunctional effect on managerial long-term orientation addressed by the first research question (Section G1.1) and the interplay of RAPM and the other relevant factors of the organizational context as subject of research questions two and three (Section G1.2). They are followed by a critical review of the contribution of a 'Structurationist' research approach, i.e. research informed by Structuration Theory, in management accounting (Section G1.3). The last section positions the study findings in the broader research field dealing with the relationship and interplay of management accounting and strategic behavior (Section G1.4).

### *1.1. On the Dysfunctional Effect of RAPM*

In line with the first (confirmatory) research question, the study intends to determine whether the reliance on accounting performance measures (RAPM) or, more specifically, the emphasis on short-term budgetary targets has a dysfunctional effect on middle managers' long-term growth orientation. It thereby contributes to the broader issue of a potential dysfunctionality of RAPM on managerial long-term orientation in general. Even though the dysfunctionality appears to be a commonly held wisdom in management accounting research, Van der Stede (2001) identifies a research gap as he claims literature to be inconclusive on this issue, especially because the anecdotal evidence in support of the dysfunctionality could not be substantiated with quantitative empirical proof.

If the common belief about the dysfunctionality of RAPM on managerial long-term orientation in general and their long-term *growth* orientation in particular reflects an actual organizational phenomenon, one would expect to find strong and convincing quantitative confirmation in the chosen study setup based on the following rationale:

The present case study qualifies as a so-called 'crucial case' where the dysfunctional effect indeed appears most-likely (see Section E3.2). The existing management accounting practices are characterized by a strong emphasis on short-term budgetary targets, thus a strong RAPM. A recent corporate transformation program has complemented the traditional engineering mindset with a dominant cost and profit concern, which relates to a time horizon of one to three years. Performance within this time frame – mostly measured in accounting terms – is the dominant determinant of middle managers' (variable) compensation and their promotion trajectory. In addition, the organization's middle management appears to exhibit myopic behavior in terms of neglecting or at least undervaluing the long-term (growth) perspective (year 4 to year

8). The interviews even provided strong anecdotal evidence directly linking the short-term focus of the management accounting system to insufficient levels of managerial long-term growth orientation highly suggestive of a dominant dysfunctional relationship.

Yet, even the focused most-likely research setup did not yield any convincing dysfunctional effects. In fact, the emphasis on short-term budgetary targets – if at all – appears to have a slightly *functional* rather than *dysfunctional* effect on the long-term growth orientation of middle managers. A higher (perceived) emphasis of these targets is associated with a (slightly) higher long-term growth orientation. Instead of a trade-off between short- and long-term targets there rather appears to be a general goal orientation comprising both short- and long-term concerns.

When assessing the relevance of the above findings, one needs to consider that the study's survey design introduces several methodological improvements with respect to previous RAPM studies which should have ensured the detection of significant dysfunctional relationships – if there are any (see also Section D1.4). Conceptually, the study does not employ a broad all-inclusive concept of RAPM but pinpoints the time frame aspect of emphasizing *short-term* budgetary goals. Similarly, it does not adopt the problematic managerial time orientation (MTO) concept to capture long-term orientation but specifically focuses on the pivotal aspect of managerial long-term growth orientation as the opposite to short-term concerns for cost and profitability issues. In terms of the measurement, the study only employs valid and reliable instruments that have been successfully applied in previous studies. Lastly, the large sample size translates into comparatively low hurdles for statistically significant effects.

In terms of the role-theoretical foundation of RAPM (see also Section C2.4.2), there seems to be no substantial intra-sender role conflict with respect to the balancing of short-term financial performance on the one and long-term growth and survival on the other side. The opposing demands of short-term competence deploying roles and long-term competence defining roles do not appear to translate into a latent conflict of interest in the day-to-day work of middle managers. One viable explanation for the finding could be that (middle) managers succeed in separating both roles *temporarily* – instead of trying to master them *simultaneously*. Along this stream of reasoning, also suggested by Van der Stede (2000, p. 620), managers mostly focus on their short-term targets but "not at the exclusion of the occasional, but strategically important, concern with the long-term." This means, that for example during strategy sessions, they switch from their competence deploying role to their competence defining role temporarily, thereby suspending all short-term concerns and, thus, avoiding the entanglement of short- and long-term considerations.

For the evaluation of the relevance of these findings, i.e. the absence of a dysfunctional effect of RAPM on managerial long-term growth orientation, it should be taken into account that the study was able to detect strong and highly significant dysfunctional relationships like the impact of organizational innovativeness on long-term growth orientation and that the impact of RAPM was also small in relative terms considering the other organizational factors under scrutiny. Consequently, it seems unlikely that the study simple did not pick up on the dysfunctional relationships due to methodological shortcomings with respect to the measurement of the latent constructs. Additionally, the study successfully replicated the findings of Merchant (1990) and Van der Stede (2000) in terms of the small and barely significant negative effect of RAPM on managerial time orientation (MTO) which also reduces concerns about systematic flaws in the survey design, data collection, or analysis.

If the crucial case argument of Keating (1995) and Lukka (2005) were to be followed, the study results would seriously question the theoretical proposition of a dysfunctional effect of RAPM on middle managers' long-term growth orientation. If even the particular most-likely setup does not render a significant dysfunctional relationship, it probably does not represent a universal and thus generalizable organizational phenomenon.

Put in conjunction with the previous unsuccessful attempts by Otley (1978), Merchant (1990), and Van der Stede (2000) to substantiate the dysfunctional effect of RAPM on managerial long-term orientation *in total*, the study results also cast serious doubts on the general common belief. The study suggests that the allegation could be a premature generalization of (potentially) problematic anecdotal evidence. Despite certainly having the "appeal of simplicity"[510], it only seems to reflect a widely held belief mostly based on perception and individual social judgments like those presented by individual senior managers during the interview phase. This echoes the earlier criticism by Merchant (1990, p. 297) that the common belief lacks a solid research foundation as well as the observation by Van der Stede (2001, p. 129) that the research issue has not been resolved, yet. Consequently, management accounting research as well as the general management literature should not be based on the *implicit* assumption of the dysfunctional effect but should continue to question any such generalizations. While RAPM might induce tactical gaming behavior or even data manipulation, it might just not to a comparable extent cause management myopia.

### *1.2. On the Other Relevant Organizational Factors*

The (exploratory) research questions two and three are concerned with 'other relevant organizational factors' impacting long-term growth orientation and their relative importance with respect to RAPM. Based on this inquiry, the study intends to decide

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510 Merchant/Bruns (1986), p. 56.

whether RAPM is *a* or even *the* differentiating practice impacting managerial long-term growth orientation or whether there are other much stronger factors determining managers' attitude towards long-term growth.

In a first step, the study explored the relevant (internal) organizational context for additional factors with an impact on managerial long-term growth orientation and identified two aspects besides RAPM with a potentially decisive effect: The level of corporate entrepreneurship (CE) and the properties of the strategy-making process.

In a second step, the study also validated the relevance of these two factors in the context of the particular case. Selected aspects from the domains of corporate entrepreneurship and strategy-making proved to have a comparably strong and significant impact on individual level long-term growth orientation of the middle management. Their impact, in fact, exhibits more explanatory power for the dependent variables and dominates any functional or dysfunctional effect that RAPM or more specifically the emphasis on short-term budgetary targets exerts.

These observations hold two theoretical implications: First, it supports the study's general notion that managerial long-term growth orientation is also strongly influenced by other factors besides the properties of the management control system. The finding supports the argument by Boland (1993) that organizational actors generally draw upon a number of rules, resources, and practices in a Giddensian sense, that management accounting is only one of them and that it should also be treated accordingly as just one of many potentially important factors by management accounting researchers.

Second, the argument can even be taken one step further insofar as the study appears to provide early evidence that RAPM might just not be a differentiating practice in the case of the encouragement of managerial long-term growth orientation. This would render this aspect of RAPM irrelevant for future research. Even though the limitations of the n=1 case study design, which do not allow for an extension of the relevance of the selected CE and strategy-making aspects beyond the researched organization, need to be acknowledged, the results still suggest that these or similar internal contextual factors could also dominate the impact of RAPM in other organizations. The interpretation would also fit in with the above argument that questions the existence of a dysfunctional effect of RAPM on long-term orientation.

Independent of whether the second implication also holds in a cross-sectional study setting, the findings clearly call for a broader research approach to the study of the RAPM phenomenon and its behavioral and organizational consequences. The call echoes the earlier claim by Scapens/Macintosh (1996, p. 677) to extent the study of accounting practices to include wider organizational structures and their relationship with accounting in practice. In addition to the incorporation of primarily *external* contingency factors, RAPM studies should therefore increasingly take into account all relevant *internal* contextual factors and their links to accounting to finally evaluate the absolute and relative impact of RAPM in practice.

In addition to these general observations on the respective importance of RAPM and other organizational factors, the study also analytically decomposes the multifaceted concepts of corporate entrepreneurship and strategy-making in order to identify which sub-dimensions are decisive with respect to encouraging or discouraging long-term growth orientation. While the impact profile of the specific sub-dimensions will be discussed against the background of the case study in the next chapter concerning the managerial implications, there are nonetheless some overarching theoretical conclusions, which can be drawn and extended beyond the researched organization.

With respect to capturing an organization's corporate entrepreneurship and its impact on long-term growth orientation it proves useful to differentiate the Entrepreneurial Organization (EO) as collective behavioral phenomenon, the entrepreneurial environment as underlying contextual factor, and the individual entrepreneurial predisposition of the managers to pinpoint those aspects of the broad CE domain which eventually explain most of the impact of corporate entrepreneurship on individual long-term growth orientation (see also Section E3.3.1). In fact, not only did the impact of these different aspects differ greatly (e.g., the impact of organizational EO dominating entrepreneurial predispositions), but also did the impact of individual sub-dimensions vary substantially (e.g., *management support* versus *time availability* as contextual factor). A more aggregate view on the corporate entrepreneurship phenomenon would not have brought these subtle differences to the surface and would most likely not have rendered comparably valuable insights.

Particularly with respect to organizational Entrepreneurial Orientation, the study results underline the need to treat the three sub-dimensions as separate and somewhat independent aspects of EO (see also Section F2.1) and not collectively as measurement items of a formative, higher order construct Entrepreneurial Orientation which provides one aggregated measure of organizational entrepreneurial behavior as initially proposed by Covin/Slevin (1989). Actually, the two sub-dimensions innovativeness and risk-taking not only exhibit a different effect size but even prove to have a contrary impact on long-term growth orientation which forbids any aggregation of their scores.

Similarly, the impact of environmental sub-dimensions varies greatly and renders only two of them, namely the support by the top management and the effectiveness of the rewards system, as significant drivers of the organization's Entrepreneurial Orientation. Again it seems plausible that the relevance of individual factors will differ by organization and also by the particular aspect of corporate entrepreneurhsip under scrutiny. Nevertheless, the results call for a fine-grained study of the entrepreneurial environment along the lines of the employed 5-factor CEAI [511] instrument by Hornsby/Kuratko/Zahra (2002) in order to extract the relevant dimensions. A more aggregated approach is unlikely to yield meaningful results.

The study also contrasts structural/contextual and individual/dispositional antecedents as proposed by House/Shane/Herold (1996, p. 218) and Lumpkin/Erdogan (2004, p. 22) to determine to what extent personality characteristics determine individual and organizational entrepreneurial behavior. The results suggest that organization-level aspects of corporate entrepreneurship probably[512] dominate individual level predispositions with respect to the encouragement of long-term growth orientation as one characteristic of an entrepreneurial posture of middle managers. While selected aspects of the Entrepreneurial Orientation scale impact long-term growth orientation directly and properties of the entrepreneurial environment show an indirect effect via Entrepreneurial Orientation, none of the personality traits usually associated with entrepreneurial predisposition appears to affect a manager's concerns for long-term growth issues.

Lastly, the study adds more depth to the discussion as to whether and how the individual preference for innovation is a predictor of an entrepreneurial posture, or in this case, more specifically, a predictor of long-term growth orientation as a central aspect of this posture. The results indicate that – at least in the particular organizational context of an engineering-driven manufacturing company – it is essential to apply March's (1991) differentiation between exploitative and exploratory innovation because only at this level of detail significant relationships to long-term growth orientation can be observed. In fact, the preference for exploratory innovation dominates its exploitative counterpart in explaining the dependent and therefore appears to be the differentiating factor with respect to long-term growth orientation. In other words, innovativeness and creativity in terms of (just) incremental, continuous improvement will not necessarily, or at least not to the same extent, translate into an individual's concern for long-term growth.

With respect to capturing the properties of an organization's strategy-making practices and analyzing their impact on managerial long-term growth orientation, the five factor framework by Hart (1992) and its operationalization by Hart/Banbury (1994) proved helpful with limitations. While the approach shed some light on the relationship of organizational-level strategy-making and individual-level long-term growth orientation, it nonetheless only renders initial, at best circumstantial evidence as the measurement instruments lack sufficient selectivity of its factors leading to comparably strong but insignificant paths in the structural model.

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[511] Corporate Entrepreneurship Assessment Instrument.

[512] The limitations of the n=1 case study setup render these conclusions *beyond* the researched organization (well-founded) theoretical propositions rather than empirical findings.

On the one hand, the differentiation of the five strategy-making modes yields some insights about how different forms or 'modes' of strategy-making have a different impact on the level of long-term growth orientation. These observations are largely in line with the propositions by Hart (1992, pp. 340-341) about the impact of the five modes on different aspects of firm performance. The extreme *command* and *generative* modes indeed prove not to be predictive of long-term growth orientation. *Symbolic* and *transactive*, which are said to positively influence performance aspects like future positioning, growth and quality, also exhibit a relatively strong positive impact on long-term growth orientation. Lastly, *rational* strategy-making, which Hart links to superior current but not future performance, accordingly has a (slightly) negative impact on long-term (i.e. future) growth orientation. This congruence of the survey results with the theoretical propositions qualifies Hart's integrative framework as a meaningful conceptualization of the strategy-making phenomenon and allows for a better tracing and comprehension of the role and relevance of strategy-making with respect to the encouragement of managerial long-term growth orientation.

On the other hand, the five factor measurement model showed substantial deficits during the survey phase. Even though Hart/Banbury (1994, p. 258) report a stable five-factor structure of their item batteries, the results of this study point to at least some amount of collinearity between the different modes. This indicates that the constructs are either too close, conceptually, or that the current operationalization lacks sufficient selectivity given the conceptual proximity of the different modes as (highly correlated) organizational capabilities. As the framework nonetheless yields some valuable insights as indicated above, the results call for a further refinement of the instruments to arrive at more definite answers in future research projects.

### *1.3. On RAPM Research Informed by Structuration Theory*

While the previous two sections deal with the implications for the *substantive* theoretical domain of the study, the following section addresses its *meta-theoretical* or *ontological* grounding.[513] In particular, it reviews the study's contribution to the theoretical grounding of management accounting research in social theory and highlights the value of basing the RAPM study on Giddens' Structuration Theory, i.e. of conducting it 'informed by' Structuration Theory.

In an attempt to bridge the persisting gap between the well-advanced theoretical reflection of Structuration Theory in management accounting and the somewhat underdeveloped notion of empirical research informed by Structuration Theory, the study renders the cornerstones of a 'Structurationist' research perspective on management accounting (see Section B2.2).

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[513] For the differentiation and interplay of *substantive theory* and *meta-theory*, see also Section B2.2.4.

Through the combination of the theoretical propositions of Macintosh, Scapens, Roberts, and Boland[514] with the emerging patterns in empirical research, the study pinpoints three basic heuristic research guidelines which complement the underlying ontological concepts like Structuration, the Duality of Structure, or the Dialectic of Control: The study of management accounting as social practice, the consideration of the relevant social context of management accounting, and the awareness for the three social dimensions of management accounting.

In addition, the study derives the implications for the particular research approach drawing on the five basic research concepts by Ahrens/Chapman (2007a). The approach includes a complementary use of Structuration Theory as ontological foundation and one or more substantive management accounting theories and embraces a research methodology that impartially combines qualitative and positivistic aspects. The research domain is defined as 'the field' including one or a small sample of organizations as well as broader social systems such as industries, countries or cultural spheres depending on the research question at hand. Lastly, the approach draws its analytical depth from semi-structured interviews, which should be embedded in a multi-method approach containing other ethnographical methods as well as questionnaire surveys.

The value of this research perspective for the present study will be evaluated along the two aspects of (1) providing meaningful guidance and direction to the research effort and of (2) representing a useful means of interpreting the study results.

In terms of the provision of guidance and direction, Giddens' 'ontological frame of reference' led to a research approach that consistently achieves more analytical depth and breadth than previous (conventional) RAPM studies, which mostly consist of cross-sectional survey studies providing little empirical base for the interpretation and evaluation of the causal relationships discovered or not discovered against the background of a particular management accounting practice. These additional insights are achieved at the expense of limited generalizability of the results in terms of deducting more or less universal causalities which hold beyond the researched organizational context. Following Giddens' argument that the causal mechanisms discovered in the social sciences represent rather temporally and spatially circumscribed "explanatory propositions" than universal laws,[515] the additional explanatory potential of

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[514] Roberts/Scapens (1985); Macintosh/Scapens (1990); Macintosh/Scapens (1991); Boland (1993); Boland (1996); Scapens/Macintosh (1996).

[515] Giddens (1984), p. xviii; Macintosh/Scapens (1990), pp. 469-470.

research informed by Structuration Theory outweighs the additional benefits of generalization through statistical inference.[516]

The guidance of the research effort through Structuration Theory can be demonstrated especially along three basic design choices: The analysis of RAPM as social practice, the exploration and inclusion of the relevant organizational context and the consideration of both structural aspects and aspects of individual agency reflecting the notion of the Duality of Structure (see also Sections B2.2.1 and B2.2.2).

The study chose to approach the RAPM phenomenon as social practice, i.e. to focus on how the individual middle manager perceives the specific emphasis on short-term budgetary targets set by his respective superiors and not to center on the (formal) properties of the performance management and incentive system the manager is subject to. The latter approach would also have led to very little variance in the n=1 case study as the formal parameters of the performance management system do not differ much across the business units in the sample. Yet, quite on the contrary, the perceived emphasis on short-term targets differs greatly across individual managers underlining the fact that superiors enact these formal systems differently in practice, leading to a range of RAPM practices despite a more or less uniform RAPM system. It is important to note that in this case the perceptive RAPM measures, which have also been used in previous research efforts, are by no means a second-best surrogate to determine latent variable scores but are in fact the natural measure of choice as individual perception of the RAPM practice determines individual behavior. Insofar, the study deepens the analysis as it acknowledges that not RAPM system properties themselves but the perception of these system properties enacted in practice determine the functional or dysfunctional consequences of RAPM. The view on management accounting as social practice in terms of Giddens' Structuration Theory is also increasingly shared in the (alternative) management accounting literature.[517]

In terms of the research scope, the study approach allowed for a meaningful interpretation of Hopwood's (1983) call to study management accounting "in the contexts in which it operates". A more conventional approach close to previous RAPM research would have led to a much narrower replication study testing the dysfunctional effect of RAPM on managerial long-term orientation, taking into account the usual batteries of contingency variables to explain any deviation from previous work based on the influence of contingent factors.[518] Management accounting research informed by Structuration Theory positions the rules, resources, and resulting social practices of the

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516 The chosen crucial case setup even partially combines these two positions in providing an explanatory proposition and the alleged dysfunctional effect of RAPM, which should hold beyond the case.

517 Cf. for example Ahrens/Chapman (2007b).

518 Hartmann (2000), pp. 465-466.

relevant organizational context on the same level of relevance as the management accounting practice under scrutiny. It thus acknowledges the importance of the organizational context, deliberately includes its dominant aspects into the analysis, and, lastly, treats these variables as action variables and not as (externally or internally) predetermined contingencies. The resulting research perspective is concerned with the linkages and interplay of organizational context and management accounting practice and not just with the behavioral and organizational consequences of a particular practice given a (fixed) contingent context. In this case, the study unveiled corporate entrepreneurship and strategy-making as relevant aspects of the context in which the RAPM practice operates and demonstrated how these other organizational variables or levers can be employed to encourage managerial long-term growth orientation under a management accounting regime with a strong focus on short-term financial performance – even independent of whether there is or is not a strong dysfunctional effect of RAPM.

A last notable extension of previous RAPM research efforts is the simultaneous consideration of structure and agency under the Duality of Structure paradigm. Even though structural aspects dominate in this 'institutional analysis', the study nonetheless takes into consideration aspects of agency for example when assessing the managers' entrepreneurial predisposition as "motivation" and "potential"[519] for agency (see Section E3.3.1). In terms of the underlying structure vs. agency debate where Giddens purposely avoids taking either side, the study renders one point of observation where structural aspects (the entrepreneurial environment and organizational entrepreneurial behavior) seem to prevail individual aspects in terms of personality traits and related individual preferences. Yet, the present study also shows why it is not appropriate to address the structure vs. agency debate in a dualistic "either/or" fashion but that an inclusive and unbiased approach is preferable. The crucial *management support* dimension of the entrepreneurial environment, the encouragement, promotion, and facilitation of entrepreneurial initiatives by superiors clearly exhibits structural properties but is first and foremost an act of individual agency by the respective superior, which is then – through continuous reproduction – enacted as the social practice 'management support'.

In addition to these aspects of guidance and direction, Structuration Theory also provides conceptual resources to interpret the study results. Section C2.5 conceptualizes the RAPM practice along Giddens' modalities of Structuration to illustrate how the emphasis on short-term accounting measures impacts managerial behavior and performance along the signification, legitimization and, lastly, domination dimension and could thereby induce myopic behavior. The study results, however, show the absence of such a dysfunctional relationship. This means that managers

[519] Giddens (1984), p. 6.

do not exclusively draw on these modalities and that the competing modalities apparently even prevail. In line with the study findings, corporate entrepreneurship and strategy-making can also be interpreted as (competing) modalities of Structuration which prove to have a differentiating impact on managerial behavior in terms of long-term growth orientation, i.e. appear to dominate the RAPM-related modalities.

With respect to the dimension of signification, the narrow attribution of meaning and (economic) value to meeting short-term budgetary targets is extended and complemented. Corporate entrepreneurship additionally attributes meaning and value to change, strategic renewal and innovation, which cannot or at least cannot easily be captured in budgetary terms. Strategy-formulation also attaches significance to strategic visions, priorities, and goals which at best impact future but not current budgets. In the determination of their long-term growth orientation, middle managers appear to apply a multifaceted version of meaning and value which clearly extends beyond the monetary sphere of short-term budgetary impact.

With respect to legitimization, middle managers draw justification for their behavior not just from budgetary norms and standards but appear to use additional organizational norms as guidelines for their behavior. When (corporate) entrepreneurial activity is deemed a value in itself, then managers also feel legitimized to engage in entrepreneurial initiatives even if there are not most favorable in terms of short-term budgetary performance. A similar argument holds true for strategic decision-making where a long-term ambition justifies actions which would otherwise be sub-optimal under an exclusive RAPM regime.

With respect to domination, authoritative as well as allocative power appears not only to be executed by or based on the APM management practice. Corporate entrepreneurship appears to exhibit complementary authoritative power, e.g., through role-modeling and related group or peer pressure mechanisms and also (ideally) creates allocative leeway for creative idea generation apart from the regular budgeting cycles. Strategy-making also appears to create some extent of individual-level accountability for strategic issues independent from regular performance management routines and also provides for allocative resources for prioritized strategic initiatives outside the short-term budgetary system.

In sum, corporate entrepreneurship and strategy-making modalities of Structuration build on non-financial aspects of legitimization and meaning and appear to influence managerial behavior predominantly via intrinsic motivation. Thereby, they are clearly different from the RAPM modalities, which focus on extrinsic motivation (compensation and promotion) based on budgetary and financial performance. The observation can also be linked to the above argument where managers temporarily separate short- and long-term roles. In this sense, they draw on RAPM-related modalities of Structuration while assuming the competence deploying role but (occasionally) switch to a different set of modalities while adopting the competence defining role. This could explain why the RAPM modalities do not negatively affect managerial long-term growth orientation.

### *1.4. On Management Accounting Practice and Strategic Behavior*

The present study takes its place in the research field concerned with the interplay of management accounting practice and strategic behavior. It addresses the broad field through the exemplary investigation of the relationship of one particular management accounting practice, the Reliance on Accounting Performance Measures (RAPM), on one particular aspect of strategic behavior, the managerial long-term growth orientation as attitudinal prerequisite. With RAPM (still) representing a cornerstone of management accounting practice (see Section C3.1.1) and long-term growth orient-tation constituting a highly relevant aspect of long-term orientation and the associated strategic behavior (see Section C3.2.1), one can draw some more general conclusions for the broader research field based on the study results. Especially two aspects should be considered in future management accounting research: (1) A more balanced perspective on the role of management accounting in the context of strategic management behavior and (2) a broader, more inclusive scope in accounting research acknowledging the *relative* importance of management accounting practices in the organizational context.

The first point touches on the frequently stated perspective of an *inevitable* trade-off or *inherent* tension between management accounting practice and strategic management behavior.[520] While management accounting appears crucial to short-term goal achieve-ment, it is usually associated with a more or less dysfunctional effect on long-term orientation and strategic behavior.[521] Hartmann (2000, p. 467) rightfully criticizes the one-sighted, "limited focus" on the negative aspects of management accounting which prevents a holistic assessment of the behavioral impact of management accounting practices and the further advancement of theory. In fact, the results of the present study question the narrow and negatively-biased research perspective. A focal aspect of the *inevitable* trade-off – the dysfunctional relationship of RAPM and long-term (growth) orientation – could, yet again, not be validated and, consequently, the underlying common belief regarding the negative relationship of management accounting and strategic behavior needs to be reconsidered. The study results can therefore be inter-preted as a call for a more balanced and impartial assessment of the relationship to replace the biased common wisdom.

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[520] Simons (1995), p. 91; Frow/Marginson/Ogden (2005), p. 270.

[521] Cf., e.g., Hayes/Abernathy (1980), p. 70; Laverty (1996), pp. 831-832; Van der Stede (2000), p. 612.

This perspective on management accounting and strategic behavior can be seen in the tradition of Ahrens/Chapman (2004) who introduced the two-sided notion of "coercive" and "enabling" management accounting practices based on the work by Adler/Borys (1996). The initial framework by Adler/Borys contrasts, on the one side, "coercive" formalization of bureaucracy as fostering dissatisfaction and limiting motivation and innovation among individuals and, on the other side, "enabling" formalization as guiding, clarifying, and helping individuals.[522] Ahrens/Chapman (2004) likewise distinguish between "coercive" management accounting practices as emphasizing top-down control in terms of centralization and preplanning and "enabling" practices that provide support, guidance, and feedback to identify and prioritize problems and to deal with uncertainty.[523] They also acknowledge and criticize the narrow perspective on management accounting where it is "frequently taken for granted that they [management control systems, OG] are a coercive type of formalization". Consequently, they propose the duality of coercive *and* enabling management accounting practices as a balanced and comprehensive research instrument to overcome one-sighted perspectives on management control.

In this sense, the present study questions the (exclusively) coercive nature of management accounting with respect to strategic management behavior and proposes to equally consider the potential enabling qualities. One then has to concede that management accounting practices can also 'enable' and facilitate strategic behavior through the enhancement of the transparency[524] on the financial impact of strategic options which helps managers to cope with uncertainty and generally improves strategic decision-making.

The second point deals with the positioning of management accounting practice in regard to the organizational context. Research in the tradition of Anthony Hopwood[525] acknowledges that management accounting needs to be studied in its organizational context, i.e. that the other organizational practices need to be taken into account when assessing the quality and (behavioral) impact of a particular management accounting practice. This especially holds true for the investigation of the complex organizational interplay of management accounting and strategic behavior.

Yet, as mentioned in the previous Section, quantitative management accounting research tends to treat the context variables as (stable) contingency variables to which management accounting practices need to fit or need to be adjusted.[526] In the case of

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[522] Adler/Borys (1996), pp. 61-65.

[523] Ahrens/Chapman (2004), pp. 271, 278-279; Wouters/Wilderom (2008), p. 491.

[524] To create "internal transparency" and "global transparency" are two key aspects of enabling management accounting practices according to Ahrens/Chapman (2004), p. 270.

[525] Hopwood (1983); see also Section B2.2.2.

[526] Briers/Hirst (1990), pp. 391-392; Hartmann (2000), p. 468.

encouraging or discouraging strategic management behavior, research is either concerned with analyzing when, i.e. under which contingencies, management accounting is more or less problematic or, alternatively, with how management accounting practices should be designed given a certain contingency profile. This, in fact, falls short of Hopwood's call to study accounting in its organizational context. He criticizes the "deterministic nature", "restrictive static and often functionalist presumptions" of such an approach and instead encourages researches to focus on the dynamic interplay of management accounting and its context – to analyze "not only how accounting might be shaped by its context but also how at least some aspects of that very same context might in turn be shaped by accounting itself."[527]

In a similar fashion, the approach of the study summarized above treats the (internal) contextual variables such as Entrepreneurial Orientation and the properties of strategy-making not as static contingency variables but rather as adaptable action variables and analyzes their impact on long-term orientation *relative* to RAPM as management accounting practice. This has two implications: First, it allows for the assessment and description of the role and the relevance of management accounting with respect to the organizational context. In the particular case, RAPM as management accounting practices appears less important for long-term growth orientation than the other contextual variables under scrutiny. Second, it enables the researcher to use a much broader solution space for the derivation of recommendations and the pursuit of an optimal setup. As such, the researcher is not any more confined to only adjusting properties of the management accounting system to influence strategic behavior. One example for such 'local optimization' is the deliberate inclusion of budgetary slack to spur strategic behavior at the expense of tight budgetary control and the associated benefits for short-term goal achievement.[528] Instead, the researcher can aim for optimization at a more general level by choosing and adjusting the most influential levers for strategic behavior among the properties of management accounting and the relevant contextual variables. In the present case, changing the management accounting practice of RAPM appears to be much less efficient than adjusting the entrepreneurial environment or the strategy-making process.

In sum, research on management accounting and strategic behavior should increasingly try to analyze both management accounting practices *and* (internal) contextual variables as adjustable parameters aiming for an optimal setup of management accounting and organizational context to best foster strategic management behavior.

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[527] Hopwood (1983), pp. 289, 298.
[528] Van der Stede (2000), p. 619.

## 2. Managerial Implications

After the discussion of the theoretical implications of the study results, in the following chapter the managerial implications will be derived: as to what extent and why managers should or should not rely on accounting performance measures (Section G2.1) and as to which other specific context factors could be employed to influence managerial long-term orientation (Sections G2.2 and G2.3). As mentioned above, the individual sub-dimensions of corporate entrepreneurship and strategy-making and their impact on long-term growth orientation will be discussed in detail against the background of the specific case.

### *2.1. RAPM*

From a management point of view, any dysfunctional effect of RAPM on managerial long-term orientation results in a tradeoff between short-term (financial) goal achievement (via strong RAPM) and the encouragement of strategic behavior, in this case directed at assuring long-term growth performance. Despite the strong anecdotal support for the dysfunctionality, the survey results indicate that such an inherent tradeoff does not exist as RAPM does not negatively affect long-term growth orienttation. In fact, the argument that managers neglect long-term targets due to the emphasis on short-term targets appears to be a "pretextual argument" as mentioned by one interviewee during the interview phase (see Section E3.2)

Consequently, managers should not compromise on budgetary tightness to encourage long-term growth orientation, despite some empirical evidence indicating a positive relationship of budgetary slack and long-term orientation.[529] Budgetary leeway (alone) does not seem to be sufficient to spur long-term growth initiatives and, based on the study results, adjusting budgetary tightness (and thus indirectly slack) does not appear to be an efficient lever to foster strategic behavior as the measured effect is generally small and its direction (positive or negative) is still debatable. Actually, the researched company had already established means to fund long-term growth projects with corporate resources outside the regular budgetary and performance measurement scheme. Even though one interviewee stated that "in other companies, people would tussle for them", the uptake so far was disappointing thereby underlining the above argument. It might be possible to use the organization's management control *restricttively* to limit current spending but it appears difficult to use it *expansively* to encourage spending for future growth.

In addition to not exhibiting dysfunctional effects, the level of RAPM also does not seem to be as important in pro- or demoting long-term growth orientation as the other

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[529] Merchant (1985a), pp. 202-203; Merchant/Manzoni (1989), p. 550; Nohria/Gulati (1996), pp. 1247, 1258; Van der Stede (2000), pp. 612, 617.

organizational levers identified in the study. Therefore, rather than changing properties of the management control system managers should try to adjust other organizational variables such as the environment and level of corporate entrepreneurship and the strategy-making as indicated in the following.

### *2.2. Corporate Entrepreneurship*

For the discussion of the role and relevance of corporate entrepreneurship (CE), it proves helpful to separate its key aspects analytically. While the importance of corporate entrepreneurship was widely acknowledged within the organization on the aggregate level, there was limited knowledge on the role and relevance of its constituent aspects. Consequently, the managerial implications will be reviewed along the different sub-dimensions of Entrepreneurial Orientation (EO) and the organizational environment.

In terms of spurring managerial long-term growth orientation via the level of Entrepreneurial Orientation, the risk-taking dimension proves pivotal while the role of innovativeness remains ambivalent.

From the three dimensions of Entrepreneurial Orientation, risk-taking is clearly the most important driver of individual-level long-term growth orientation. Nonetheless, the notion of increased risk-taking behavior was discussed controversially within the organization during the course of the study. Many perceived risk-taking behavior as the exclusive pursuit of projects with a high risk/return profile in a hazardous gambling manner and therefore strongly opposed increased risk-taking behavior. Yet, the analysis of the impact of the risk-taking construct on a per-item base[530] reveals that the pivotal aspect is not the "strong affinity for high risk-projects (with chances of very high returns)" but the "bold, aggressive posture" when confronted with decision-making under uncertainty. In other words, risk-taking behavior for the purpose to enhance long-term growth orientation is not about engaging in high-risk projects but about taking decisive actions in case of uncertain or ambiguous situations. The interpretation is also in line with findings from the interviews where managers conceded that the decision-making process with respect to long-term growth initiatives tends to be both lengthy and highly consensual involving many participants within the organization. 'Entrepreneurial' decision-making in terms of individual managers taking quick and decisive decisions on their own authority is rarely the case.

Based on the survey results, the key environmental dimension that encourages the organizational risk-taking behavior proves to be the level of top management support,

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[530] Based on LISREL SEM modeling of the impact of each individual item on LGO; only item three (cautious "wait-and-see" vs. bold, aggressive posture when faced with decision-making involving uncertainty) has a significant positive impact on LGO (.155 with $t = 2.360$, $p < .05$), the other two items score much lower and their paths are not significant at the 5% level.

i.e. top management behavior directed at encouraging, promoting, and facilitating entrepreneurial behavior. The qualitative evidence indicates that management support is especially lacking in three areas: The top management team currently appears to insufficiently role-model entrepreneurial behavior in terms of entrepreneurial decision-making under uncertainty. Additionally, they do not sufficiently tolerate management failure due to risk and uncertainty, i.e. they tend to link all failures back to personal misconduct resulting in severe consequences for the individual (risk-taking) manager. Lastly, corporate entrepreneurs face substantial formal hurdles when trying to launch long-term growth initiatives. Both bodies of evidence considered together suggest that strengthening the management support in terms of increased role-modeling, an adequate tolerance for business-related failure as well as the review and reduction of formal barriers for entrepreneurial initiatives is likely to spur both individual and organizational risk-taking behavior.

The other dimensions of entrepreneurial environment (the level of recognition and rewards, the extent of work discretion and autonomy, the availability of time and the structural support of the organization) did not show any significant impact on organizational risk-taking and thus do not appear to be efficient levers to influence managerial behavior in this respect.

Even though the risk-taking dimension proves to be the pivotal driver of long-term growth orientation, the most intriguing survey result nonetheless is the negative impact of organizational innovativeness on managerial long-term growth orientation. The finding is highly counter-intuitive as innovativeness is the focal aspect of entrepreneurial behavior, which in turn is considered to be positively related to managerial long-term growth orientation. Long-term growth, in addition, mostly stems from (successful) innovative behavior. And still the results indicate that the more innovative a business unit, the less is the individual's concern for long-term growth. Based on detailed and controversial discussions within the researched organization, the following line of argument appears to be a plausible explanation for this finding. Due to the strong engineering tradition and mindset, innovation and innovativeness are generally accepted corporate values and sometimes appear to be – in a pointed fashion – an end in itself. Growth and the need to grow, on the other hand, do not seem to be perceived as an independent corporate goal, equally in importance to profitability, value and innovation. In addition, many members of the organization appear to share the implicit assumption that innovation somewhat automatically results in sales growth and that therefore the concern for innovation also indirectly covers the concern for growth. Consequently, managers in highly innovative units see the growth target automatically or implicitly covered by innovation and do not see the need to (additionally) care about the (presumably secondary) goal of sustained sales growth. But even though long-term growth usually stems from innovation, innovation does not always or automatically translate into growth. In fact, the company has recently witnessed instances where the market preferred less innovative, yet at that time more suitable products from competitors over their own highly innovative solutions. Consequently, sales growth should be anchored as pivotal corporate goal next to profitability while innovation should be clearly positioned as *means* to achieve growth but not as end in itself. Similar to the previous corporate transformation, which instilled a profitability mindset into the traditional engineering culture, elements of a growth culture need to round of the development to arrive at a balancing of concerns for short-term profitability and long-term growth.

Of the dimensions of the entrepreneurial environment, only the effectiveness of the rewards system significantly impacts organizational innovativeness. This is an indicator that the current rewards system too narrowly rewards innovativeness potentially at the expense of entrepreneurial risk-taking.

Based on the survey results, the other environmental dimensions, i.e., management support, managers' decision-making autonomy, time availability as well as organizational boundaries, also do not seem to affect innovativeness at the researched organization.

Lastly, the comparison of individual and structural antecedents for corporate entrepreneurship suggests that the organization does not – as proposed by some interviewees – lack entrepreneurs per se but rather lack a more entrepreneurial environment including a more entrepreneurial culture as outlined above. These contextual factors, rather than personality traits appear to determine the long-term growth orientation of managers. Consequently, the adjustment of structural aspects appears more promising in promoting corporate entrepreneurship and long-term growth orientation than the partial replacement of the current management staff with an allegedly more entrepreneurial type of manager based on predispositions.

### *2.3. Strategy-Making*

The analysis of the role and relevance of strategy-making and the observed profile of *rational*, *symbolic*, and *transactive* strategy-making reveal an imbalance in the organizations strategy-making practice, which negatively affects managerial long-term growth orientation.

Findings from both the interviews and the survey show a dominance of (analytical) long-term planning at the expense of (creative/discursive) strategy-formulation. The observed strategy-making practice tends to be confined to the rigid strategy process, which evolves sequentially rather than iteratively. In the course of the process, there is a strong bias towards the existing business and its extrapolation against market growth in order to identify and size strategic gaps. Consequently, the identification of new business opportunities and the crafting of strategic initiatives to close the strategic gaps tend to be of less relevance. A large part of the strategy work is then dedicated to complete strategy templates and to conduct bridging calculations with respect to previous short- and long-term plans. Under this practice, strategy reviews tend to degenerate to strategy presentations with the ultimate goal to gain a smooth approval of long-term plans without critically reviewing, challenging, and adapting the underlying assumptions and proposed strategies.

The survey demonstrates that the dominant *rational* or *planning* mode inhibits long-term growth orientation while the (partially) neglected *symbolic* and *transactive* modes appear to spur strategic behavior with respect to growth. Consequently, balancing both aspects is likely to also improve the balancing of short- and long-term concerns among middle managers.

With respect to *symbolic* strategy-making, one business unit (F) has already successfully gone through a different strategy-making process. It has – based on the formulation of a specific BU vision and mission – derived a complementary set of strategic initiatives which are currently being implemented. The advantage of the approach is twofold. On the one hand, the strategic vision and mission provides for general guidance of the organization and creates conviction for the long-term targets. On the other hand, the approach overcomes the mere extrapolation of the current business because it centers on future positioning as the point of origin for strategy formulation. Instead of projecting where the business unit will end up, given the development of the current business with its threats and likely opportunities, the approach deducts the necessary strategic measures required to arrive at a predefined strategic position. Strengthening the *symbolic* aspect of strategy-making therefore appears to be a promising lever to increase long-term growth orientation.

With respect to *transactive* strategy-making, the strategy process should put increasing weight on discussing and challenging a business unit's implicit and explicit assumptions and the deduced strategic thrusts leading to iterative loops of strategy refinement and also an increased focus on opportunities beyond the existing business. The reallocation of time and resources from *rational* to *transactive* strategy-making is also likely to increase middle managers' concern for long-term growth issues.

During the course of the study, the organization already took measures in line with these recommendations to ease the preponderance of *rational* strategy-making in favor of *transactive* elements. Hence, it substantially loosened the long-term planning 'shackles' by decreasing the number and relevance of strategy templates to-be-filled and through the allocation of significantly more time to strategy reviews, i.e. to discussing and critically challenging a BU's strategic agenda.

## 3. Limitations and Outlook

Finally, a number of limitations to this study need to be mentioned in order to provide guidance for future research.

First, the study results are based on evidence gathered at a single organization. Even though the 'crucial case' approach is explicitly designed to draw generalizable conclusions from only a few or even just one case object, the possibility cannot be ruled out that the results are systematically biased in regard to the specific organizational context of a large German manufacturing company or the specific type of a predominantly engineering-driven middle manager. Consequently, future RAPM research efforts should replicate this in-depth inquiry in different organizational contexts in terms of varying size, industry, as well as the national and cultural environment to test for a systematic bias due to the choice of case. In addition, the findings should also be validated in large cross-sectional studies to confirm the appropriateness of the 'crucial case' approach.

Second, the operationalization of managerial long-term orientation along the notion of long-term *growth* orientation is far from exhaustive. Even though the concept of long-term growth orientation overcomes some of the limitations of the previously used narrow time orientation construct and addresses a pivotal aspect of long-term performance, it still only partially covers the domain of long-term orientation. Most importantly, it represents an attitudinal measure, which captures a manager's preferences and motivations with respect to short- and long-term concerns but not his (resulting) decisions and actions in the context of trading specific short- and long-term issues. As individual agency (partially) builds on individual preferences, the long-term growth orientation measure is somewhat indicative of managerial action. Nonetheless, actions and decisions can deviate from or even contradict underlying preferences if other important factors prevail. A strong RAPM might in this sense not change managerial attitudes and motivations but could potentially still cause dysfunctional behavior 'overriding' his preferences towards long-term growth. Therefore, the study findings only represent early evidence in questioning the existence of a dysfunctional effect on long-term orientation in terms of strategic behavior. Accordingly, future studies should also include action-oriented dimensions of long-term orientation in an attempt to more exhaustively cover the underlying domain and to arrive at even more robust evidence on this behavioral effect of RAPM.

Third, the analysis of the role and relevance of the organizational context represents only a first exploratory effort with an exemplary assessment of the impact of two context factors in one particular organizational setting. Neither does it claim to exhaustively cover all other organizational factors impacting long-term growth orientation, nor does it presume to yield generalizable findings beyond the researched organization. It only provides early but promising evidence that the organizational context could have a substantial impact on managerial long-term orientation and that the impact might exceed the behavioral effects of RAPM. Future research should therefore systematically explore the set of relevant organizational practices that restrain or promote managerial long-term orientation on a case level, identify emerging cross-case patterns concerning the role and relevance of these practices, and, in particular, gauge their interplay with RAPM in determining managerial long-term orientation.

Lastly, the survey section of the study faces the usual limitations of questionnaire-based research employing self-reported, perceptual measures.[531] In particular, the study results could systematically suffer from two types of common method biases.[532] On the one hand, the findings could be subject to a common source or common rater bias as both, the dependent and independent, variables were obtained from the same source, in this case the middle manager as self-reporting rater.[533] This might have induced a tendency to consistent and social desirable answers, which might not fully mirror individual preferences and perceptions. On the other hand, the item characteristics could also have induced a common method effect as almost all scales were measured as 7-point Likert scales with identical anchoring of "strongly agree" and "strongly disagree".[534] Consequently, some of the covariance observed might have been due to the consistency in the scale properties and not the content of the items. In the latter case, the study would have an inherent tendency to over-estimate positive relationships and under-estimate negative relationships, which could be the reason for the absence of an (observed) dysfunctional effect. Yet, as the study still renders comparatively strong, highly significant negative relationships, it appears unlikely that the common method effect dominates the underlying fundamental relationships in the structural models.

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[531] Cf. for example overview in Birnberg/Shields/Young (1990).
[532] Cf. overview in Podsakoff *et al.* (2003).
[533] Ibid., pp. 881-883.
[534] Ibid., p. 884.

# Appendix

## Measures (1/6) – RAPM and Managerial Long-Term Orientation

| Construct | Items |
|---|---|
| EMPHASIS | 1. My performance is predominantly judged on the basis of attaining budget goals.<br>2. Achieving the budget is seen as an accurate reflection of whether I am succeeding in my job.<br>3. Not achieving my budget has a strong impact on how my performance is rated.<br>4. My promotion prospects depend heavily on my ability to meet the budget.<br>5. *Not achieving the budget is believed to reflect poor performance.*[e]<br>6. I am constantly reminded of the need to meet the budget targets.<br>7. Control over my job is principally done by monitoring how well my budget is on target. |
| LGO | In the long run (i.e., concerning the next 4-8 years), …<br>1. …my division should aim at strong sales growth.<br>2. …strong sales growth is essential for us to secure our forthcoming positions.<br>3. …growing as strongly as possible should be our most important goal.<br>4. *…aiming for strong sales growth should not be the key driver for my division. [reverse coded]*[e]<br>5. *Please allocate 100 points across the 4 goals below to indicate how important you consider them to be for your division in the long run (4-8 years): [points allocated to sales growth were used to calculate relevance of long-term growth]*[e]<br>• *Maximizing profitability*<br>• *Maximizing sales growth*<br>• *Maximizing stability and longevity*<br>• *Maximizing technical superiority* |
| LTO | What percentage of your time is devoted to working on matters which will be *relevant* (i.e. will impact the budget or profit and loss statement) within …<br>• 1 quarter or less.<br>• 1 quarter to 1 year.<br>• 1 to 3 years.<br>• More than 3 years. *[score used indicator for long-term time orientation]* |

[e] Item deleted after scale purification procedure.

## Measures (2/6) – Entrepreneurial Orientation (EO)

| Construct | Items | | |
|---|---|---|---|
| ORGINNO | 1. In general, my division tends to favor a strong emphasis on… | | |
| | …the marketing of tried and true products and services | vs. | …R&D, technological leadership, and innovations. |
| | 2. How many new lines of products or services has your division marketed during the past 3 years? | | |
| | No new lines of products or services | vs. | very many new lines of products or services. |
| | 3. During the past 3 years, changes in my division's product or service lines have been… | | |
| | …mostly of minor nature | vs. | …quite dramatic. |
| ORGPRO | 1. In dealing with its competitors, my division typically… | | |
| | …responds to actions, which competitors initiate | vs. | …initiates actions to which competitors then respond. |
| | 2. In dealing with its competitors, my division is… | | |
| | …very seldom the first to introduce new products or services, administrative or operating techniques, etc. | vs. | …very often the first to introduce new products or services, administrative or operating techniques, etc. |
| | 3. In dealing with its competitors, my division typically… | | |
| | …seeks to avoid competitive clashes, preferring a "live-and-let-live" posture | vs. | …adopts a very competitive "undo-the-competitor" posture. |
| ORGRISK | 1. In general, in my division, we tend to have… | | |
| | …a strong affinity for low risk projects (with normal and certain risks of return) | vs. | …a strong affinity for high risk projects (with chances of very high returns). |
| | 2. In general, in my division, we believe that - owing to the nature of the environment -, … | | |
| | …it is best to explore it gradually via cautious, incremental behavior | vs. | …bold, wide-ranging acts are necessary to achieve the division's objectives. |
| | 3. When confronted with decision-making situations involving uncertainty, my division typically adopts… | | |
| | …a cautious "wait-and-see" posture in order to minimize the probability of making costly decisions | vs. | …a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities. |

## Measures (3/6) – Entrepreneurial Environment

| Construct | Items |
|---|---|
| SUPPORT | 1. In my division, developing one's own ideas is encouraged for the improvement of the corporation.<br>2. The "doers" are allowed to make decisions on projects without going through elaborate justification and approval procedures.<br>3. Innovators are encouraged to bend rules and rigid procedures to keep promising ideas on track.<br>4. Individual risk takers are respected for their willingness to champion new projects, whether eventually successful or not.<br>5. People in my division are often encouraged to take calculated risks with new ideas.<br>6. This division supports many small and experimental projects realizing that some will undoubtedly fail.<br>7. A manager with good ideas is often given free time to develop that idea.<br>8. *People are encouraged to talk to other departments or divisions about ideas for new projects.* [e] |
| AUTONOMY | 1. I do not have to double check all of my decisions.<br>2. *This division provides me with the chance to be creative.* [e]<br>3. This division provides the freedom to use my own judgment.<br>4. It is basically my own responsibility to decide how my job gets done.<br>5. *I almost always get to decide what I do on my job.* [e]<br>6. I have much autonomy on my job. |
| REWARDS | 1. The rewards I receive are dependent upon my work on the job.<br>2. My job responsibilities will be increased if I am performing well in my job.<br>3. I will receive special recognition if my work performance is especially good.<br>4. My superiors would tell others if my work was outstanding. |
| TIME | 1. During the past three months, my workload was too heavy to spend time on developing new ideas. [reverse coded]<br>2. I have just the right amount of time and workload to do everything well.<br>3. I feel that I am always working with time constraints on my job. [reverse coded]<br>4. My colleagues and I always find time for long-term problem solving. |
| BOUNDARIES | 1. In the past three months, I have always followed standard operating procedures or practices to do my major tasks.<br>2. There are many written rules and procedures for doing my major tasks.<br>3. My job description clearly specifies the standards of performance on which my job is evaluated.<br>4. I clearly know what level of work performance is expected from me in terms of amount, quality, and timeliness of output. |

[e] Item deleted after scale purification procedure.

## Measures (4/6) – Proclivity for Entrepreneurship

| Construct | Items |
|---|---|
| ACHIEVE | 1. I do my best work when my job assignments are fairly difficult. |
| | 2. I try very hard to improve on my past performance at work. |
| | 3. *I take moderate risks and stick my neck out to get ahead at work.*[e] |
| | 4. *I try to avoid any added responsibilities on my job. [reverse coded ]*[e] |
| | 5. I try to perform better than my colleagues. |
| | 6. I appreciate opportunities to discover my own strengths and weaknesses. |
| | 7. *Solving a simple problem is not as satisfying to me as trying a difficult one.*[e] |
| INNOVATE | 1. I often surprise people with my novel ideas. |
| | 2. People often ask me for help in creative activities. |
| | 3. *I obtain more satisfaction from mastering a skill than coming up with a new idea. [reverse coded]*[e] |
| | 4. I prefer work that requires original thinking. |
| | 5. *I usually continue doing a new job in exactly the same way it was taught to me. [reverse coded]*[e] |
| | 6. *I like a job that demands skill and practice rather than inventiveness. [reverse coded]*[e] |
| | 7. I like to experiment with various ways of doing the same thing |
| RISK | 1. I enjoy the excitement of uncertainty and risk. |
| | 2. The opportunity to pursue an idea I believe in is more important to me than job security. |
| | 3. I am willing to take significant risk if the possible rewards are high enough. |
| | 4. *I'd rather miss a good opportunity than make a costly mistake. [reverse coded]*[e] |
| | 5. *I prefer things to be planned thoroughly. [reverse coded]*[e] |
| | 6. If I believe in my idea, I pursue it no matter what other people think or say. |
| | 1. We need to accept demands that go beyond existing products and services. |
| | 2. We need to use new distribution channels regularly. |

## Measures (5/6) – Preference for Exploitative and Exploratory Innovation

| Construct | Items |
|---|---|
| EXPLOIT | 1. We need to refine the production/supply of existing products and services frequently.<br>2. We need to implement small adaptations of existing products and services regularly<br>3. We need to introduce improved but existing products and services for our local markets.<br>4. We need to improve the efficiency of production/supply of products and services<br>5. *We need to increase economies of scale in existing markets.*[e]<br>6. We need to expand services for existing customers. |
| EXPLORE | 1. We need to experiment with new products and services in our local markets.<br>2. We need to commercialize products and services that are completely new to our division.<br>3. We need to invent new products and services.<br>4. We need to utilize new opportunities in new markets (new customers and/or new geographies) frequently.<br>5. We need to accept demands that go beyond existing products and services.<br>6. We need to use new distribution channels regularly. |

[e] Item deleted after scale purification procedure.

## Measures (6/6) – Strategy-Making Modes

| Construct | Items |
|---|---|
| COMMAND | 1. The strategy for my division is primarily set by the president of my division and a few of his direct reports.<br>2. The president of my division primarily defines my division's "vision" – its basic purpose and general direction.<br>3. The president of my division determines and executes the strategy based upon analysis of the business situation. |
| SYMBOLIC | 1. The division leadership regularly challenges us with new goals and aspirations.<br>2. The division leadership has a "dream" about where this division will be in 10 years and does its best to communicate this sense throughout the organization.<br>3. The division leadership serves as personal example of the way we should behave. |
| RATIONAL | 1. Each year my division adopts a written strategic plan to guide our operating activities.<br>2. Strategic planning in my division is a formal procedure occurring in a regular cycle.<br>3. *We have a written mission statement that is communicated to employees.* [e]<br>4. Formal analysis of the business environment and our competitors form the basis for my division's strategic plan.<br>5. *Analysts play a major role in my division's strategy-making.* [e]<br>6. The strategy-making in my division is focused on systematic analysis, particular in the assessment of the costs and benefits of competing proposals.<br>7. In my division, the strategy-making is characterized by the integration of all relevant decisions and sub-strategies. |
| TRANSACTIVE | 1. Strategy is made on an iterative basis, involving managers, staff, and executives in an on-going dialogue.<br>2. Business planning in my division is ongoing, involving everyone in the process to some degree.<br>3. Most people in my division have input into decisions that affect them.<br>4. My division continually adapts its strategy based upon feedback from the market. |
| GENERATIVE | 1. Most people in my division are willing to take risks.<br>2. People are encouraged to experiment in my division so as to identify new, more innovative approaches or products.<br>3. Employees in my division understand what needs to be accomplished in order for the organization to survive and prosper. |

## Test for non-response bias: Results ANOVA by construct

| Construct | Details | F-Value | Sig. |
|---|---|---|---|
| EMPHASIS | Emphasis on meeting short term budgetary targets | .136 | .973 |
| LGO | Long-term growth orientation | 1.353 | .260 |
| LTO | Long-term time orientation | 1.194 | .304 |
| ORGINNO | Organizational innovativeness | 1.333 | .265 |
| ORGPRO | Organizational proactiveness | .500 | .607 |
| ORGRISK | Organizational risk-taking | .146 | .864 |
| SUPPORT | Management support | .929 | .296 |
| AUTONOMY | Work discretion/autonomy | .266 | .767 |
| REWARDS | Rewards/reinforcement | 1.019 | .362 |
| TIME | Time availability | .421 | .657 |
| BOUNDARIES | Organizational boundaries | .062 | .940 |
| ACHIEVE | Achievement orientation | .381 | .683 |
| INNOVATE | Preference for innovation | 1.972 | .141 |
| RISK | Risk propensity | 1.403 | .247 |
| EXPLOIT | Preference for exploitative innovation | .479 | .620 |
| EXPLORE | Preference for exploratory innovation | 1.200 | .302 |
| COMMAND | Command mode | .418 | .658 |
| SYMBOLIC | Symbolic mode | .778 | .460 |
| RATIONAL | Rational mode | 1.128 | .325 |
| TRANSACTIVE | Transactive mode | .134 | .874 |
| GENERATIVE | Generative mode | 1.936 | .146 |

In addition, none of the pair wise Bonferroni T-tests was significant at $p < .1$.

## Discriminant validity: Fornell/Larcker Criterion (AVE vs. squared correlations)

| Construct | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1: LGO | **0.633** | | | | | | | | | | | | | | | | | | | | |
| 2: EXPLOIT | 0.048 | **0.247** | | | | | | | | | | | | | | | | | | | |
| 3: EXPLORE | 0.100 | 0.213 | **0.250** | | | | | | | | | | | | | | | | | | |
| 4: LTO | 0.000 | 0.004 | 0.000 | **n/a** | | | | | | | | | | | | | | | | | |
| 5: ORGINNO | 0.038 | 0.010 | 0.013 | 0.000 | **0.528** | | | | | | | | | | | | | | | | |
| 6: ORGPRO | 0.004 | 0.000 | 0.007 | 0.008 | 0.301 | **0.432** | | | | | | | | | | | | | | | |
| 7: ORGRISK | 0.017 | 0.000 | 0.004 | 0.006 | 0.086 | 0.266 | **0.475** | | | | | | | | | | | | | | |
| 8: SUPPORT | 0.043 | 0.008 | 0.015 | 0.003 | 0.017 | 0.096 | 0.352 | **0.423** | | | | | | | | | | | | | |
| 9: AUTONOMY | 0.035 | 0.041 | 0.008 | 0.016 | 0.003 | 0.007 | 0.080 | 0.378 | **0.539** | | | | | | | | | | | | |
| 10: REWARDS | 0.010 | 0.013 | 0.017 | 0.004 | 0.032 | 0.047 | 0.081 | 0.259 | 0.227 | **0.498** | | | | | | | | | | | |
| 11: TIME | 0.024 | 0.016 | 0.000 | 0.013 | 0.003 | 0.000 | 0.047 | 0.075 | 0.079 | 0.030 | **0.373** | | | | | | | | | | |
| 12: BOUNDARIES | 0.023 | 0.052 | 0.051 | 0.028 | 0.000 | 0.000 | 0.023 | 0.073 | 0.047 | 0.134 | 0.029 | **0.272** | | | | | | | | | |
| 13: ACHIEVE | 0.040 | 0.016 | 0.103 | 0.015 | 0.011 | 0.001 | 0.002 | 0.002 | 0.024 | 0.015 | 0.000 | 0.035 | **0.312** | | | | | | | | |
| 14: INNOVATE | 0.023 | 0.031 | 0.052 | 0.023 | 0.003 | 0.001 | 0.027 | 0.033 | 0.099 | 0.054 | 0.039 | 0.027 | 0.326 | **0.347** | | | | | | | |
| 15: RISK | 0.033 | 0.024 | 0.065 | 0.017 | 0.003 | 0.000 | 0.034 | 0.029 | 0.035 | 0.004 | 0.023 | 0.001 | 0.266 | 0.360 | **0.375** | | | | | | |
| 16: COMMAND | 0.025 | 0.016 | 0.011 | 0.001 | 0.003 | 0.007 | 0.009 | 0.027 | 0.010 | 0.099 | 0.000 | 0.080 | 0.030 | 0.017 | 0.002 | **0.425** | | | | | |
| 17: SYMBOL | 0.082 | 0.023 | 0.033 | 0.003 | 0.002 | 0.066 | 0.208 | 0.248 | 0.147 | 0.226 | 0.063 | 0.091 | 0.039 | 0.035 | 0.009 | 0.399 | **0.461** | | | | |
| 18: RATIONAL | 0.057 | 0.048 | 0.067 | 0.011 | 0.000 | 0.017 | 0.069 | 0.132 | 0.103 | 0.205 | 0.042 | 0.086 | 0.075 | 0.077 | 0.018 | 0.359 | 0.613 | **0.529** | | | |
| 19: TRANSACTIVE | 0.082 | 0.062 | 0.066 | 0.003 | 0.000 | 0.045 | 0.170 | 0.312 | 0.236 | 0.258 | 0.059 | 0.100 | 0.060 | 0.078 | 0.043 | 0.152 | 0.570 | 0.629 | **0.471** | | |
| 20 : GENERATIVE | 0.043 | 0.008 | 0.026 | 0.005 | 0.001 | 0.041 | 0.263 | 0.490 | 0.224 | 0.198 | 0.070 | 0.056 | 0.018 | 0.055 | 0.073 | 0.084 | 0.460 | 0.339 | 0.570 | **0.476** | |
| 21: EMPHASIS | 0.008 | 0.004 | 0.019 | 0.011 | 0.004 | 0.007 | 0.003 | 0.000 | 0.011 | 0.000 | 0.000 | 0.086 | 0.039 | 0.010 | 0.003 | 0.029 | 0.028 | 0.019 | 0.014 | 0.000 | **0.580** |

The average variance extracted (AVE) for each construct is reported on the diagonal.

The squared correlations between the constructs (items weighted according to LISREL ML estimate, completely standardized solution) are reported below the diagonal.

**Discriminant validity: Formula for Average Variance Extracted (AVE)**

The average variance extracted (AVE) has been calculated following Homburg/Baumgartner (1998, p. 361) as:

$$AVE(\xi_j) = \frac{\sum_i \lambda_{ij}^2 \Phi_{jj}}{\sum_i \lambda_{ij}^2 \Phi_{jj} + \sum_i \theta_{ii}}$$

with

- $\lambda_{ij}$ the factor loadings from item i to construct j,
- $\Phi_{jj}$ the variance of the latent construct j, and
- $\theta_{ii}$ the variance of the error of item i.

## Results: Correlation coefficients (Pearson, equal weights for all items)

| Construct | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1: EMPHASIS | 1.000 | | | | | | | | | | | | | | | | | | | | |
| 2: LGO | .107* | 1.000 | | | | | | | | | | | | | | | | | | | |
| 3: LTO | -.100* | -.022 | 1.000 | | | | | | | | | | | | | | | | | | |
| 4: ORGINNO | .049 | -.186** | .021 | 1.000 | | | | | | | | | | | | | | | | | |
| 5: ORGPRO | -.055 | -.091 | .070 | .435** | 1.000 | | | | | | | | | | | | | | | | |
| 6: ORGRISK | .025 | .082 | .073 | .273** | .384** | 1.000 | | | | | | | | | | | | | | | |
| 7: SUPPORT | -.020 | .201** | .061 | .097 | .219** | .410** | 1.000 | | | | | | | | | | | | | | |
| 8: AUTONOMY | -.113* | .140** | .109* | .029 | .058 | .204** | .482** | 1.000 | | | | | | | | | | | | | |
| 9: REWARDS | -.002 | .065 | .066 | .150** | .165** | .214** | .391** | .398** | 1.000 | | | | | | | | | | | | |
| 10: TIME | -022 | .154** | .115* | .019 | -.003 | .138* | .188** | .189** | .110* | 1.000 | | | | | | | | | | | |
| 11: BOUNDARIES | .249** | .119* | -.167** | -.026 | -.014 | .064 | .122* | .041 | .170** | .018 | 1.000 | | | | | | | | | | |
| 12: ACHIEVE | .157** | .123* | .101* | .060 | -.024 | .030 | .035 | .093 | .093 | -.003 | .090 | 1.000 | | | | | | | | | |
| 13: INNOVATE | .072 | .109* | .111* | .011 | .012 | .108* | .166** | .219** | .196** | .132** | .112* | .383** | 1.000 | | | | | | | | |
| 14: RISK | .048 | .145* | .102* | .020 | .005 | .129* | .166** | .147** | .065 | .111* | -.014 | .354** | .445** | 1.000 | | | | | | | |
| 15: EXPLOIT | .051 | .172** | -.035 | .067 | -.016 | -.026 | .075 | .166** | .099 | .072 | .138** | .092 | .156** | .108* | 1.000 | | | | | | |
| 16: EXPLORE | .096 | .228** | -.036 | -.098 | -.079 | .026 | .092 | .074 | .076 | -.004 | .134** | .196** | .179** | .172** | .278** | 1.000 | | | | | |
| 17: COMMAND | .159** | .110* | -.001 | .047 | .047 | .004 | .106* | .039 | .186** | -.041 | .169** | .118* | .092 | -.033 | .096 | .037 | 1.000 | | | | |
| 18: SYMBOLIC | .117* | .217** | .056 | .035 | .176** | .300** | .349** | .282** | .364** | .156** | .159** | .147** | .149** | .090 | .099 | .100* | .397** | 1.000 | | | |
| 19: RATIONAL | .128* | .197** | .105* | .023 | .109* | .175** | .264** | .254** | .380** | .117* | .173** | .216** | .235** | .110* | .176** | .167** | .393** | .609** | 1.000 | | |
| 20: TRANSACTIVE | .091 | .261** | .034 | -.015 | .152** | .248** | .411** | .377** | .388** | .159** | .194** | .196** | .228** | .159** | .176** | .161** | .212** | .555** | .618** | 1.000 | |
| 21: GENERATIVE | .035 | .200** | .051 | .007 | .163** | .332** | .505** | .379** | .344** | .196** | .131** | .107* | .193** | .212** | .070 | .127* | .139* | .486** | .454** | .571** | 1.000 |

* Correlation is significant at the .05 level (two-tailed)

** Correlation is significant at the .01 level (two-tailed)

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