

***Supply Chain Management Influence:
Antecedents and Outcomes***

Niels Peter Patschke

**Inaugural dissertation for obtaining the academic degree
Doctor rerum politicarum (Dr. rer. pol.)**

WHU – Otto Beisheim School of Management

April 2017

First Advisor: Prof. Dr. Carl Marcus Wallenburg

Second Advisor: Prof. Dr. Lutz Kaufmann

Acknowledgements

The successful completion of this dissertation required support and guidance from many people.

First and foremost, I would like to express my sincerest gratitude to my academic advisor Prof. Dr. Carl Marcus Wallenburg for all the continuous support and encouragement I received during my doctoral studies. The joy and enthusiasm he demonstrated for my research were motivational for me along my entire Ph.D. pursuit. Further, his sincere guidance has been proven to be invaluable for my academic training. I also thank Prof. Dr. Lutz Kaufmann for assuming the role as my secondary advisor and, in particular, for his helpful comments and suggestions during the defense presentation of this doctoral project.

Next, I wish to express my deepest gratitude to Prof. Dr. Kai Hoberg. Without his encouragement I would not have embarked on the journey to pursue a doctoral degree. Further, his valuable advice and sincere feedback improved this dissertation noticeably.

A very special thank you to Torsten for the abundance of valuable discussions, but more importantly, for making this journey far more exciting than anticipated and a life lasting memory.

I would also like to thank all my fellow Ph.D. students at WHU and KLU for their feedback on my presentations during team meetings and for their help to pre-test this dissertation's survey. Apart from academics, the much loved team events at WHU with Andras, Bastian, Carl Marcus, Dennis, Florian, Josephine, Lukas, Nik, Simon, Timm, and Torsten and at KLU with Christoph, Florian, Jakob, Kai and Sebastian have led to many beloved experiences that have profoundly shaped my Ph.D. journey and made it truly memorable. Also, I would like to thank Tatjana for her kind support with all my questions and special requests that came along with being an external doctoral student. Apart from my academic community, I would like to thank all my friends who have been supporting me during the joyful and exciting past three years.

Without question, I am indebted to my girlfriend Anne-Sophie. Her support and care have truly enriched and brightened my time as a doctoral student.

And finally to my parents, Ingrid and Helmut, without whom none of this would have been possible. I dedicate this dissertation to them as an expression of my deepest gratitude for providing me with unconditional love, support, and strength during all pursuits in my life.

Overview of contents

Overview of contents	I
Table of contents	II
List of figures	V
List of tables	VI
List of abbreviations	VII
1 Introduction	1
2 Supply chain management influence and its antecedents.....	12
3 Supply chain management influence and new market performance	43
4 Influence differences between SCM and marketing.....	72
5 Conclusion	98
Appendices	105
References	133
Affirmation – statutory declaration	149

Table of contents

Overview of contents	I
Table of contents	II
List of figures	V
List of tables	VI
List of abbreviations.....	VII
1 Introduction	1
1.1 Motivation and research objectives	2
1.2 Outline of the dissertation	7
1.3 Methodology and sampling	8
1.4 Conceptual distinction between the SCM and logistics function.....	10
2 Supply chain management influence and its antecedents.....	12
2.1 Introduction	13
2.2 Background literature	15
2.3 Conceptual framework	16
2.3.1 Resource dependency theory	17
2.3.2 Strategic contingency theory.....	17
2.3.3 Hypothesis development	18
2.4 Methodology.....	27
2.4.1 Sampling and data collection	27
2.4.2 Tests for bias	27
2.4.3 Measurements	28
2.4.4 Reliability and validity of measures.....	30
2.4.5 Results.....	31
2.4.6 Moderation test	33
2.5 Discussion.....	37
2.5.1 Theoretical implications.....	37
2.5.2 Managerial implications.....	40
2.5.3 Limitations and future research.....	41
3 Supply chain management influence and new market performance	43
3.1 Introduction	44
3.2 Background literature	46
3.3 Conceptual framework	47
3.3.1 Expansion to new geographic markets	48

3.3.2	Information processing theory and new geographic market performance.....	49
3.3.3	Hypothesis development	51
3.4	Methodology.....	58
3.4.1	Sampling and data collection	58
3.4.2	Tests for bias	58
3.4.3	Measurements	59
3.4.4	Reliability and validity of measures.....	61
3.4.5	Results.....	62
3.4.6	Moderation test	64
3.5	Discussion.....	67
3.5.1	Theoretical implications.....	67
3.5.2	Managerial implications.....	69
3.5.3	Limitations and future research.....	70
4	Influence differences between SCM and marketing.....	72
4.1	Introduction	73
4.2	Conceptual framework	75
4.2.1	The role of SCM and marketing for supply chain performance	75
4.2.2	The different thought worlds of SCM and marketing.....	76
4.2.3	Conceptual foundation of departmental influence	79
4.2.4	Hypothesis development	80
4.3	Methodology.....	84
4.3.1	Sampling and data collection	84
4.3.2	Tests for bias	85
4.3.3	Measurements	85
4.3.4	Reliability and validity of measures.....	87
4.3.5	Results.....	88
4.4	Discussion.....	93
4.4.1	Theoretical and managerial implications	93
4.4.2	Limitations and future research.....	96
5	Conclusion.....	98
5.1	Main research findings	99
5.2	Limitations and further research.....	102
Appendices	105
Appendix 1-1	106
Appendix 1-2	108

Appendix 2-1 122
Appendix 3-1 126
Appendix 4-1 130
References 133
Affirmation – statutory declaration 149

List of figures

Figure 2-1: Conceptual model I	18
Figure 2-2: Johnson-Neyman plot of the conditional effect of TFL on SCM influence.....	36
Figure 2-3: Johnson-Neyman plot of the conditional effect of TAL on SCM influence across EUST when TAL and TFL are low	36
Figure 2-4: Johnson-Neyman plot of the conditional effect of TAL on SCM influence across EUST when TAL and TFL are high.....	37
Figure 3-1: Conceptual model II	48
Figure 3-2: Johnson-Neyman plot of the conditional effect of SCM influence on new market performance.....	64
Figure 3-3: Predicted value of new market performance across SCM influence for different levels of customer orientation.....	65
Figure 3-4: Johnson-Neyman plot of the conditional effect of SCM influence on new market performance when customer orientation is low	66
Figure 3-5: Johnson-Neyman plot of the conditional effect of SCM influence on new market performance when customer orientation is high	66
Figure 4-1: Conceptual model III.....	80
Figure 4-2: Johnson-Neyman plot of the conditional effect of influence difference for GM decisions on supply chain performance	90
Figure 4-3: Predicted value of SCP around its mean across influence difference for GM decisions.....	91
Figure 4-4: Johnson-Neyman plot of the conditional effect of influence difference for SCM decisions on supply chain performance	92
Figure 4-5: Predicted value of SCP around its mean across influence difference for SCM decisions.....	93

List of tables

Table 2-1: Measurement reliability and validity I.....	30
Table 2-2: Influence of functional subunits over strategic decisions I	31
Table 2-3: Hypothesis test results I – main effects	32
Table 2-4: Hypothesis test results I – moderation effects	34
Table 3-1: Influence of functional subunits over strategic decisions II.....	60
Table 3-2: Measurement reliability and validity II	62
Table 3-3: Hypothesis test results II.....	63
Table 4-1: Comparison of SCM and marketing thought worlds.....	78
Table 4-2: Influence of functional subunits over strategic decisions III.....	87
Table 4-3: Measurement reliability and validity III.....	88
Table 4-4: Hypothesis test results III	89

List of abbreviations

GM	General management
IPT	Information processing theory
RDT	Resource dependency theory
SCM	Supply chain management
SCP	Supply chain performance
SCPC	Supply chain professional competencies
SCT	Strategic contingency theory
TAL	Transactional leadership
TFL	Transformational leadership
TMS	Top management support

1 Introduction

1.1 Motivation and research objectives

In the last decades, global competition has enticed firms to engage in tightly coupled inter-firm networks (Bode et al., 2011) which have led to the evolution of suppliers and customers as co-creators of value (Gonzalez-Loureiro, Dabic, and Kiessling, 2015). This interconnectedness creates interdependence with exchange partners (Flynn, Koufteros, and Lu, 2016; Pfeffer and Salancik, 1978), increasing the probability of opportunities and threats, which can have a critical impact on firm performance (Defee and Stank, 2005; Slone, Mentzer, and Dittmann, 2007). The alignment of firm and supply chain strategy is important in meeting this challenge by specifying strategic responses to changes in the external environment, thereby enhancing the firm's performance (Ashenbaum et al., 2009; Slone et al., 2007; Stank, Davis, and Fugate, 2005).

Therefore, the need for involvement in and the ability to influence the firm's strategy development is particularly prevalent for the supply chain management and logistics (SCM)¹ function, leading to the focus of this dissertation: the influence of the SCM function within firms. I refer to this ability as *SCM influence*, based on the definition provided by Homburg, Workman, and Krohmer (1999, p. 2) for the influence of functional departments as:

"[...] the exercised power of the [...] subunit within a business unit, relative to other subunits, over activities important to the success of the business unit."

Against this background, the SCM function has received notable management attention as an important function in guiding firm strategy, importance that is expected to further increase (Gonzalez-Loureiro et al., 2015). Accordingly, establishing adequate SCM influence is a major concern for firms engaging in exchange relationships with the aim of value creation.

Contrasting its relevance, SCM influence as a concept has mostly been neglected by academia. Prior research has focused on investigating the effects of supply chain orientation on firm strategy development (Patel, Azadegan, and Ellram, 2013), the relationship of firm and supply chain strategy (Gonzalez-Loureiro et al., 2015; Stank et al., 2005), and the appointment of Chief Supply Chain Officers as part of a firm's top management team as sign of the SCM

¹ Most firms label the function that is responsible for logistics and SCM activities either as SCM or as logistics (Mentzer, Stank, and Esper, 2008). Consequently, the two terms were combined for brevity.

function's strategic importance (Roh, Krause, and Swink, 2016). However, thus far, only two academic studies have focused on a concept similar to SCM influence by examining logistics salience (Zacharia and Mentzer, 2004, 2007). Nevertheless, much remains unknown about the SCM function's ability to influence decisions of strategic importance to the firm and associated performance outcomes.

Despite the rather limited knowledge on SCM influence, research in organizational theory, management theory and, sociology has emphasized the role of departmental power and influence in understanding how managers make decisions (Enz, 1986; Hinings et al., 1974; Salancik and Pfeffer, 1974). In this regard, extant research has revealed that a subunit's influence can be described as a function of the resources it contributes to value creation (Pfeffer and Salancik, 1978). In this context, a subunit's power increases when it (1) controls scarce resources that other functional departments depend upon (Pfeffer, 1981) or (2) has the ability to cope with key environmental uncertainties for the organization and thereby reduces the impact of uncertainty for other departmental functions (Hinings et al., 1974).

Therefore, factors allowing to implement the mechanisms (1) and (2) are best suited to gain SCM influence. Prior research has identified transactional leadership and transformational leadership as effective means to handle uncertainty and provide information that can be deemed as a critical resource in various contexts (Bass et al., 2003; Jansen, Vera, and Crossan, 2009; Waldman et al., 2001). With respect to the two leadership styles, a debate exists on which leadership style allows for better coping with uncertainty (Bass et al., 2003; Vera and Crossan, 2004), whether the interplay of transactional leadership and transformational leadership is beneficial or detrimental (Jansen et al., 2009; Morhart, Herzog, and Tomczak, 2009), and how the effectiveness of both leadership styles are affected by environmental uncertainty (Bass et al., 2003).

In addition, further research has suggested that top management support to the SCM function plays a fundamental role in the relationship between SCM strategy and firm strategy (Chen and Paulraj, 2004; Patel et al., 2013; Sandberg and Abrahamsson, 2010), where top management support enables the alignment of functional and strategic objectives (Joshi, Kathuria, and Porth, 2003; Kearns, 2006). Thereby the SCM function can enhance the leverage of its supply chain capabilities to efficiently utilize resources and provide resource flexibility which allows to better cope with uncertainty. On a different note, supply chain professional competencies have been identified to enable particular effective internal and external

integration of exchange relationships (Ellinger and Ellinger, 2013) and thereby enhances the control over critical resources across the supply chain.

Although evidence for internal factors exists that could potentially drive SCM influence, prior research has mostly focused on external factors, such as internationalization, diversification (Roh et al., 2016), or the adaption of information technology (Zacharia and Mentzer, 2004) as drivers for the strategic importance of the SCM function. Accordingly, no empirical research has provided holistic insights into the antecedents of SCM influence internal to the firm. This leads to the first research question of this dissertation:

RQ1: Which are the main internal antecedents that affect SCM influence?

In contrast, when investigating the performance implications of SCM influence, examining its relationship with a firm's expansion strategy appears to be useful. First, expansion to new geographic customer markets is a key driver for the firm's long-term profitability (Chen, Hsu, and Chang, 2016), and second, the literature indicates the importance of SCM in successfully pursuing a geographic expansion strategy (Bode et al., 2011; Narasimhan and Kim, 2002; Roh et al., 2016).

Apart from the associated benefits of geographic expansion (Benito-Osorio et al., 2016; Lu and Beamish, 2004), this expansion also leads to increased uncertainties and complexities (Flynn et al., 2016; George, Wiklund, and Zahra, 2005; Hitt et al., 2006) giving rise to additional information processing needs which are rarely managed effectively (Galbraith, 1974). According to information processing theory, a firm can employ corrective mechanisms that aim at reducing the firm's information processing needs (e.g., creation of buffers or self-contained tasks) and/or increase the information processing capacity (e.g., investment in vertical information systems or creation of lateral relationships) (Busse, Meinlschmidt, and Foerstl, 2017; Flynn and Flynn, 1999; Galbraith, 1974) to establish information processing fit and thereby enhance new market performance. In the context of entering new markets, the role of the SCM function is particularly critical (Roh et al., 2016). As its abilities allow to facilitate information exchange and establish critical links to internal and external exchange partners (Narasimhan and Kim, 2002), the SCM function is capable of adequately managing the increased complexities and information processing needs of new markets. Yet, multiple departmental functions are involved in decision making pertaining to the implementation of such information processing mechanisms, as these decisions affect the firm's resource

allocation and organizational structure (Galbraith, 1974), where each function is guided by its own perspectives and objectives (Dougherty, 1992). Hence, sufficient SCM influence appears to be a prerequisite to shape decisions that provide information processing fit and thereby better address the challenges associated with a new market entry. This leads to the question whether a “the more, the better” approach is beneficial or if other aspects possibly represent a boundary for adequate SCM influence.

In fact, bounded rationality (Galbraith, 1973) and equivocality (Daft and Weick, 1984) potentially hinder a “the more (SCM influence), the better” approach. Bounded rationality denotes the “limitations in experience, [and] myopic perspectives” (Swink and Schoenherr, 2015, p. 70) of functional decision makers that causes certain limitations in information interpretation and application. Equivocality is present under conditions of unclear and ambiguous information that requires sense-making to establish a unified understanding among decisions makers (Swink and Schoenherr, 2015). Therefore, instead of limiting this research to only SCM influence, this dissertation also views the dispersed influence across other internal departmental functions and its possible effects on new market performance. This undertaking is motivated by the finding of Krohmer, Homburg, and Workman (2002) that such dispersion of influence increases decision making effectiveness and its subsequent outcomes.

In addition, changing customer requirements can be deemed as a key source of uncertainty when entering new markets (Moser, Kuklinski, and Srivastava, 2017), where customer orientation is particularly useful in information gathering, analysis, and interpretation allowing for anticipating changes in demand requirements (Grawe, Chen, and Daugherty, 2009; Kohli and Jaworski, 1990; Narver and Slater, 1990). Hence, as a result of high customer orientation the SCM function is possibly better equipped to specify mechanisms that establish information processing fit. Conversely, no research has explored this avenue thus far. In sum, these gaps collectively lead to the second research question of this dissertation:

***RQ2:** What effects do SCM influence, the dispersion of influence, and the moderating role of customer orientation have on new market performance?*

To further deepen the understanding of the performance implications of SCM influence, it is compared to the influence of other departmental functions. The influence of the marketing

and sales² (marketing) function serves as a useful counterpart, as extant research views the integration of SCM and marketing perspectives as a source for performance differentials (Kozlenkova et al., 2015).

Supply chain performance represents an important performance outcome as firms increasingly compete on a supply chain level (Fawcett and Waller, 2013; Hult, Ketchen, and Arrfelt, 2007a; Kozlenkova et al., 2015). According to the framework developed by Fawcett and Waller (2013), supply chain performance depends on a firm's ability to define meaningful value propositions and subsequently deliver this value to the end customer. While marketing can be assumed to be well-positioned to define customer value propositions (Jaworski and Kohli, 1993; Kohli and Jaworski, 1990), the SCM function has pronounced capabilities in defining the firm's ability to deliver the value (Fawcett and Waller, 2013). In this dissertation, these distinct areas are reflected in the conceptualization of supply chain performance by distinguishing between general management decisions which define the firm's ability to create a value proposition and SCM decisions which determine the firm's value delivery abilities.

However, before activities in support of value propositions and delivery can be established along the entire supply chain (Esper et al., 2010b; Green, Whitten, and Inman, 2012), the strategic decisions that define both the firm's value proposition and value delivery must be integrated among functions (Christopher and Ryals, 2014). This integration of strategic decisions largely depends on the influence level of the corresponding departmental functions (Homburg et al., 1999), where each function is guided by its own objectives and perspectives (Engelen, 2011; Oswald, Brettel, and Engelen, 2012), also referred to as departmental thought worlds (Douglas, 1987).

And while prior research provided mixed results concerning the question if differing thought worlds enhance or impair performance outcomes (Dougherty, 1992; Homburg and Jensen, 2007; Niranjana et al., 2014) and extensively investigated the interplay among SCM and marketing (Daugherty et al., 2009; Ellinger, Keller, and Hansen, 2006; Fugate, Flint, and Mentzer, 2008; Mentzer et al., 2008), the question which functional department should receive more influence, SCM or marketing, remains unexplored. Combining the aspects of departmental influence and departmental thought worlds leads to the third research question of this dissertation:

² Sales can be considered as a core process within a broader marketing conception (Lusch, Vargo, and Tanniru, 2010; Mentzer et al., 2008). Consequently, the two terms were combined for brevity.

***RQ3:** What effects do influence differences between the marketing function and supply chain management function have on supply chain performance?*

1.2 Outline of the dissertation

This dissertation consists of five chapters. After this introductory chapter, chapter 2 to 4 address the research questions outlined above. Of these, each chapter represents a distinct essay, all of which have been written with the aim for submission and consideration at international supply chain management journals. Whereas chapter 2 is concerned with the internal antecedents of SCM influence, chapter 3 and 4 focus on different facets of SCM influence and its relationship with performance outcomes. Chapter 3 views the effect of SCM influence, and the moderating role of customer orientation, as well as the dispersion of influence on new market performance, and chapter 4 covers the relationship of departmental influence differences between the SCM and the marketing function with supply chain performance. This dissertation is concluded by chapter 5 which provides a discussion of the main research findings and implications for further research.

Chapter 2 addresses research question 1 and examines possible internal antecedents to SCM influence. First, an overview of prior research on functional departmental influence is presented. This is followed by the development of a conceptual framework based on resource dependency theory and strategic contingency theory, explaining that a functional department can increase its influence through (1) its ability to provide access to scarce resources upon which the firm relies; and (2) the ability to cope with the uncertainty a firm has to face. Next, it is outlined how these mechanisms are affected by the proposed antecedents: transactional leadership and transformational leadership of SCM executives, the level of top management support that the SCM function receives, and supply chain professional competencies within the SCM function. The corresponding hypotheses are tested, followed by discussion of the theoretical and managerial implications, as well as avenues for further research.

Chapter 3 addresses research question 2 and considers the relationship of SCM influence and the dispersion of influence with new market performance. The objective of this paper is to clarify which degree of SCM influence and dispersion of influence is most beneficial to enhance new market performance. First, based on information processing theory the effects of SCM influence and dispersion of influence on new market performance are conceptualized. These effects depend on the adequate balance of the firm's information processing needs and

information processing demands, as well as on the effects arising from bounded rationality and equivocality. Next, the moderating role of customer orientation on the relationship of SCM influence and new market performance is discussed. Also, the relationship of new market performance and firm performance is viewed. Finally, the developed hypotheses are tested and a discussion of the implications for theory and practice is presented.

Chapter 4 addresses research question 3 and discusses the role of differences in functional influence between the SCM function and the marketing function and its relationship with supply chain performance. First, the individual roles of the SCM and marketing function for supply chain performance are examined. Then, a conceptual framework is developed by combining the concepts of departmental influence and departmental thought worlds. Next, it is discussed how influence differences between the two functional departments impact supply chain performance. Developed hypotheses are tested and findings are discussed considering their implications for academia and practice.

1.3 Methodology and sampling

To investigate the research questions presented above, this dissertation followed a quantitative research methodology. For each research question in this dissertation, first, a conceptual framework was developed guided by theory and extensive literature review, and second, the corresponding hypotheses were tested using structural equation modeling and regression analysis based on empirical data. The empirical data was compiled by means of a large-scale web-based survey in the autumn of 2015. A proprietary university data base was used to draw the corresponding sampling frame. In sum, more than 2,200 invitations were sent to managers with past or present experience in supply chain management, who were identified as key informants (Phillips and Bagozzi, 1986), as the realm of strategic decision making mostly corresponds to the responsibility of managerial tasks. In total, 308 responses were received, resulting in a response rate of 13.8%. Various filter criteria were applied with the aim of establishing a suitable data set for this dissertation's context of strategic decisions. As a result, 32 questionnaires were discarded leading to a final data set of 276 responses. Questionnaires were discarded if respondents indicated limited knowledge about the SCM function. This was tested via the following statement: "I have extensive knowledge about the supply chain management and logistics function in my business unit" using a 7-point Likert scale with 1 = strongly disagree and 7 = strongly agree as anchors. All questionnaires with scores between 1 and 2 were discarded. Further, questionnaires were excluded from the data set if respondents

indicated limited business experience (i.e., less than 3 years), limited experience with their current company (i.e., less than one year) or showed unengaged response behavior (i.e., respondents answered nearly all questions with the same value, such as 1).

Of the final data set, a combined 71.0% of respondents held a position in middle management (e.g., vice president or head of department) or higher and 80.8% of respondents demonstrated more than 10 years of business experience, indicating adequate fit of the sample for this dissertation – see Appendix 1-1. Respondents belonging to the SCM or logistics function comprised with 73.9% the majority of the utilized data set. While the data set demonstrated a great variety across industries, it indicated a certain focus with 92.7% of respondents from corporations with more than 1,000 employees and 74.2% of respondents from German speaking countries. Chapter 2 to 4 each contain detailed information about the data and the utilized methodology.

For survey development and refinement, a two-step process was followed. First, a survey instrument was developed based on existing scales derived from an extensive literature review and refined based on the insights gathered from nine-in-depth interviews with subject matter experts from various industries (Dunn, Seaker, and Waller, 1994). In a second step, a panel of ten supply chain researchers and ten different practitioner experts assessed the initial survey instrument with respect to structure, clarity, ambiguity, and completeness (Chen and Paulraj, 2004; Dunn et al., 1994). This iterative process was only stopped after no further changes were recommended to improve the survey. By doing so, it was insured that the survey was applicable and understandable in the context of supply chain management and also of interest to the industry's decision makers. The final survey instrument is displayed in Appendix 1-2.

1.4 Conceptual distinction between the SCM and logistics function

Within academia there is a long standing debate what SCM specifically entails and how it can be distinguished from other business disciplines such as logistics, purchasing, and operations (Larson and Halldorsson, 2004; Mentzer et al., 2008; Zacharia, Sanders, and Fugate, 2014). Accordingly, also the definition of the functions that house these respective disciplines within a company are diverging (Zacharia et al., 2014). Especially as SCM is a phenomenon that touches various disciplines it will be characterized differently by different functions: marketing views it as marketing channels, purchasing as strategic procurement, and logistics as integrated logistics (Mentzer et al., 2008).

More recently, Ellram and Cooper (2014) have described five academic and practitioner perspectives of the term “supply chain management” in order to advance the understanding of its use in the academic domain - the perspectives are “SCM as a process, a discipline, a philosophy, a governance structure, and a function” (Ellram and Cooper, 2014, p. 10). Within this dissertation the focus is set on the philosophy and function perspectives for two main reasons. First, a philosophy perspective is reflected by this dissertation’s detailed analysis how the firm integrates supply chain implications in the decision making process of the firm at the highest level and how this integration can lead to competitive advantage. Second, a functional perspective describing the specific tasks a group of people carries out with a respect to inter-organizational and intra-organizational (e.g., among logistics, operations, and finance) coordination of activities along the value chain, as this dissertation investigates the influence of the SCM function.

In this dissertation these SCM activities are defined as the activities that involve the strategic and tactical planning and coordination activities across multiple entities of the supply chain (Roh et al., 2016; Zacharia et al., 2014). This encompasses the coordination of suppliers, the company itself, and its customers (Christopher, 2016). In this sense a prototypical SCM function carries out a number of activities to fulfill its coordination tasks: design and plan the supply chain, define the sourcing and distribution strategies from an inbound and outbound supply point of view, and develop a long-term supply and demand plan, which is further detailed by a mid-term (tactical) inventory management per supply chain entity.

In contrast, logistics activities will be viewed in this dissertation as the operational aspect of “inventory management, warehousing, packaging, distribution, transportation, customer service, [...] production planning and demand forecasting” (Larson and Halldorsson,

2004, p. 20). In practice, companies often neglect to follow the clear distinction between SCM and logistics activities. As a consequence, some companies carry out SCM and logistics activities in the same function, some carry out part of the SCM activities in a function called logistics and other carry out some of the logistics activities within a function called SCM (Mentzer et al., 2008). To reflect this corporate reality it was decided to combine the SCM and logistics function(s) within the survey-based data collection as suggested by Mentzer et al. (2008).

2 Supply chain management influence and its antecedents³

³ This chapter is based on the unpublished manuscript by Patschke, Wallenburg, and Hoberg (2017a): “The Influence of the Supply Chain Management and Logistics Function within Firms: Insights from Resource Dependency and Strategic Contingency Perspectives”.

2.1 Introduction

Global competition has enticed firms to engage in tightly coupled inter-firm networks (Bode et al., 2011), which has amplified the emergence of supply chain management and logistics (SCM)⁴ as an important strategic function for corporations today (Roh et al., 2016). The focus of the SCM function is to build critical links to exchange partners, making suppliers and customers co-creators of value (Gonzalez-Loureiro et al., 2015). At the same time, this interconnectedness creates interdependence with exchange partners (Flynn et al., 2016; Pfeffer and Salancik, 1978; Touboulic, Chicksand, and Walker, 2014), increasing the probability of opportunities and threats, which can have a substantial impact on firm performance (Defee and Stank, 2005; Slone et al., 2007). Here, the alignment of firm and supply chain strategy is pivotal in enabling a company to quickly specify strategic responses to changes in the external environment, thereby enhancing its performance (Ashenbaum et al., 2009; Slone et al., 2007; Stank et al., 2005). In this context, we expect that the SCM function is involved in and, more importantly, has the ability to influence decisions that are of strategic importance to the firm – we refer to this ability as *SCM influence*.

To date, SCM research has already made important contributions to understanding how the concept of SCM is considered in relation to the firm's strategy development. It has, for example, focused on explaining the relationship between firm strategy and SCM strategy (Stank et al., 2005), the effects of supply chain orientation on strategy development (Patel et al., 2013), and the emergence of chief supply chain officers as an indication of the SCM function's strategic importance (Roh et al., 2016; Wagner and Kemmerling, 2014). However, very little is known about the ability of the SCM function as an organizational subunit to influence decisions that are of strategic importance to the firm. To our knowledge, the work of Zacharia and Mentzer (2004, 2007) is currently the only academic work to focus specifically on a concept similar to SCM influence by looking at logistics salience. They have investigated external and internal drivers, such as the adaptation of information technology and cross-functional integration (Zacharia and Mentzer, 2004). Despite this contribution, much remains unknown about how the SCM function may increase its influence. In particular, the concept of logistics salience has limitations, in so far as it examines the degree of importance and advantage

⁴ Most firms label the function that is responsible for logistics and SCM activities either as SCM or as logistics (Mentzer et al., 2008). Consequently, we have combined the two terms for brevity.

provided by logistics generally, but does not measure the influence relative to other functions. In addition, Zacharia and Mentzer (2004) argue that several additional drivers and contextual factors have not been considered and should be included in future research. Accordingly, the purpose of this study is to address this research gap by developing and testing a theoretical model that explains how, and under what circumstances, SCM functions increase their influence.

We draw on resource dependency and strategic contingency perspectives to develop hypotheses predicting SCM influence. The premise of *resource dependency theory* (RDT) is to predict a subunit's influence as a function of the resources that the subunit contributes (Pfeffer and Salancik, 1978), where subunits that control critical and/or scarce resources, have more power (Pfeffer, 1981). Most of these resources originate from the firm's external environment (e.g., from suppliers, creditors, customers) and therefore increase environmental uncertainty through interdependence with exchange partners (Anderson, 1982). Interlinked with RDT, *strategic contingency theory* (SCT) posits that an organizational subunit's ability to cope with key environmental uncertainties predicts its influence, as coping reduces the impact of uncertainty on other activities in the organization (Hickson et al., 1971).

Accordingly, two relevant fields for further research exist: external factors and internal factors that describe how the SCM function can increase its control over critical resources and better reduce uncertainties for other corporate subunits' task environments. Comparing these two fields, much less is known about internal factors and their relationship to SCM influence than about external factors (Roh et al., 2016; Zacharia and Mentzer, 2004). This is the reason why we address the following research question:

RQ1: *Which are the main internal antecedents that affect SCM influence?*

In this respect we propose four main antecedents that enable the SCM function to better manage critical resources and cope with key uncertainties, thereby increasing its influence: transactional leadership (TAL) and transformational leadership (TFL) of the highest-ranking SCM executive, top management support (TMS) to the SCM function, and supply chain professional competencies (SCPC).

A particular focus of this research will be on strategic leadership, where the framework of TAL and TFL (Avolio, Bass, and Jung, 1999; Bass, 1985) is regarded as an effective means to handle uncertainty in various contexts (Bass et al., 2003; Jansen et al., 2009; Waldman et al.,

2001). Here, topics that are widely debated are whether TAL or TFL is more suitable for coping with uncertainty (Bass et al., 2003; Vera and Crossan, 2004), whether the interplay of the two styles is complementary or detrimental (Jansen et al., 2009; Morhart et al., 2009), and how both relate to the specific context in which they are applied by managers (Bass et al., 2003). This debate will be reflected in our study and leads to the second set of research questions:

RQ2a: How does environmental uncertainty moderate the effect of transactional leadership and transformational leadership on SCM influence?

RQ2b: How does the interplay of transactional leadership and transformational leadership affect SCM influence?

Addressing RQ2a–b, the findings of our research offer interesting insights into the role and impact of the highest-ranking supply chain management executives on firm strategy development via different leadership styles. The empirical results indicate that TAL increases SCM influence, whereas TFL does not, especially in uncertain environments. However, in cases where the top supply chain executives demonstrate very high levels of TAL, an interaction effect with TFL can be observed that leads to a positive effect on SCM influence. In essence, this underscores the idea that supply chain executives who understand how to use these two leadership styles in combination will be more successful at influencing firm strategy. Thus, this study contributes to the growing dialogue on how supply chain executives and their respective skills could be “difference makers” and how these impact strategic decisions and associated outcomes (Thornton, Esper, and Autry, 2016; Villena, Gomez-Mejia, and Revilla, 2009).

2.2 Background literature

Influence of Functional Company Departments. Functional departments represent organizational subunits which are commonly used by firms to organize activities and to group employees together that work on similar tasks and require related knowledge and skills (e.g., Finkelstein, 1992; Kenny and Wilson, 1984). Each function differs in its objectives and resource requirements, and potentially varies in its importance for achieving the firm’s overall objectives (Feng, Morgan, and Rego, 2015). As a result, each function usually has its own agenda that deviates from those of other functions and potentially from the firm’s overall goals (e.g., Cyert and March, 1963; Greenwood and Hinings, 1996). This situation leads to the emergence of departmental power to influence negotiations over strategic decisions (e.g., Perrow, 1970;

Pfeffer, 1981) and to evoke changes in the attitudes or behaviors of other functional units, where the degree to which this power is successfully exercised is referred to as departmental influence (Homburg et al. 1999).

Consequently, it is standard to view strategic decision making when studying the influence of functional departments (Enz, 1986; Homburg et al., 1999; Verhoef and Leeflang, 2009). Strategic decisions can be defined as those that are “important, in terms of the actions taken, the resources committed, or the precedents set” (Mintzberg, Raisinghani, and Theoret, 1976, p. 246) and, as such, they constitute the most crucial decisions that managers face (e.g., new product development) (Eisenhardt and Zbaracki, 1992).

With respect to departmental influence, marketing as a function has been most extensively researched, particularly regarding its influence and the outcomes that result from this influence (Feng et al., 2015; Homburg et al., 2014; Homburg et al., 1999; Krohmer et al., 2002; Verhoef and Leeflang, 2009), while only limited research has investigated the antecedents of this influence (Homburg et al., 1999; Verhoef and Leeflang, 2009). Homburg et al. (1999) found that the influence of marketing increases in the presence of institutional factors (e.g., a CEO with a background in marketing), as well as when internal and external contingency factors necessitate increased resource contributions by marketing (e.g., strong market-related uncertainty). Verhoef and Leeflang (2009) introduced the marketing function’s innovativeness and its ability to render transparent the impact of marketing expenditure on sales as further internal antecedents. Yet, these factors are specific to the marketing function and thus limited in their applicability to other functions such as the SCM function viewed by this study.

2.3 Conceptual framework

Prior management research has identified two suitable theoretical lenses to explain departmental influence: RDT (Homburg et al., 1999; Pfeffer and Salancik, 1978; Verhoef and Leeflang, 2009) and SCT (Hickson et al., 1971; Homburg et al., 1999; Pfeffer and Salancik, 1978).

Based on these theories, two central mechanisms can be identified that largely determine how strong the influence of a function will be on the strategic decisions in the company: (1) its ability to provide access to scarce resources upon which the company relies; and (2) the ability to cope with the uncertainty that the company has to face. After presenting the theories, we will outline how these mechanisms are impacted by our four focal antecedents: TAL and TFL of the

highest-ranking SCM executive, the level of top management support that the SCM function receives, and supply chain professional competencies within the SCM function.

2.3.1 Resource dependency theory

RDT posits that organizations interact with their environment to gain access to resources (Singh, Power, and Chuong, 2011). The underlying assumptions are that organizations are rarely self-sufficient regarding the required resources, thereby leading to dependency on exchange partners (Heide, 1994; Pfeffer and Salancik, 1978); and that organizations seek to reduce uncertainty and manage this dependency by carefully shaping their relationships with exchange partners through formal and semi-formal means (Ulrich and Barney, 1984). Here, power will accrue to those organizational units upon which other actors depend, where the degree of dependency is determined by the importance of the resource, discretion over resource allocation and use, and concentration of resource control (Pfeffer and Salancik, 1978). Hence, subunits that provide “valued resources, with no close substitutes, which others are dependent on have more power and influence than other subunits” (Homburg et al., 1999, p. 2).

Firms increasingly engage in exchange relationships in the search for complementary resources (Dyer and Singh, 1998; Enz and Lambert, 2015; Gonzalez-Loureiro et al., 2015). Here, the SCM function will increase its influence when it facilitates access to scarce resources, through exchange relationships, that other functions depend upon, such as manufacturing technology, components and raw materials, and access to new geographic markets. In other words, the SCM function acts as an agent for other functions to access and utilize critical resources in the firm’s environment.

2.3.2 Strategic contingency theory

Hickson et al. (1971) developed SCT to predict the power and influence of various subunits within firms. The central tenet of SCT is that a subunit will gain influence when it is able to reduce uncertainties for the firm. The more central the uncertainties to the firm and the more irreplaceable the subunit is in reducing the uncertainties, the more this subunit’s influence will increase (Hickson et al., 1971; Pfeffer and Salancik, 1978). Hickson et al. (1971) describe this mechanism as coping with key uncertainties. Coping gives power to subunits, since it reduces the impact of uncertainty on the activities of other subunits and on their specific task environments.

In the literature (Hickson et al., 1971; Hinings et al., 1974), three distinct coping mechanisms are described, that is: coping by prevention, by information, and by absorption. Coping by prevention is, for example, present when a subunit counters supply fluctuations by securing spot market capacity; coping by information when a subunit forecasts customer demand fluctuations; and coping by absorption when an increase in demand is countered by novel production and delivery models. Overall, we propose that the SCM function will enhance its influence when it employs mechanisms that enable the firm to cope better with the firm’s key uncertainties.

2.3.3 Hypothesis development

Building on RDT and SCT, we study the impact that the TAL and TFL of SCM executives, the level of top management support that the SCM function receives, and supply chain professional competencies within the SCM function have on SCM influence. Throughout this study we employ the two central mechanisms of *resource accessing* and *coping with uncertainty* that increase SCM influence, as provided by RDT and SCT. Our conceptual model is presented in Figure 2-1, with each hypothesis developed in detail thereafter.

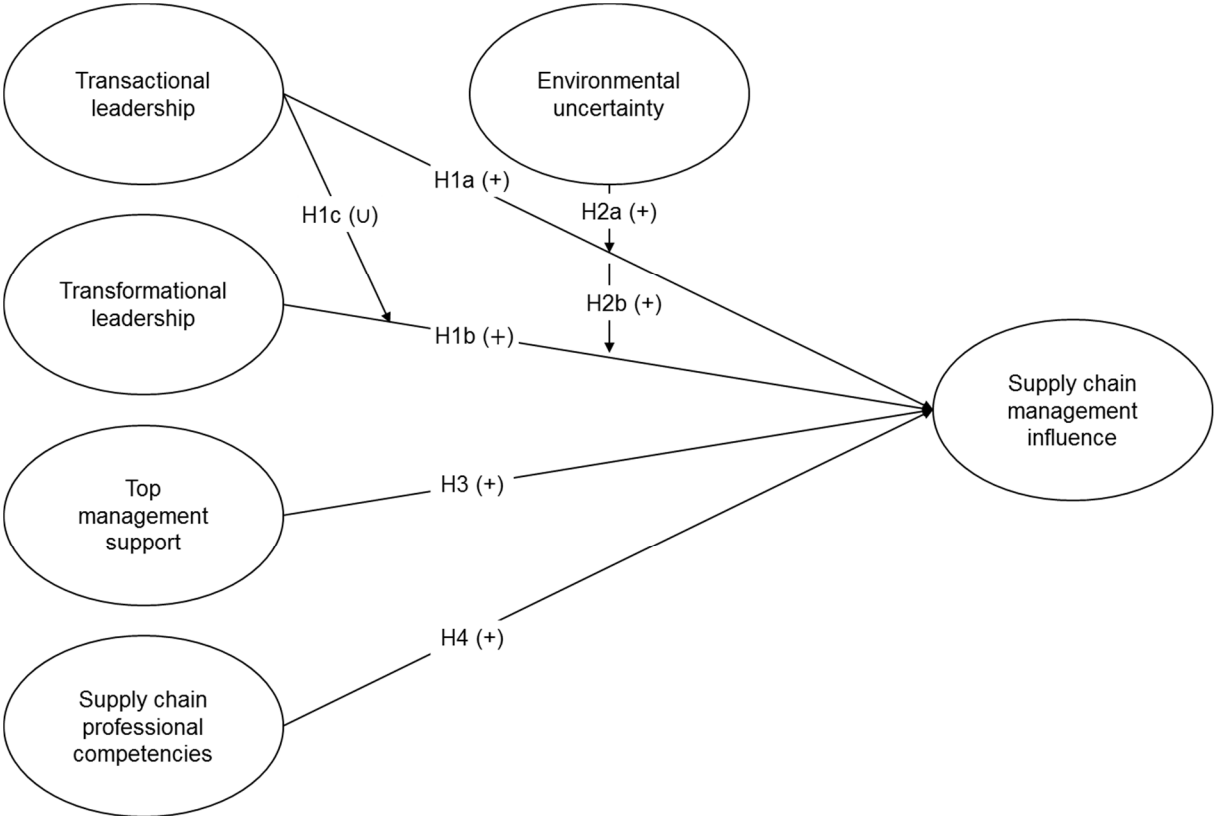


Figure 2-1: Conceptual model I

The Role of Strategic Leadership on SCM Influence. One of its general tenets is that strategic leadership provides effective mechanisms to cope with environmental uncertainty and that it provides information which serves as a valuable and potentially critical resource (Bass et al., 2003; Jansen et al., 2009; Vera and Crossan, 2004; Waldman et al., 2001). The literature suggests that strategic leadership has two components, TAL and TFL, and analyzes the impact of the leadership styles of executives on organizational outcomes (Avolio et al., 1999; Bass, 1985; Jansen et al., 2009; Vera and Crossan, 2004; Waldman et al., 2001). The primary tenet of TAL has been initiating structures by exemplifying behaviors that define, direct, and structure the roles and activities of subordinates in relation to the attainment of subunit goals (Keller, 2006) through the formulation of standards in the form of transparent processes, policies and procedures, as well as clear channels of communication (Hult, Ketchen, and Chabowski, 2007b; Jansen et al., 2009). In contrast, TFL focuses on charismatic leadership, in which colleagues, superiors, and subordinates are inspired to perform beyond the normal expectations through commitment to a vision and perception of competence provided by their leader (Bass, 1985; Pawar and Eastman, 1997; Yukl, 2013). TAL and TFL are not mutually exclusive. Instead, leaders should be able to employ leadership styles depending on the prevalent circumstances (Vera and Crossan, 2004).

It can be concluded that the leadership behavior of high-ranking SCM executives has an impact on both central mechanisms stipulated by RDT and SCT (resource accessing and coping with uncertainty) and thus affect SCM influence. However, contradictory findings exist in the literature about which leadership style is more effective in coping with uncertainty. Depending on the context, some studies find that TFL is beneficial, while TAL is detrimental, to coping with uncertainty (Hult et al., 2007b; Jansen et al., 2009), that TFL may augment the positive effect of TAL (Bass et al., 2003), and that TAL at low and high levels may suppress the effect of TFL (Morhart et al., 2009). By contrast, literature describing how strategic leadership may positively impact a firm's ability to better manage critical resources via improving external and internal integration is scarce (Driedonks, Gevers, and van Weele, 2010; Thornton et al., 2016). Leadership research to date has considered a variety of contexts (e.g., financial services, military, and procurement) and outcome variables (e.g., innovation, financial performance, and team performance). Yet, the relationship between leadership styles and SCM influence remains unclear.

Transactional Leadership. In line with the first central mechanism, a top SCM executive that demonstrates TAL through the initiation of structure has a significant positive

effect on establishing external exchange relationships (Driedonks et al., 2010), thereby managing critical resources from the firm's environment more effectively.

Based on the characteristics of TAL, we conclude that a transactional leader will establish clear roles, processes, and procedures to establish superior exchange relationships with existing and new partners. This helps external partners, for example suppliers, to align their processes quickly for the exchange of relevant information with the firm's SCM function. Furthermore, information exchange via clear channels of communication fosters an understanding of the changing requirements of supplier, manufacturer and customer operations. In turn, this enhanced understanding allows to proactively align and implement changes in the supply chain (Flynn, Huo, and Zhao, 2010). As a consequence of providing the above advantages, we can conclude that TAL enables the SCM function to better manage critical resources in multiple respects. First, the SCM function is more likely to effectively bundle existing critical resources and create synergies (e.g., centralizing planning activities and consolidating supply and delivery networks), because clear roles and procedures lead to harmonized and efficient ways to manage globally dispersed and diversified supply chains. Second, the SCM function is more likely to gain access to new critical resources upon which other functions depend for future growth (e.g., distribution centers in new markets or technology such as unattended vehicles and drones to provide new delivery models to sales organizations). Here, the enhanced understanding of changing requirements via information exchange aids the SCM function in identifying which new resources will be critical in the future. Third, being able to quickly establish exchange relationships with new suppliers provides value to the procurement function, as it increases the negotiating power over existing suppliers through the realistic threat of switching to new suppliers while it simultaneously enlarges options for the research and development function in collaborative product development with new suppliers.

With respect to the second central mechanism (i.e., coping with uncertainty), SCM executives demonstrating TAL will establish mechanisms that improve the ability to cope with uncertainty by prevention, information, and absorption: in terms of *coping by prevention*, a transactional leader will continuously monitor the supply chain via metrics and take corrective action when needed (Hult et al., 2007b; Vera and Crossan, 2004) by using the established communication channels to address relevant problems promptly. In terms of *coping by information*, a transactional leader establishes procedures and processes that formalize the exchange of knowledge and information with exchange partners, and ensures that the gathered

information is centrally stored in a business data warehouse and analyzed and interpreted in a meaningful way. In terms of *coping by absorption*, the previous literature identifies TAL as being particularly relevant in maintaining the status quo and ensuring continuous operations (Bass et al., 2003; Jansen et al., 2009), thus leading to the creation of contingency plans. Clearly defined contingency plans enable the SCM function to react promptly in the face of serious crisis and to uphold supply chain operations.

Transformational Leadership. TFL addresses the issue that SCM visions remain fuzzy in most organizations (Fawcett, Magnan, and McCarter, 2008; Perez-Franco et al., 2016) and that many executives do not fully recognize the importance of the SCM function because of the struggle the SCM function has in effectively communicating its implications for the firm's strategic directives (Ellinger et al., 2011). The highest-ranking SCM executives with strong TFL instill a sense of urgency within the top management team and with executives of other functions regarding the value of supply chain practices. Transformational leaders foster effective communication with stakeholders and therefore enable effective decision making (Driedonks et al., 2010). They clearly communicate the potential benefits of adopting SCM practices for other functions and how an effective management of the supply chain can reduce uncertainties in their respective task environment. As a result, those functions will realize their dependence on the SCM function, which according to RDT, enhances the influence of the SCM function. Furthermore, by reframing problems, taking risks, and approaching old situations in new ways, TFL enhances followers' (i.e., people within the organization that follow the opinions of the transformational leader) willingness to address more difficult challenges in the firm's environment (Bass et al., 2003). This can reduce uncertainty by novel means and is particularly helpful in response to structural changes (Vera and Crossan, 2004; Waldman et al., 2001), such as a broader change of industry dynamics (e.g., a change in customer preferences). However, TFL, with its focus on challenging follower's assumptions, can also be perceived as distracting and superfluous and therefore rendered dysfunctional, especially when there is no perception of a need for change (Jansen et al., 2009; Vera and Crossan, 2004; Waldman et al., 2001; Yukl, 2013).

Interplay of Strategic Leadership. Previous research has offered mixed results regarding the interplay of TAL and TFL. Two studies have demonstrated that TAL is an indispensable basis for effective leadership (Bass, 1985; Bass et al., 2003) and that TFL builds on the effects of TAL (Waldman et al., 2001). In other words, even a highly transformational leader would not be effective unless he or she also initiates structures through TAL. Morhart et

al.'s (2009) study, within a marketing context, found that extreme TAL behaviors (i.e., either very low or very high) neutralize any potential effect of TFL, whereas moderate TAL levels catalyze TFL so that the effects of TFL have an inverse U-shape. This raises the question, how TAL and TFL behaviors of top SCM executives interact and whether TAL here serves as a “neutralizer” or “catalyzer” for TFL.

Contrary to Morhart et al. (2009), we conclude that the interplay of TAL and TFL will be characterized by a normal U-shaped relationship. At very low levels of TAL, the SCM function performs poorly at providing other functions with access to valued external resources and is limited in its capabilities to cope with key uncertainties. In this case, TFL cannot compensate for the missing foundation that TAL behavior should provide. When top supply chain executives start exhibiting TAL and begin initiating formal management structures, the effect of TFL on SCM influence will initially decrease. At first, this may sound counterintuitive, because structure builds the basis for effective TFL, as outlined by Bass et al. (2003). Yet, the initial rudimentary structures established at low levels of TAL are not sufficient to realize the benefits promised by the pronounced TFL behavior of SCM executives. Here, TFL behavior actually creates management expectations that will not be met. Against this unreliability, and in line with RDT, other functions will seek to lower their dependence on the SCM function and give SCM less influence over strategic decisions.

By contrast, at elevated levels of TAL, TFL behavior functions against the backdrop of an already influential SCM function (gained via TAL). For instance, the highest-ranking SCM executive can use past examples of successfully established external exchange relationships and the ability to cope with uncertainty to underscore the value proposition of the SCM function which leads to increased trust of other functions in SCM. Therefore, TFL and TAL behaviors can be considered mutually reinforcing. The result of this dynamic is a U-shaped moderation by TAL on the relationship between TFL and SCM influence. In conclusion, the following is hypothesized:

H1a: *Transactional leadership of the top supply chain executive has a positive effect on SCM influence.*

H1b: *Transformational leadership of the top supply chain executive has a positive effect on SCM influence.*

H1c: *There is a positive curvilinear (U-shaped) moderation effect of transactional leadership on the effect of transformational leadership, with the effect of transformational leadership being strongest at high levels of transactional leadership.*

Moderating Role of Environmental Uncertainty. Environmental uncertainty can be summarized as the difficulty in predicting future outcomes (Martin, Gözübüyük, and Becerra, 2015), and has been conceptualized in a multitude of ways (Azadegan et al., 2013; Flynn et al., 2016; Martin et al., 2015; Sirmon, Hitt, and Ireland, 2007). Within the SCM literature, Flynn et al. (2016) offer the most comprehensive and current review of the different types of uncertainty and how they influence supply chain integration (i.e., customer, internal, and supplier integration). Linking these results back to the leadership literature, which demonstrates a wealth of contradictory findings (Bass et al., 2003; Hult et al., 2007b; Jansen et al., 2009; Vera and Crossan, 2004; Waldman et al., 2001), it appears to be beneficial to consider more than a single general type of environmental uncertainty when examining the usefulness of leadership styles. In this study, we utilize an adaptation of existing scales by Chen and Paulraj (2004) and Anand and Ward (2004) to capture environmental uncertainty in both the *short-term* and the *long-term*. We argue that environmental uncertainty in the short-term is a context in which TAL is most valuable to strengthen the hypothesized relationships between TAL and SCM influence, and environmental uncertainty in the long-term to enhance the link between TFL and SCM influence.

Environmental uncertainty in the short-term is characterized by uncertainty that results from inconsistency in the flow of materials throughout the supply chain (Germain, Claycomb, and Dröge, 2008). Here, inconsistent upstream supplier performance, internal manufacturing process deviations (e.g., variance in quality, inventory levels, throughput time), and fluctuating customer orders represent the three main sources of variability (Davis, 1993; Germain, Dröge, and Christensen, 2001). This short-term uncertainty stems from variability that is engrained in the complex and globally dispersed end-to-end supply chain process landscape.

One effective way of coping with this uncertainty is TAL. First, TAL behaviors will detect this process-related variability through the introduction and consistent monitoring of supply chain metrics. Second, transactional leaders will initiate corrective actions (e.g., define and track action plans during sales and operations planning meetings) that make it possible to cope with the uncertainty. For example, when a key customer wants to carry out an unplanned product promotion, TAL behaviors enable a quick analysis of the supply chain's capacity

situation and the identification of how the current supply plan must be changed to fulfill the customer request. Therefore, the higher the uncertainty the higher the need for TAL, which in turn increases the benefits gained from TAL behavior. In other instances the above actions may not suffice, necessitating a reconfiguration of the supply chain. Here, TAL will be beneficial by establishing roles and procedures that allow a quick substitution of exchange partners. Therefore, high uncertainty and the need to reconfigure the firm's supply chain more often, makes TAL more beneficial. Based on the foregoing arguments, we postulate that TAL is well suited to cope with short-term uncertainties.

By contrast, environmental uncertainty in the long-term is characterized by uncertainty as a result of structural changes in the firm's industry, such as changing customer preferences, the introduction of new operating processes and technology, as well as the rate of innovation of new products and services (Anand and Ward, 2004).

These sources of uncertainty cannot be controlled through effective process management or standard operating procedures, but instead require structural changes to the supply chain structure that ensure long-term access to critical resources. According to the leadership literature, these circumstances require TFL (Jansen et al., 2009; Vera and Crossan, 2004; Waldman et al., 2001). In essence, a transformational supply chain executive will convince supply chain employees, employees of other functions and other executive managers alike that agile supply chains serve as a superior means to react to structural changes. In particular, a transformational leader will create a compelling vision that identifies how these uncertainties can be turned into opportunities and success, thereby reducing the perceived uncertainty (Bass, 1985). Furthermore, structural changes represent challenges that require tenacity, where TFL behavior helps to increase supply chain employees, employees of other functions and the executive manager's motivation to address those difficult challenges (Bass et al., 2003). Therefore, we argue that, particularly at high levels of environmental uncertainty in the long-term, the TFL behavior of the highest-ranking SCM executive fosters long-term access to critical resources. In conclusion, the following is hypothesized:

H2a: *The positive effect of transactional leadership on the SCM function's influence is strengthened by environmental uncertainty in the short-term.*

H2b: *The positive effect of transformational leadership on the SCM function's influence is strengthened by environmental uncertainty in the long-term.*

Top Management Support. Top management support (TMS) to SCM has been widely recognized as an important factor when examining the relationship between firm strategy and SCM strategy (Chen and Paulraj, 2004; Patel et al., 2013; Sandberg and Abrahamsson, 2010). Patel et al. (2013) describe TMS to SCM as management's focus on supply chain issues (Thong, Yap, and Raman, 1996), as an enabler to promote the possible contributions of SCM to overall firm performance, and a means to align functional and strategic objectives (Joshi et al., 2003; Kearns, 2006). Prior research has largely examined the lack of TMS to SCM with respect to being a barrier to effective SCM (Fawcett et al., 2008; Sandberg and Abrahamsson, 2010). Contrary, high levels of TMS lead to the implementation of a supply chain orientation within the firm and thereby foster effective SCM (Min and Mentzer, 2004; Patel et al., 2013). However, to our knowledge there has been no empirical research examining how TMS might increase the influence of SCM.

When TMS to SCM is high, top managers better understand the strategic importance of the SCM function and how the critical links with exchange partners create value (Gonzalez-Loureiro et al., 2015). Specifically, Patel et al. (2013) find that the top management's perception being a strategic lever is a strong force to engrain supply chain beliefs into the firm's strategic debate. In particular, and in line with resource accessing as our first central mechanism, stronger TMS to SCM allows to better utilize the capabilities of the SCM function (e.g., integration of suppliers and customers) and, in turn, allows the firm to improve its efficient use of existing resources. With respect to coping with uncertainty as our second central mechanism, a better application of the SCM function's capabilities enhances flexibility regarding how these resources are utilized and configured, and, in turn, this flexibility allows to better cope with unforeseen circumstances. In conclusion, top managers' support will help the SCM function in intensifying existing and establishing new exchange relationships, leading to increased interconnectedness with exchange partners. According to this argument, and in line with RDT, stronger TMS to SCM will lead to greater dependency of subunits on the SCM function, which translates into higher SCM influence. Hence, the following hypothesis is offered:

H3: *Top management support to SCM has a positive effect on SCM influence.*

Supply Chain Professional Competencies. Today's high complexity of supply chain networks demands a highly skilled workforce with in-depth knowledge of supply chain processes, analytics, effective communication, and problem-solving (Ellinger and Ellinger, 2013; Fawcett et al., 2008). In particular, supply chain managers are required to exemplify

collaborative skills in establishing internal and external exchange relationships and routinely share information. Further, based on a thorough understanding of differences with other functional departments, supply chain managers must have the ability to resolve those differences through collaboration (Barnes and Liao, 2012). Here, Barnes and Liao (2012) term the knowledge, skills and abilities at the individual supply chain manager level as supply chain professional competencies (SCPC), which primarily consist of SCM skills and business skills (e.g., analyzing supply chain processes and working in teams) (Christopher, 2012; Gammelgaard and Larson, 2001; Sweeney, 2013). Much of the research on SCPC is conceptual in nature and suggests that empirical research is needed. Accordingly, the relationship between SCPC and SCM influence has not yet been investigated.

In line with our first central mechanism (i.e., resource accessing), previous research has suggested that SCPC enable the people within the SCM function to better facilitate integration with external and internal exchange partners and, in turn, to better utilize the resources available to the firm (Ellinger and Ellinger, 2013). Therefore, higher SCPC allow firms to better engage in inter-firm networks with the aim of capturing competitive advantage. As a consequence of this improved resource accessing, the dependence of other functions on the SCM function increases.

With respect to our second central mechanism (i.e., coping with uncertainty), higher SCPC improve the SCM function's performance in coping with uncertainty via coping by prevention, coping by information, and coping by absorption. For example, coping by information is especially useful in handling globally dispersed supply chains that are subject to supply and demand fluctuations. In this context, high SCPC enable the SCM workforce to work effectively and collaboratively with a multitude of internal and external exchange partners, allowing the SCM workforce to exchange and analyze information across multiple stakeholders, to quickly identify the sources of fluctuations, to create new supply and capacity plans, or to define other corrective actions to ensure on-time delivery. Consequently, based on our two central mechanisms, we argue that SCPC enhance SCM influence:

H4: *Supply chain professional competencies have a positive effect on SCM influence.*

2.4 Methodology

2.4.1 Sampling and data collection

For this study we collected primary data by means of a web-based survey in the autumn of 2015. Taking into account the specific focus of this study, managers with extensive knowledge of the SCM function were targeted as key informants (Daugherty et al., 2009; Phillips and Bagozzi, 1986). The target sample frame consisted of 2,234 managers related to the field of SCM working for firms based in Europe and drawn from a proprietary university database. Potential respondents received an email invitation with a personalized link to the web-based survey. In total, 308 responses were received, resulting in a response rate of 13.8%, which is in line with similar sample sizes (Wagner and Kemmerling, 2010). Of these, 32 questionnaires were discarded because 24 respondents indicated that they were not able to answer specific questions about the SCM and logistics function and further 8 questionnaires were discarded due to unengaged responses (e.g., when a respondent answered all questions with the same value, such as 1), leading to 276 usable data sets.

The final sample consisted primarily of top, upper and middle managers (71.0%) who usually participate in the strategic decision making process, indicating that they are reliable informants – see Appendix 1-1.

2.4.2 Tests for bias

To examine potential non-response bias, we compared the means for all questionnaire items of early and late respondents (Armstrong and Overton, 1977; Lambert and Harrington, 1990; Wagner and Kemmerling, 2010). This comparison via t-testing revealed no significant differences ($p \leq 0.05$) and therefore indicates that non-response bias should not influence the results of this study.

Further, we assessed a potential common method bias. First, we conducted Harman's single-factor test (Harman, 1976), which did not indicate a common method bias. Second, a common latent factor was added that loads on all items in our final confirmatory factor analysis (CFA) (Podsakoff et al., 2003). The common latent factor improved the model fit only to a minor extent (i.e., the Tucker-Lewis index by 0.01). When analyzing these results, both individually and collectively, common method bias was not of concern for this study.

2.4.3 Measurements

Measurement Instruments. We undertook an extensive literature review and conducted nine in-depth interviews with practitioner experts from various industries to design the survey instrument. The initial instrument was based on existing scales and concepts that were adapted to the specific context of this study. Furthermore, prior to data collection, the initial survey instrument was additionally assessed by applying a two-step validation process. First, ten supply chain researchers were asked to critique the questionnaire regarding structure, clarity, ambiguity, appropriateness, and completeness. Second, a group of ten practitioner experts, different from the interview participants, reviewed the survey with a focus on ambiguity or other difficulties in responding to the items. During these two steps, the survey instrument was revised iteratively until no further changes were suggested. All items, unless otherwise indicated, are 7-point Likert scale statements. A list with all of the final items with descriptive statistics and corresponding anchors is reported in Appendix 2-1.

Measurement and Validation of SCM Influence. We measured SCM influence following the procedure proposed by Homburg et al. (1999) and used by further studies (e.g., Homburg et al., 2014; Krohmer et al., 2002; Verhoef and Leeflang, 2009). Respondents were asked to distribute 100 points among six departments (supply chain and logistics, marketing and sales, procurement, manufacturing, finance and accounting, and research and development) for five general management (GM) decisions (new product development, expansion into new geographic markets, design of overarching business processes, major capital expenditure, and strategic direction of the business unit) and five SCM decisions (i.e., end-to-end supply chain design, sourcing strategy, distribution strategy, long-term supply and demand planning, and mid-term inventory planning), giving influential departments more points. Consistent with Homburg et al. (1999) the final measure was obtained by first multiplying the influence of the SCM department for each of the 10 decisions with the importance of each of the 10 decisions for the success of the business unit⁵, and second, summing up the respective values across all 10 decisions. To correct for missing data, the respective figure was divided by the number of complete answers. The final measure of SCM influence ranged from 0 to 595 with a mean of 147.29 and a standard deviation of 70.44 – see Table 2-1. As we composed SCM influence to be a single item, we specified the error variance following the recommendations of Brown and

⁵ What is the importance of these decisions for the success of your business unit? (1 = very low importance; 7 = very high importance).

Moore (2012) for single-indicator latent variables in our measurement and structural model. The error variance is specified as: $\delta_x = \text{VAR}(X) (1-\rho)$, where $\text{VAR}(X)$ is the sample variance of the single indicator and ρ is the reliability estimate of the indicator. Commonly, it is accepted to assume that the indicator has the average reliability of all other indicators examined (Brown and Moore, 2012).

Transactional and Transformational Leadership. TAL and TFL are captured by adapting the scales employed by Hult et al. (2007b), who based their scales on the extant literature (Bass and Avolio, 1995; Stogdill, 1963; Stogdill and Coons, 1957) and modified them to fit a supply chain context.

Environmental Uncertainty in the Short-Term. For environmental uncertainty in the short-term we refined the uncertainty construct used by Chen and Paulraj (2004) to reflect the emphasis of uncertainty in the short-term. Furthermore, we enriched the scale by adding two indicators based on Dröge, Claycomb, and Germain (2003) and Sun, Hsu, and Hwang (2009) to better capture the short-term aspect of this scale.

Environmental Uncertainty in the Long-Term. For the concept of environmental uncertainty in the long-term we based our measurement on the scale developed by Anand and Ward (2004) for environmental volatility. We adjusted the wording to reflect the long-term aspect of our theorized construct.

Top Management Support. For this measurement, we drew on the scale compiled by Chen and Paulraj (2004), which is based on the extant literature (Krause, 1999; Monczka, Trent, and Callahan, 1993) and used widely in a supply chain context.

Supply Chain Professional Competencies. To measure SCPC we used a second-order construct based on the work of Gammelgaard and Larson (2001), who identify the categories that we base our scales on as relevant skills for supply chain managers. The phrasing and logic of the items were adopted from Byrd and Turner (2001), who assess the competency requirements of IT personnel.

Statistical Controls. The following statistical controls were used: country of origin, firm size and industry, as proposed by other studies on subunit influence (Homburg et al., 2014; Homburg et al., 1999).

2.4.4 Reliability and validity of measures

To analyze the reliability of our scales, we used the composite reliability approach (CR) (Bagozzi and Yi, 1988). Composite reliability ranging from 0.76 to 0.93 indicated that all constructs were reliable (Bentler, 2009; Garver and Mentzer, 1999). Next, a CFA was conducted to test unidimensionality and construct validity. Model fit indices were $\chi^2 = 455.06$, $\chi^2/df = 1.48$, comparative fit index (CFI) = 0.98, Tucker-Lewis index (TLI) = 0.96, standardized root mean square residual (SRMR) = 0.04, and root mean square error of approximation (RMSEA) = 0.042, indicating acceptable fit (Hu and Bentler, 1999). Convergent validity was supported by standardized factor loadings, with values all substantially greater than 0.5 that were highly significant (Dröge et al., 2003; Koufteros, Cheng, and Lai, 2007; Narasimhan and Kim, 2002) and with values of average variance extracted (AVE) larger than 0.5 for all constructs (Fornell and Larcker, 1981). Finally, discriminant validity was established using the Fornell and Larcker (1981) criterion, as the square root of the AVE for each construct was greater than their respective inter-construct correlations – see Table 2-1. The test of our measurement model revealed a negative error variance for the latent variable SCPC (“Heywood case”). We followed the recommended procedures proposed in the literature (Fornell, 1983; Gerbing and Anderson, 1987; Sörbom and Jöresskog, 1982) to re-specify our model by constraining the unique variance parameter with a negative value to an arbitrary, small positive value, namely 0.005. This approach is standard and creates a proper solution that can be interpreted allowing the initial factor model to be kept (Gerbing and Anderson, 1987).

Construct	1	2	3	4	5	6	7
1 SCM influence	0.93						
2 Transactional leadership	0.36	0.79					
3 Transformational leadership	0.35	0.77	0.84				
4 Environmental uncertainty short-term	0.08	-0.03	0.02	0.71			
5 Environmental uncertainty long-term	0.13	0.10	0.04	0.30	0.76		
6 Top management support	0.37	0.44	0.55	-0.06	0.05	0.88	
7 Supply chain professional competencies	0.40	0.48	0.44	-0.14	0.15	0.38	0.93
Average variance extracted	0.86	0.62	0.71	0.51	0.58	0.77	0.87
Composite reliability	0.86	0.87	0.91	0.75	0.81	0.93	0.93
Mean	147.29	5.13	5.00	4.14	3.52	4.55	4.87
Standard deviation	70.44	1.24	1.30	1.32	1.39	1.49	1.06

Note: Square root of AVE is provided on the diagonal in bold; the factor correlations are provided below the diagonal.

Table 2-1: Measurement reliability and validity I

2.4.5 Results

In this section we first describe the measurement results of SCM influence and then the hypotheses test results. In Table 2-2 the average influence scores of six functions across ten strategic decisions are reported, including a t-test comparing the influence score of the SCM function to all other functions. The SCM function had the most influence on SCM decisions with respect to mid-term inventory management, distribution strategy, and end-to-end supply chain design. On decisions regarding new product development the SCM function had the least influence. We tested the differences between SCM and the other functions via t-tests, demonstrating significant differences in 46 out of 50 cases. These results indicate that the SCM function is most influential in its own domain with an influence level of average 38%. The major counterparts comprise marketing and sales, and the manufacturing function. Together, the three functions account for 73% of the allocated points among all subunits. Outside its domain with respect to GM decisions, the SCM function plays a moderate role. The marketing and sales and the finance and accounting functions have a combined influence of 50% in this area, whereas the SCM function demonstrates an influence level of average 16%.

Decisions	SCM & Logistics	Marketing & Sales	Procurement	Manufacturing	Finance & Accounting	R&D
Supply chain management decisions						
Mid-term inventory management	48	15	9	14	13	1
Distribution strategy	42	30	7	9	10	2
End-to-end supply chain design	39	19	10	15	13	4
Long-term supply and demand planning	33	27	9	16	12	3
Sourcing strategy	29	7	34	15	10	5
General management decisions						
Design of overarching business processes	29	24	15	12	15	6
Major capital expenditures	15	<i>16</i>	8	23	29	10
Strategic direction of business unit	14	38	7	11	19	11
Expansion into new geographic markets	13	52	6	8	<i>15</i>	6
New product development	10	34	8	<i>11</i>	<i>10</i>	27

Scores different at $p \leq 0.05$ in bold, $p > 0.05$ in italics.

R&D = research and development.

Note: Sum may not add up to 100 as a result of rounding.

Table 2-2: Influence of functional subunits over strategic decisions I

To evaluate our hypotheses, we first assessed the fit of the full structural equation model using Amos 24. The resulting overall fit indices suggest that our theoretical model is a plausible representation of the structures underlying the empirical data: $\chi^2 = 777.06$ $\chi^2/df = 1.29$, CFI = 0.96, TLI = 0.95, SRMR = 0.05, and RMSEA = 0.033, Following the recommended procedure by Homburg et al. (1999) we tested an additional model encompassing two independent variables, SCM influence on SCM decisions and SCM influence on GM decisions respectively. The results in Table 2-3 suggest that only minor differences exist. Therefore, we decided to report our results with the measure reflecting all decisions.

Overall, five out of seven hypotheses were supported. With respect to TAL and TFL, we predicted a positive effect on SCM influence. We found marginal significant statistical support for the link between TAL and SCM influence ($\beta = 0.19$, $p \leq 0.10$), but no significant effect of TFL ($\beta = -0.02$, n.s.), thus supporting H1a, but not H1b. The highly significant positive effects of TMS to SCM ($\beta = 0.22$, $p \leq 0.01$) and SCPC ($\beta = 0.21$, $p \leq 0.01$) provide support for both H3 and H4. Overall, the conceptualized and tested model with $R^2 = 0.29$ explains a notable portion of SCM influence.

Independent variables	Hypothesis	Dependent variables								
		Model 1			Model 2					
		SCM influence on all decisions			SCM influence on SCM decisions			SCM influence on GM decisions		
		β	b	S.E.	β	b	S.E.	β	b	S.E.
TAL	H1a (+)	0.19 [†]	9.76	5.84	0.19 [†]	13.81	8.31	0.19 [†]	9.01	5.24
TFL	H1b (+)	-0.02	-1.13	5.77	-0.08	-5.73	8.23	-0.01	-0.49	5.19
TMS	H3 (+)	0.22 **	10.19	3.35	0.23 **	14.23	4.79	0.17 *	6.84	3.02
SCPC	H4 (+)	0.21 **	12.87	4.58	0.19 *	16.09	6.50	0.22 **	11.85	4.12
<i>Controls</i>										
Firm size		-0.04	-2.13	3.52	-0.07	-5.46	5.02	-0.02	1.24	3.17
Industries		Included			Included			Included		
Countries		Included			Included			Included		
R ²		0.29 (0.06)			0.25 (0.06)			0.30 (0.06)		

[†] $p \leq 0.10$; * $p \leq 0.05$; ** $p \leq 0.01$.

() R² with controls only.

β = Estimates for standardized solution; t-values from unstandardized solutions.

b = Estimates for unstandardized solution.

Supported hypotheses in bold.

For brevity reasons we have not listed the statistical values for control variables.

“Industrial goods and services” served as the baseline category for “Industry” and “Germany” served as the baseline category for “Country”.

Table 2-3: Hypothesis test results I – main effects

2.4.6 Moderation test

To test hypotheses H1c, H2a, and H2b, we also conducted a moderated ordinary least squares regression analysis – see Table 2-4. All independent variables were mean-centered and interaction terms were composed of mean-centered variables (Aiken and West, 1991). We estimated the following models in hierarchical order:⁶

$$INF = b_0 + b_1FTE + \sum_{i=1}^{12} b_{2,i}Industry_i + \sum_{k=1}^5 b_{3,k}Country_k \quad (\text{Model 1})$$

$$+ b_4TAL + b_5TFL + b_6TMS + b_7SCPC \quad (\text{Model 2})$$

$$+ b_8EUST + b_9EULT + b_{10}(TAL \times EUST) + b_{11}(TFL \times EULT)$$

$$+ b_{12}(TFL \times TAL) + b_{13}(TFL \times TAL^2) \quad (\text{Model 3})$$

In model 1 control variables were entered as a block. In model 2 main effects variables were introduced, followed by the interaction terms in model 3. Model 1 was not significant ($R^2 = 0.06$, $p = 0.54$), while models 2 and 3 were statistically significant ($p \leq 0.01$) and model fit increased in each step. Correlations (see Table 2-1) between the variables were relatively low or in the range of comparable studies (e.g., the correlation between TAL and TFL) (Hult et al., 2007b). Both the variance inflation factors (maximum: 2.36) and the condition numbers (maximum: 18.32) were substantially below the commonly suggested threshold for models 1 and 2 (Cohen et al., 2013). For the interaction ($TFL \times TAL^2$) in model 3 the variance inflation factor (5.41) was slightly above the threshold. However, this does not represent a concern, as this is expected when including the higher-order and product terms of TAL and TFL (Aiken and West, 1991; Cohen et al., 2013).

⁶ The variable identifiers are as follows: INF = SCM influence, FTE= firm size according to number of employees, Industry = industry according to the standard industrial classification code, Country = country of residence of the respondents' business unit, TAL = transactional leadership, TFL = transformational leadership, TMS = top management support, SCPC = supply chain professional competencies, EUST = environmental uncertainty in the short-term, EULT = environmental uncertainty in the long-term.

Independent variables	Hypothesis	Models					
		Model 1: Control variables		Model 2: Main effects		Model 3: Moderation effects	
		b	S.E.	b	S.E.	b	S.E.
Constant [b_0]		141.98**	28.51	148.19**	26.02	144.58**	26.55
<i>Controls</i>							
Firm size [b_1]		-2.06	4.04	-1.99	3.68	-2.14	3.72
Industry [$b_{2,1-12}$]		Included		Included		Included	
Country [$b_{3,1-5}$]		Included		Included		Included	
<i>Direct effects</i>							
TAL [b_4]				7.93†	4.53	7.94	4.94
TFL [b_5]				1.80	4.56	-0.62	4.79
TMS [b_6]				9.13**	3.18	9.79**	3.17
SCPC [b_7]				13.13**	4.31	13.34**	4.32
<i>Linear moderation</i>							
EUST [b_8]						5.64†	3.25
EULT [b_9]						-0.16	3.30
TAL × EUST [b_{10}]	H2a (+)					6.23*	2.44
TFL × EULT [b_{11}]	H2b (+)					-1.71	2.25
<i>Curvilinear moderation</i>							
TFL × TAL [b_{12}]						7.18*	3.08
TFL × TAL ² [b_{13}]	H1c (U)					1.87†	1.11
R ²		0.06		0.24		0.28	
ΔR ²				0.18		0.04	
F		0.94		3.56**		3.42**	
F of ΔR ²				8.51**		2.74*	

† $p \leq 0.10$; * $p \leq 0.05$; ** $p \leq 0.01$.

b = Estimates for unstandardized solution; S.E. = Standard error.

Supported hypotheses in bold.

For brevity reasons we have not listed the statistical values for control variables.

“Industrial goods and services” served as the baseline category for “Industry” and “Germany” served as the baseline category for “Country”.

Table 2-4: Hypothesis test results I – moderation effects

In support of H1c, the regression coefficients for the linear and curvilinear effects were both positive and significant ($b_{12} = 7.18$, $p \leq 0.05$; $b_{13} = 1.87$, $p \leq 0.10$), indicating a positive U-shaped relationship. We created Johnson-Neyman plots using tools developed by Miller, Stromeyer, and Schwieterman (2013) to further explore when the conditional effect of TFL was statistically significant. Figure 2-2 is a visual representation of the conditional effect of TFL on SCM influence from -3.0 to +3.0 standard deviations around the mean of TAL. The graph suggests that there is a small negative, yet non-significant effect for the interplay of TAL and

TFL for low to moderate levels of TAL. A significant positive effect can be found at high levels of TAL (i.e., $TAL > 1.1$ standard deviations of TAL).

Second, we analyzed the moderator effect of environmental uncertainty in the short-term on the link between TAL and SCM influence (H2a) and environmental uncertainty in the long-term on the link between TFL and SCM influence (H2b). Both hypotheses state that the positive effects of TAL and TFL are stronger when environmental uncertainty is high. Mixed results were obtained with a positive significant interaction between environmental uncertainty in the short-term and TAL ($b_{10} = 6.23$, $p \leq 0.05$), thus supporting H2a. For TFL and environmental uncertainty in the long-term, however, the interaction term was negative and not significant ($b_{11} = -1.71$, $p = 0.45$). Therefore, hypothesis H2b was rejected. The significance test of the simple slope of TAL on SCM influence is contingent on the variables of environmental uncertainty in the short-term, TFL and TAL itself. Environmental uncertainty in the short-term was the primary moderator, and TAL, as well as TFL, the secondary moderators of the conditional effect of TAL. For plotting the graphs we used -3.0 and +3.0 standard deviations of the primary moderators and held the secondary moderators constant at -1.5 (see Figure 2-3) and +1.5 (see Figure 2-4) standard deviations from their respective mean, as all variables were mean-centered for regression analysis. Figure 2-3 indicates, when TAL and TFL are low, an increase in environmental uncertainty in the short-term has a positive effect on SCM influence. While the change in SCM influence is significant for values greater than 0.5 standard deviation above the mean, Figure 2-4 demonstrates, when TAL and TFL are high, an increase in environmental uncertainty in the short-term above -1.0 standard deviation is expected to have a significant positive effect on SCM influence and that this change is larger by approximately 30 points.

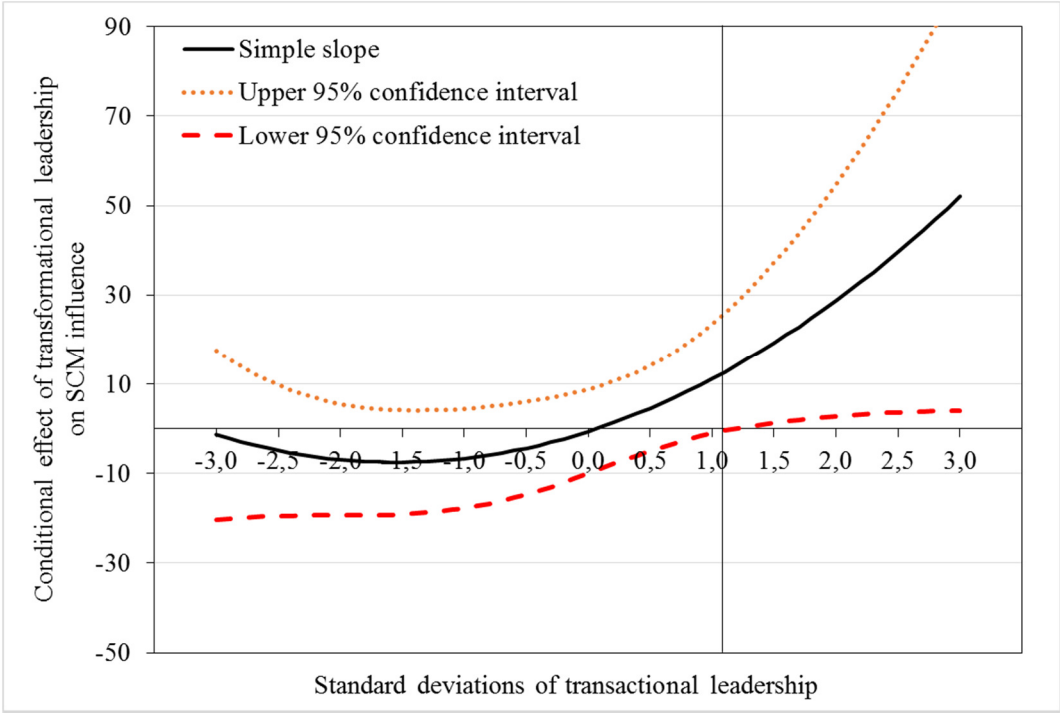


Figure 2-2: Johnson-Neyman plot of the conditional effect of TFL on SCM influence

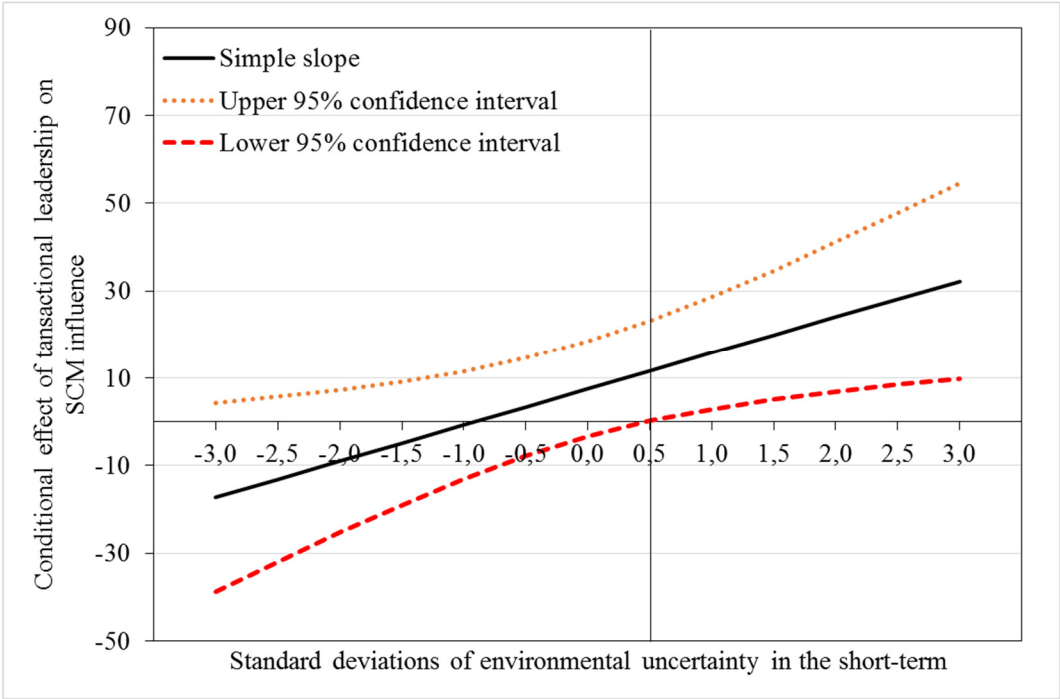


Figure 2-3: Johnson-Neyman plot of the conditional effect of TAL on SCM influence across EUST when TAL and TFL are low

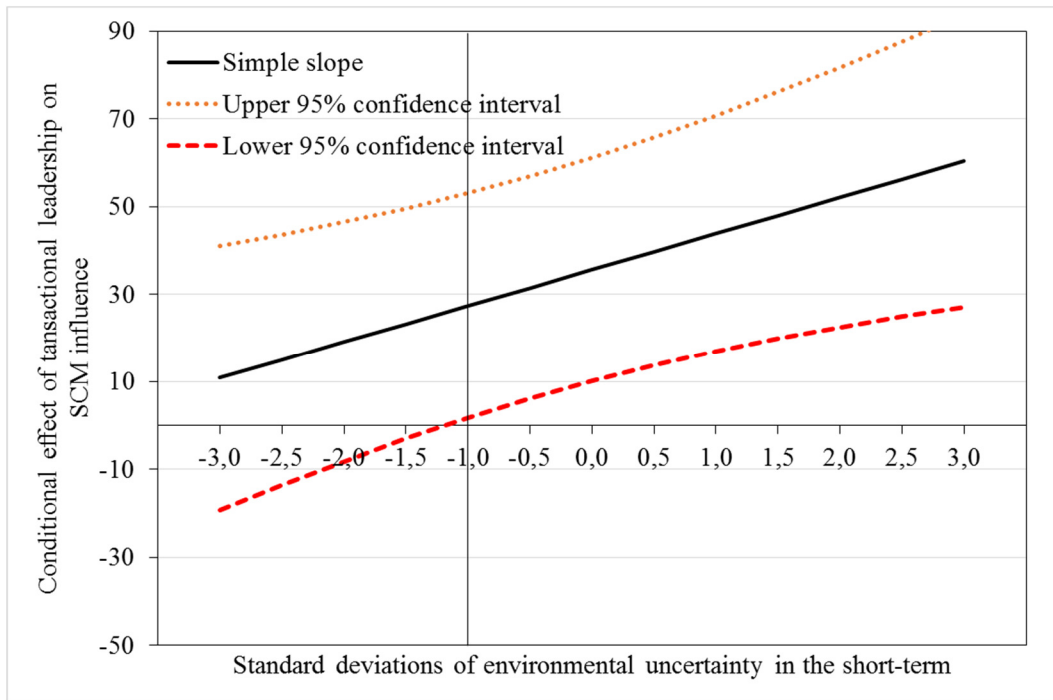


Figure 2-4: Johnson-Neyman plot of the conditional effect of TAL on SCM influence across EUST when TAL and TFL are high

2.5 Discussion

2.5.1 Theoretical implications

Research on the corporate SCM function and its involvement in decisions of strategic importance is burgeoning as a result of its theoretical and practical relevance (Patel et al., 2013; Roh et al., 2016; Wagner and Kemmerling, 2014). While a plethora of studies have examined the relationship between corporate and SCM strategy from a multitude of angles (e.g., Hult et al., 2007a; Patel et al., 2013; Stank et al., 2005), only a single study exists on the antecedents to a construct similar, but not identical, to SCM influence (Zacharia and Mentzer, 2004). This is particularly noteworthy, as the situation of ever-more complex and globally dispersed supply chains calls for SCM functions that are involved in strategy development; yet scholars and managers alike are lacking theory-based insights into which factors drive SCM influence. In the following, we present how this study contributes to the fields of strategic leadership and supply chain management.

We advance the debate on transactional leadership (TAL) and transformational leadership (TFL) behavior and its effects on organizational outcomes. While extant research has offered useful insights into the effects of TAL and TFL on performance and innovation

(Bass et al., 2003; Jansen et al., 2009; Waldman et al., 2001), little empirical research has examined their influence in a supply chain context (Hult et al., 2007b).

Direct Effects of Strategic Leadership. TAL and TFL of the top supply chain executive were both concluded to have a positive effect on SCM influence. While TAL has a positive effect on SCM influence, we only observed an effect of TFL on SCM influence when TAL was strong. With respect to TAL these findings support similar conclusions reached by past research (Bass et al., 2003). Therefore, our finding contributes to the leadership literature in demonstrating that the initiation of structure through TAL is well suited to enhancing SCM influence.

Interplay of Strategic Leadership. In addition, this study adds to the debate on the interplay between TAL and TFL in influencing outcomes. Previous research investigating the combined effects of TAL and TFL has mostly used an additive model to examine how TFL builds on the effects of TAL (MacKenzie, Podsakoff, and Rich, 2001; Waldman, Bass, and Yammarino, 1990; Waldman et al., 2001). In line with our hypothesis, we found that TAL serves as a catalyst for TFL, turning the effect of TFL from slightly negative and not significant to positive and significant. In contrast, Morhart et al. (2009) found an inverse U-shaped relationship between TFL and TAL in a marketing context. Therefore, our finding indicates how different contexts may produce different results. Furthermore, it is shown that the interplay is only significant when TAL is at least one standard deviation above its mean. This suggests that the positive effects of TFL only unfold at strong levels of TAL, and in turn, directly adds to the debate how and when TFL builds on TAL.

Moderating Effect of Environmental Uncertainty. Previous research has argued that a leader's behavior contributes strongly to organizational outcomes under changing environmental conditions (Bass et al., 2003; Jansen et al., 2009; Waldman et al., 2001). Our findings provide substantial support that environmental uncertainty is an important moderator that influences the relationship between leadership style and SCM influence. Specifically, this study revealed that the positive effect of TAL on SCM influence can be observed when environmental uncertainty in the short-term is taken into account. Contrary to our expectations, we observed no effect of TFL on SCM influence even when environmental uncertainty in the long-term was high. According to our finding on the interplay between TAL and TFL, a possible explanation for this results may be the lack of adequate TAL to render TFL effective. Building on the results of Jansen et al. (2009), another possible explanation might be that the

relationship between TFL and SCM influence is always internally consistent, and therefore independent of environmental conditions.

Direct Effect of Top Management Support and Supply Chain Professional Competencies. Further, this study contributes to the SCM literature by identifying a more complete set of internal antecedents to SCM influence. Top management support (TMS) to SCM and supply chain professional competencies (SCPC) were both predicted to, and did, have a positive effect on SCM influence. The finding on TMS demonstrates that high TMS to SCM not only engrains a supply chain orientation within the firm (Patel et al., 2013; Sandberg and Abrahamsson, 2010), but also enhances SCM influence through creating a greater dependency of other subunits on the SCM function and better ability to cope with uncertainty. The finding regarding SCPC complements the current literature on the necessary skills and competencies of the SCM function (Ellinger and Ellinger, 2013; Esper, Defee, and Mentzer, 2010a; Sweeney, 2013), in so far as it demonstrates that high SCPC results in better integration and information exchange and thereby enhancing SCM influence.

Furthermore, one unanticipated finding was that the identified antecedents have nearly the same effect on the influence the SCM function has on SCM decisions and on general management decisions. However, the mean of SCM influence over SCM decisions with an average of 38% is more than double than the mean of SCM influence over general management decisions with an average of 16%. To better understand the difference between the scores, we viewed the means of SCM influence over SCM decisions and over general management decisions for the bottom 20% of the combined SCM influence score. Here, the SCM function has an influence level of an average 19% on SCM decisions and 7% on general management decisions. Due to the fact that the predicted change in SCM influence by adjusting TAL, TFL, TMS to SCM, and SCPC cannot suffice to increase SCM influence to the measured average levels, the difference in means can be attributed to other factors we did not examine. Therefore, we conclude that the SCM function's influence is generally lower in the area of general management. Further, we showed that the examined antecedents are useful to enhance SCM influence over a broad range of strategic issues equally as opposed to specific areas. This is an important and relevant insight, as this finding explains how the SCM function can become part of the strategic debate across a variety of topics (Narasimhan, Kim, and Tan, 2008; Perez-Franco et al., 2016).

Although the scope of this study was limited to SCM influence, our findings may apply to a broader set of functions. In particular, TMS for a particular function should increase its

level of influence, as top managers are at the realm of decision making. The same generalizability holds true for functions in need of a highly skilled workforce for a dedicated task. One such other function might be research and development in an advanced technology company that is heavily dependent on innovation by its developers, whereas, in line with resource dependency theory, the human resources function in the same company might not gain as much influence with an equally skilled workforce in human resources-related topics.

2.5.2 Managerial implications

First, current research and practitioners alike mostly agree that the involvement of the SCM function in strategic decision making is highly important in today's global economy. However, as it is a fairly young function compared to established functions such as marketing or finance (Wagner and Kemmerling, 2014), this involvement can be hard to achieve. As the contributions of the SCM function to the overall value delivery of the firm gain importance, incorporated SCM perspectives become critical to a variety of organizational outcomes. Supply chain managers who are seeking to enhance SCM influence would benefit from adapting TAL behaviors first, before evaluating how TFL behaviors might benefit their organization. This holds especially true when the environment is perceived as uncertain in the short-term, as transactional behavior has an even stronger impact.

Second, the results of this research highlight how important TMS is when trying to involve the SCM function in strategic decision making. It represents the strongest lever to improve SCM influence within the firm. This support from top management is particularly important, as it is not only a representation that management is convinced that the perspective of SCM functions is paramount when making the right strategic choices, but also that it is an overall contributor to the firm's value delivery system (Patel et al., 2013; Sandberg and Abrahamsson, 2010). Therefore, SCM executives should continue to market the advantages of SCM to other executives to gain additional support.

Third, our study underscores the findings of current research that managers must spend time and resources on attracting and training a highly skilled workforce for SCM (Ellinger and Ellinger, 2013; Esper et al., 2010a; Sweeney, 2013). The requisite skill set in order for global supply chain managers to be successful is becoming ever more demanding, as the supply chains are globally dispersed and supply chain managers must act across time zones, cultures and languages (Ellinger and Ellinger, 2013; Sweeney, 2013). Therefore, it appears to be advisable

for managers to invest a substantial amount of time into attracting the right supply chain talent, as well as providing sufficient training to the current SCM staff.

2.5.3 Limitations and future research

This research provides insights into the antecedents of SCM influence. Still, some limitations of this research must be pointed out, which, at the same time, offer promising avenues to further advance the understanding of SCM influence.

First, while this study focused on the popular TAL and TFL framework in leadership research (Judge and Piccolo, 2004), the recent work by Antonakis et al. (2016) suggests that future research would benefit from extending this framework by also considering charismatic leadership as a focal construct. Such an approach appears to be fruitful as it focuses on one particular promising dimension engrained in TFL. Further, future work would possibly benefit from gathering data in the form of written speeches or video recordings of the highest-ranking SCM executive, and thereby complementing data from subordinates with a more objective measure of leadership behavior (Jacquart and Antonakis, 2015).

Second, this study produced mixed results regarding the moderation effect of environmental uncertainty on the relationship between strategic leadership styles and SCM influence. Here, further research examining a wider spectrum of uncertainties (Flynn et al., 2016) in combination with differing leadership styles would shed further light on the question to which extent SCM gaining influence is dependent on the external context. This avenue appears to be especially promising due to the ever increasing interconnectedness of supply chain networks and the associated emergence of various uncertainties (Bode et al., 2011; Flynn et al., 2016).

Third, a further avenue for future work lies in studying the emergence of SCM influence's antecedents. Here, two aspects appear to be relevant: (1) the time and effort it takes to establish the examined antecedents, and (2) how long it takes to observe changes in SCM influence to determine how adjustments of SCM influence should be planned to enhance performance outcomes.

Fourth, this study provided interesting insights how SCM influence can be enhanced via a holistic set of antecedents. However, similarly to other studies in this domain (Homburg et al., 2014; Homburg et al., 1999), we did not provide recommendations what exhibits a desired level of departmental influence for the SCM function, either on an absolute level or compared

to other functions. Here, the work of Engelen (2011) and Oswald et al. (2012) represent a first step in showing that optimal levels of influence exist by investigating U-shaped relationships of departmental influence and different performance outcomes. Yet, the results of both studies are subject to certain limitations, as no further tests are provided when these conditional effects are significant and what constitutes an optimal level of departmental influence. Accordingly, further research should examine relationships of SCM influence with organizational performance outcomes such as firm performance and supply chain performance. Examining these relationships would complement the recent work of Roh et al. (2016) with the aim of further substantiating the critical role of the SCM function for both the firm's strategic debate and the facilitation of value generation. This gap is addressed by two studies, which are provided in chapters 3 and 4 of this dissertation.

Finally, while this study incorporated multiple European countries, its results may not be generalizable across other countries. It could be that the concept of SCM in countries outside Europe is different, especially in emerging markets, while we assume the results to be similar in the United States and other industrialized countries as a result of similar economic development.

3 Supply chain management influence and new market performance⁷

⁷ This chapter is based on the unpublished manuscript by Patschke, Wallenburg, and Hoberg (2017b): “Linking the Supply Chain Function’s Influence to New Market Performance: An Information Processing Perspective”.

3.1 Introduction

In recent decades, entering new geographic customer markets (subsequently referred to as new markets or new geographic markets) has become a foundation of firm strategy to diversify business activities. Opportunities for growth and long-term profitability represent the main motives behind this expansion (Chen et al., 2016) and have led to its growing importance (Benito-Osorio et al., 2016). However, entering new markets is linked to substantial challenges (Contractor, 2007; Lu and Beamish, 2004), increasing complexity and creating additional uncertainties (Flynn et al., 2016; George et al., 2005; Hitt et al., 2006) that are not always adequately addressed.

As a result of global competition, tightly coupled inter-firm networks (Bode et al., 2011) provide only limited organizational slack and have amplified the importance of information and cross-functional integration as key enablers of effectively managing the uncertainties related to new market entry. In particular, demand uncertainty plays a central role (Brouthers, Brouthers, and Werner, 2008) and results in additional information that must be gathered, analyzed, and interpreted. Here, the involvement of supply chain management and logistics (SCM)⁸ as an important strategic function within companies (Roh et al., 2016) can be considered vital. This importance is due to its ability to effectively manage the more complex and greater information processing needs of new markets by facilitating the flow of information and building critical links to exchange partners within both the company and the distribution channel (Narasimhan and Kim, 2002).

In this context, giving the SCM function sufficient influence over fundamental strategic decisions represents a prerequisite – we refer to this type of departmental influence as *SCM influence*. By doing so, the SCM function can better address the challenges posed by a new market entry by preventing a lack of information from becoming a decision bottleneck. This point raises a question concerning the optimal level of SCM influence – whether a “the more, the better” approach is optimal or which aspects might limit the adequate level of influence.

Because we are examining an information flow problem, we decided to employ *information processing theory* (IPT) as the theoretical base. IPT suggests that the uncertainty stemming from expanding to new markets increases information processing needs (Galbraith,

⁸ Most firms label the function that is responsible for logistics and SCM activities either as SCM or as logistics (Mentzer et al., 2008). Consequently, we have combined the two terms for brevity.

1974) that must be coped with adequately by the firm (Tushman and Nadler, 1978). Prior IPT research has suggested several mechanisms to firms for effectively managing these uncertainties. Specifically, firms can establish adaptive measures with the aim of reducing information processing needs (e.g., creation of buffers or self-contained tasks) and increasing information processing capacity (e.g., investment in vertical information systems or creation of lateral relationships) (Busse et al., 2017; Flynn and Flynn, 1999; Galbraith, 1974).

Prior SCM research has demonstrated that the SCM functions have pronounced capabilities to implement such measures by examining numerous phenomena explained by IPT. Most recently, Busse et al. (2017) provided an overview of the most prominent articles examining such mechanisms, among others, concerning the value of internal and external supply chain integration (Flynn et al., 2016; Schoenherr and Swink, 2012; Swink, Narasimhan, and Wang, 2007; Williams et al., 2013; Wong, Boon-itt, and Wong, 2011), effective measures in addressing supply chain disruption risks (Bode et al., 2011), cycle-time variance (Hult, Ketchen, and Slater, 2004), buyer-supplier cooperation in new product development (Cousins et al., 2011), process integration in the outsourcing of business processes (Narayanan et al., 2011), and information integration via IT-enabled decision making (Wong et al., 2015).

However, because the implementation of these mechanisms affects the firm's resource allocation and organizational structure (Galbraith, 1974), multiple functional departments are involved in decision making, with each department following its desire to shape the decision to best reflect the function's own perspectives (Dougherty, 1992). The degree to which a function is able to shape such decisions is referred to as departmental influence (Homburg et al., 1999); the greater the influence of the SCM department, the more it will be able to extensively implement measures to handle the specific information processing challenges of the new market.

However, the research on information processing raises the problems of bounded rationality (Galbraith, 1973) and equivocality (Daft and Weick, 1984), which potentially stand counter to a "the more (influence), the better" approach. Accordingly, this research focuses not only on the influence of the supply chain function but also on influence dispersion, the degree to which the decision making power is dispersed among many different functions. Prior research has shown that such dispersion can enhance the effectiveness of decision making and improve subsequent outcomes (Krohmer et al., 2002).

A second key factor that is included in this research is the customer orientation of the SCM function. Because unknown or changing customer requirements represent the major source of uncertainty in new markets (Moser et al., 2017), customer orientation is relevant in gathering, synthesizing, analyzing and interpreting the relevant information and in anticipating changes in demand requirements (Grawe et al., 2009; Kohli and Jaworski, 1990; Narver and Slater, 1990). This additional information could potentially offer a major contribution to the SCM function's ability to better specify adequate needs-reduction or capacity-increasing mechanisms; therefore, we include this aspect in our model.

Although our study contributes to SCM research by combining IPT and influence research, it also adds to the ongoing debate on the SCM function's involvement in strategic decisions (Roh et al., 2016; Wagner and Kemmerling, 2014). Furthermore, to the best of our knowledge, no study thus far has examined the moderating role of customer orientation, thus advancing understanding of the boundary conditions of SCM influence. Based on data from 276 survey responses from Europe-based managers with a background in supply chain management and using structural equation modeling, we test our hypotheses and demonstrate the inverted U-shaped relationship of SCM influence on new market performance, which is subject to the moderating role of customer orientation. Thus, our study enables a better understanding of the SCM function's role in expanding to new markets (Roh et al., 2016).

3.2 Background literature

Influence of Functional Company Departments. Following the literature on departmental influence, we refer to the influence of a functional department as the ability to influence decisions that are of strategic importance to the firm, relative to other functions (Homburg et al., 1999; Verhoef and Leeflang, 2009). Following Homburg et al. (1999, p. 2), subunits that provide “valued resources, with no close substitutes, which others are dependent upon have more power and influence than other subunits”.

Prior research has largely focused on the marketing and sales function and has found a positive relationship between the influence of the function and firm performance (Feng et al., 2015; Homburg et al., 2014; Homburg et al., 1999; Krohmer et al., 2002; Verhoef and Leeflang, 2009). In contrast, only two studies have considered multiple departments in analyzing this relationship (Engelen, 2011; Oswald et al., 2012). Whereas Engelen (2011) examined how the relationship of functional influence with firm performance (i.e., marketing, sales, research and

development, and manufacturing) is moderated by strategy type (i.e., differentiation and cost leadership focus), Oswald et al. (2012) analyzed the effects of influential departments (i.e., marketing, sales, research and development, manufacturing, and finance) on market orientation. Both studies investigated the effect of influence dispersion (Krohmer et al., 2002) and found an inverted U-relationship with firm performance (Engelen, 2011) but not with market orientation (Oswald et al., 2012). Furthermore, Oswald et al. (2012) were able to demonstrate that an inverted U-relationship also exists between the influence of marketing, manufacturing, and finance departments with proactive market orientation. However, despite the aforementioned contributions, both studies are subject to certain limitations, such as small sample sizes consisting mostly of companies with fewer than 200 employees.

3.3 Conceptual framework

New market performance is the key outcome variable of this study. Its relationship to the SCM function is outlined in the conceptual framework – see Figure 3-1, which uses IPT as a theoretical base. Four hypotheses are developed based on the SCM function's ability to reduce information processing needs and increase information processing capabilities (also referred to as information processing capacity) with the aim of achieving information processing fit. It is proposed that new market performance has a positive effect on firm performance and that new market performance itself depends a) upon the influence that is given to the SCM function, because this function is compared with other company functions well equipped to shape the necessary new market entry decisions to create information processing fit; b) upon the customer orientation of the SCM function, because this orientation influences how good the function is in creating the aforementioned fit; and c) upon the dispersion of influence among different company functions, because the SCM function cannot alone address bounded rationality and equivocality within the IPT.

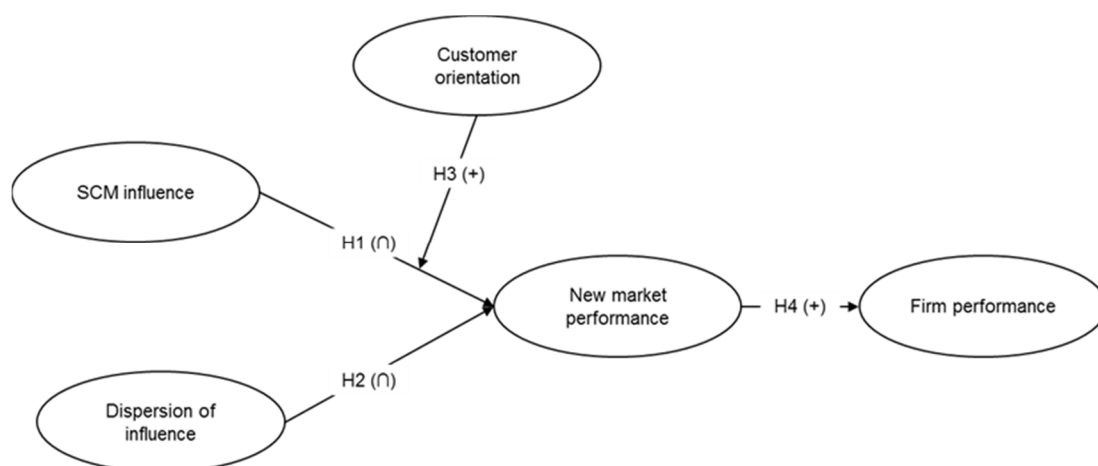


Figure 3-1: Conceptual model II

3.3.1 Expansion to new geographic markets

Geographic expansion is a strategy through which firms expand the sales of their products to new geographic locations and markets (Hitt et al., 2006). This expansion to new markets is associated with several benefits, “including economies of scale and scope, access to new resources, extension of innovative capabilities, knowledge acquisition, location advantages and performance improvement” (Chen et al., 2016, p. 861). However, entering a new market is also associated with uncertainties (Benito-Osorio et al., 2016) that increase the information processing needs of the firm (Chen et al., 2016; Flynn et al., 2016; Hitt, Hoskisson, and Kim, 1997; Lu and Beamish, 2004). The reasons for this increase are manifold and include aspects such as resources that now are shared across more markets, the need to integrate displaced operations, and customer preferences differing from those in existing markets (Lampel and Giachetti, 2013; Shi and Gregory, 1998). This increase could pose problems and lead to poor performance because the capacity of managers to process the additional information is limited (Contractor, 2007; Hitt et al., 1997). The market expansion literature agrees that successful expansion causes uncertainty (Chen et al., 2016). However, the supply chain literature agrees that additional mechanisms are required that allow effective coping with the increased uncertainty to effectively integrate new operations (suppliers, internal manufacturing, and customers), to understand the dynamics of the new market (e.g., customer preferences and demand curves), and to ensure effective coordination of internal and external exchange relationships (Flynn et al., 2016; Wong et al., 2011).

3.3.2 Information processing theory and new geographic market performance

IPT provides a useful lens to investigate the role of functional departments in making a new market entry successful (i.e., increasing new market performance). IPT takes an intra-organizational perspective and views companies as entities that efficiently gather, interpret, synthesize, and coordinate information (Burns and Wholey, 1993) to address the external uncertainty the company faces. It outlines that the effectiveness of decision making, and subsequently performance, depends upon the information processing fit – the degree to which information processing needs are balanced with internal information processing capabilities (Busse et al., 2017; Galbraith, 1974; Tushman and Nadler, 1978).

Entering a new market causes an increase in information processing because of the elevated levels of complexity and uncertainty associated with new markets (Galbraith, 1974; Moser et al., 2017). This increase potentially creates a misfit situation that requires the organization to employ mechanisms that “either reduce the need for information processing [...] or increase the capacity to process information” (Swink and Schoenherr, 2015, p. 70). As a result, the decisions connected to entering the new market should be influenced by those departmental functions that are particularly well equipped (i.e., able) to implement appropriate needs-reducing or capacity-increasing mechanisms.

With respect to the first type of mechanism, departmental functions can reduce the information processing need via *buffers* or via *self-contained tasks* (Bode et al., 2011; Busse et al., 2017; Galbraith, 1974; Swink and Schoenherr, 2015). *Buffers* are used as a protective shield against the failure to meet target levels, such as a specified customer service level, or requested lead times (Fisher and Raman, 1996; Tang, 2006). For example, in a new market, additional finished-goods inventory can counterbalance customer demand variations. In turn, this effect reduces the necessary information to plan production and distribution because deviations will not immediately result in stock-out situations. However, because buffers impose costs (e.g., capital costs of inventory), it is vital that the decision makers are capable in deciding where to implement which buffers to reach information processing fit at the lowest cost (Busse et al., 2017; Galbraith, 1974).

In contrast, *self-contained tasks* refer to structuring an organization and skills around outputs (e.g., geographical areas and product lines) instead of around inputs (e.g., resources and skills) (Flynn and Flynn, 1999; Galbraith, 1974, 1977). The benefit of this strategy is to reduce information processing needs by lowering the output diversity for each resource (Galbraith,

1974; Kannan and Ghosh, 1996; Swanson, 2003). With respect to new market entry, this effect could imply, for example, using dedicated resources for the new market. That approach reduces the information processing needs because no information exchange is necessary with other markets about utilization of resources. However, self-contained tasks come at the cost of foregoing economies of scale of specialized and centrally managed resources (Christopher and Ryals, 2014; Galbraith, 1974; Jacobs and Swink, 2011; Kortmann et al., 2014). Consequently, the company must carefully evaluate when and to what extent this strategy is useful in a particular situation.

With the second type of mechanism, *vertical information systems* and *lateral relationships*, the information processing capacity is increased (Flynn and Flynn, 1999; Galbraith, 1974; Swanson, 2003). These mechanisms facilitate information traveling faster and more accurately (Swink and Schoenherr, 2015). Investments in vertical information systems allow gathering data at the point of origin (e.g., at a specific resource or at the point of sale) and transmitting the data to the organizational units that analyze them and make subsequent decisions (Fawcett et al., 2011). A new market entry can imply adaptations to existing IT systems to incorporate the specifics of the new market and its relationship to available production resources. Such a strategy is only effective when the data can be quantified and analyzed formally (Byrd and Turner, 2001; Gattiker and Goodhue, 2004; Wong et al., 2015), which requires knowledge about the interdependencies between the new and the old markets and the available resources.

Creating lateral relationships aims at moving decision making downwards in the hierarchy and directly connecting the individuals and departments that possess the information relevant for effective decision making (Flynn and Flynn, 1999; Frankel and Mollenkopf, 2015; Galbraith, 1974, 1977; Swanson, 2003). Lateral relationships are exemplified by structures such as cross-functional teams, including across firm boundaries (Galbraith, 1974; Schoenherr and Swink, 2012). New markets can imply a need either to enhance the interconnectedness within the company or (which is less costly) to involve more strongly those departments that are already well interconnected.

When considering information processing fit and performance, two additional concepts play an important role: *bounded rationality* (Galbraith, 1973) and *equivocality* (Daft and Weick, 1984). Bounded rationality refers to the fact that functional decision makers have “limitations in experience, [and] myopic perspectives” (Swink and Schoenherr, 2015, p. 70), which limits the interpretation and application of information to their specific perspective. *Equivocality*

exists when information is unclear and ambiguous and requires sense-making to provide a common understanding (Swink and Schoenherr, 2015). Consequently, in the context of new markets in which information likely differs from the past, it is beneficial when different managers process the information jointly to foster a shared understanding and interpretation of the data (Daft and Lengel, 1986; Swink and Schoenherr, 2015).

3.3.3 Hypothesis development

Relationship between SCM Influence and New Market Performance. The underlying reasoning for the first hypothesis is that the SCM function is particularly good at facilitating decisions that lead to high information processing fit under the specific challenges of entering a new market. For this potential to materialize, the SCM function needs substantial influence on important strategic decisions to be able to incorporate adequate information processing mechanisms. However, as SCM influence increases, the marginal benefit of this growing influence decreases – to a point at which it might even turn negative.

As outlined previously, a company entering new geographic markets faces increased uncertainty (Benito-Osorio et al., 2016; Chen et al., 2016; Flynn et al., 2016) to which it must react by reducing information processing needs or enhancing information processing capacities to maintain a fit between the two and facilitate high new market entry performance (Galbraith, 1974). Compared with other functions in a company, SCM functions are particularly well equipped (i.e., have high ability) to create such a fit (Swink and Schoenherr, 2015).

Viewing the information processing needs first, there is evidence that SCM functions have strong ability to reduce them (Bode et al., 2011; Schoenherr and Swink, 2012). As Bode et al. (2011) note, *buffers* are well-suited to decrease the uncertainty associated with external exchange partners. They might include additional inventories, agile production facilities or a redundancy of suppliers (Tang, 2006). Compared with other functions (e.g., marketing and sales), SCM is involved in both upstream and downstream processes (Jüttner, Christopher, and Baker, 2007). Therefore, the SCM function is better equipped to identify which buffers are best employed where in the different parts of the value chain. Furthermore, SCM has the ability to evaluate how market requirements should be matched against the needed supply chain support structures (e.g., manufacturing and warehousing facilities, transportation routes and modes) (Roh et al., 2016). The SCM function's interpretation of the gathered information might arrive at the conclusion that for a new uncertain market, the firm must account for buffers to cope with demand and supply uncertainty. Typically, the greater the uncertainty, the greater are the

planned lead times, inventory, capacity, and financial resources to not exceed the company's information processing capacity (Galbraith, 1974).

Additionally, the SCM function has the strong ability to decrease the information processing needs of an organization by implementing *self-contained tasks* for a new geographic market. This effect refers to the strategy of providing dedicated resources to a particular new market. If resources are not shared with other market organizations, interdependencies and the need for information processing are reduced significantly (Flynn and Flynn, 1999; Galbraith, 1974). Here, the SCM function is able to identify how best to operationally integrate the new market into the existing supply chain network (Roh et al., 2016). Again, the underlying reason is that holistically analyzing a firm's supply chain lies at the core of the SCM function (Roh et al., 2016), whereas other functions tend to have narrower focusses in optimizing (e.g., procurement on reducing sourcing costs and production on increasing capacity utilization) (Kozlenkova et al., 2015; Mentzer et al., 2008). Based on this analysis, the SCM function will excel at facilitating decisions that support the implementation of the associated level of self-containment to reduce information processing needs to a level that creates fit with the firm's information processing capabilities.

With respect to the second central mechanism posited by IPT, evidence exists that the SCM function is very proficient in increasing information processing capacity via *vertical information systems* and *lateral relationships* (Flynn et al., 2010; Schoenherr and Swink, 2012). Among all functions, the SCM function has the broadest involvement in overarching business processes (Lambert and Enz, 2017; Mentzer et al., 2008; Roh et al., 2016) and is therefore proficient in (1) identifying which new information systems or alterations to existing ones would facilitate information processing fit and in (2) facilitating the decisions necessary to execute such changes. In the context of a new market, the SCM function is able to identify the requirements for vertical information systems that adjust the firm's information processing capacity according to the needs of the new market (Gunasekaran and Ngai, 2004; Wong et al., 2015). As a result, information can be quickly gathered and distributed to the relevant decision makers so that the company can better address uncertainties in the new market (Galbraith, 1974). This improvement in information processing capacity is valuable for new market performance because inter-firm interactions and associated problems become more transparent and can be handled in a concerted manner.

Additionally, the SCM function is good for increasing information processing capability by employing *lateral relationships* through the integration of internal and external exchange

partners. Here, integration is mostly achieved via formalized processes and cross-functional teams (e.g., combined supply and operations planning meetings) (Schoenherr and Swink, 2012). These lateral relationships provide access to knowledge and increased cognitive capacity to gather and interpret data and develop a shared understanding (Schoenherr and Swink, 2012). In a new market, the SCM function has – compared with other functions – a better ability to establish lateral relationships with internal functions and external parties that have market-specific experience and knowledge. This superior ability stems from the SCM function's responsibility to establish and manage critical external and internal exchange relationships (Gonzalez-Loureiro et al., 2015) and its manifold interfaces with other functional departments (Frankel et al., 2008). Accordingly, the SCM function can establish direct and indirect lateral relationships that foster joint decision making. As a result, effective decision making can reside within the market without the need to establish direct links to many other parts of the company.

In general, the implementation of IPT mechanisms has implications for the firm's resource allocation (e.g., incurred costs of buffers and self-contained tasks) and organizational structure (e.g., with respect to lateral relationships) (Busse et al., 2017; Galbraith, 1974; Tushman and Nadler, 1978). The SCM function has direct interfaces with most internal functions (Frankel et al., 2008) and has an overarching view of the firm's value generation (Kozlenkova et al., 2015). This unique position enables the SCM function to understand differing interests and perspectives concerning how resources should be allocated (Roh et al., 2016; Swink, Whipple, and Turkulainen, 2014). Moreover, functional organizations should be structured in terms of internal and external exchange relationships to realize information process fit and thus the best preconditions to succeed in the new market (Flynn et al., 2016; Swink and Schoenherr, 2015).

After having established the SCM function's extensive ability to facilitate decisions that provide information processing fit, we will show how effective choice and implementation of adequate IPT mechanisms requires sufficient SCM influence. Because all functions compete for the available resources and have different perspectives on how the company should be structured (Dougherty, 1992), substantial influence is necessary for the SCM function to convince other functions to incorporate its proposals (Homburg et al., 1999) concerning the most appropriate IPT mechanisms. Specifically, when SCM influence is low, the SCM function has only a very limited possibility to shape decisions to provide best information processing fit and high new market performance. As the influence of SCM grows, it can contribute by increasing information processing fit. In addition to this improvement, an increase in influence

also addresses the potential problem of bounded rationality and equivocality of the other company functions. By increasingly involving the SCM function, bounded rationality and equivocality are better mitigated because the information, experience, and knowledge the SCM provides can be incorporated into decision making. Because of these two effects, increasing SCM influence will lead to enhanced new market performance. However, this positive effect is limited by two factors: a) diminishing marginal effects and b) bounded rationality and equivocality when SCM has very high influence.

Concerning a), the diminishing marginal effect, the reasoning is very simple. Moving from no influence to some influence by SCM improves decision making concerning information processing mechanisms and substantially reduces bounded rationality and equivocality in the decision process. Any further increase is also positive, but as with most factors in management, any positive effects from further increasing the influence will be smaller than the initial improvement (Pierce and Aguinis, 2013).

Concerning b), the problem of bounded rationality and equivocality with high influence, the situation is as follows. When an SCM function – because of high influence – becomes a dominant factor, the decision making process becomes increasingly exposed to the problem of bounded rationality and equivocality because other functions become less and less integrated in decisions and therefore cannot contribute to a broad assessment of the information. The views of the less influential departments will be less and less heard or reflected in deciding on and implementing IPT mechanisms. With respect to bounded rationality, this process leads to a decrease of the organization's cognitive ability because the dominating decision makers on their own will be more limited in their experience, perspectives and availability of information (Schoenherr and Swink, 2012). This limitation decreases the organization's abilities to design and implement effective IPT mechanisms that enhance new market performance. In terms of equivocality, a new market is associated with information that is ambiguous and can be interpreted in a variegated manner (Winkler, Kuklinski, and Moser, 2015). Here, a dominating SCM function that pushes other functions into the background is more prone to a one-sided and, consequently, potentially erroneous interpretation of information. Again, this process will lead to poorer conclusions and in turn to less effective IPT mechanisms. For example, the insights gathered by the marketing and sales function about unique customer behaviors and the need to adapt the service offerings accordingly might be neglected when the marketing and sales function has little influence to shape strategic decisions compared with a dominating SCM

function. Based on this discussion, we conclude that the relationship of SCM influence and new market performance has a curvilinear effect that follows an inverted U-shape:

H1: *SCM function's influence has a negative curvilinear (inverted U-shape) effect on new market performance.*

Relationship of Dispersion of Influence and New Market Performance. Bounded rationality and equivocality are the key aspects of why it is positive for entering new markets to broadly disperse influence on strategic decisions among multiple functions. In contrast to SCM influence, dispersion of influence refers to how concentrated or dispersed the power of different functional groups (e.g., SCM and logistics, marketing and sales, and finance and accounting) is to influence strategic issues that are important to the firm (Krohmer et al., 2002). Given a certain level of SCM influence, dispersion is minimal when all remaining influence lies with only one other function and maximal when all remaining influence is equally distributed among all other functions.

In line with IPT, Krohmer et al. (2002) argue that higher dispersion of influence helps companies in addressing uncertain environments such as new markets. The underlying reason is that dispersion reduces bounded rationality and equivocality.

Bounded rationality can be reduced when multiple functions receive and transmit information that is distributed across the firm's internal and external networks (Swink et al., 2007). Additionally, the information that is shared among analyzed by the functions, incorporating various perspectives and different knowledge bases (Swink and Schoenherr, 2015) because functional departments fundamentally differ in "what they know" and "how they know" (Dougherty, 1992), leads to an increase in decision quality (Eisenhardt and Schoonhoven, 1990). Joint decision making with dispersed influence allows overcoming the bounded rationality of single or a few departmental functions. Furthermore, it reduces the ambiguity of the information (Flynn et al., 2016) by allowing "information to change understanding" (Daft and Lengel, 1986, p. 560) and facilitating "communication transactions that can overcome different frames of reference or clarify ambiguous issues to change understanding" (Daft and Lengel, 1986, p. 560). The result is a more uniform understanding of the analyzed information, leading to a more effective implementation of the decisions made. It is more effective because the decisions are less prone to erroneous assumptions (Troy, Hirunyawipada, and Paswan, 2008), which will enhance performance in entering new markets.

However, it can be expected that an inflection point exists from which an increase in dispersion of influence will lead to a decrease in new market performance from two effects. First, as dispersion grows, its marginal effect in reducing bounded rationality and equivocality diminishes. The underlying reason is similar to the diminishing effect in our first hypothesis. The additional insights created by involving two departments instead of one are much greater than when going from two to three. Second, with increasing dispersion, its drawbacks become more prominent. Moving to high dispersion gradually reduces the firm's ability to adapt quickly to uncertainties and changes, making it more difficult to reach and maintain an effective balance between information processing needs and information processing capacity. As the different functions obtain a more equal voice concerning important decisions, swift decisions tend to be replaced by lengthy debates (Krohmer et al., 2002), which will not only hamper information processing fit but also cause the company to miss out on opportunities that come and go quickly in new markets. Furthermore, equal influence can lead to ineffective compromises due to profoundly different departmental thought worlds (Engelen, 2011; Oswald et al., 2012) reducing the quality of the implemented IPT mechanisms. Therefore, we conclude that the advantages and disadvantages of the dispersion of decision making influence suggest that a medium level of influence dispersion is most beneficial with respect to new market performance. We therefore hypothesize as follows:

H2: *There is a negative curvilinear (inverted U-shape) effect of the dispersion of influence on new market performance.*

Effect of Customer Orientation of the SCM Function. We base our construct of customer orientation on Narver and Slater (1990) and define customer orientation of the SCM function as the seeking of the SCM function to continuously create superior value for current and future customers based on the ability to understand the firm's (potential) customers (Deshpande, Farley, and Webster, 1993; Kohli and Jaworski, 1990; Rindfleisch and Moorman, 2003). Customer orientation plays a particularly important role in entering new geographic markets in which the customers represent a key source of uncertainty (Brouthers et al., 2008; Lee, 2002; Moser et al., 2017; Simangunsong, Hendry, and Stevenson, 2012).

On the one hand, high customer orientation enhances the SCM function ability to facilitate decisions that reduce information processing needs (Archer, Sik Jeong, and Hong, 2007). A customer-oriented SCM function is aware of the customers and how they should be served (Grawe et al., 2009). Therefore, with respect to the first set of IPT mechanisms, the SCM

function not only identifies which type of buffer is needed (e.g., inventory versus slack capacity) but also, with increasing levels of customer orientation, is better at specifying the buffer to best meet the new market's customer needs (e.g., allocating the right amount of finished goods inventory for specific product groups instead of increasing overall inventory levels). A similar logic holds true for self-contained tasks. Here, higher levels of customer orientation allow the SCM function to better structure self-contained tasks because it optimizes information processing fit (e.g., choosing small geographically dispersed warehouses that are best for serving the new customers instead of only implementing a centralized distribution center for customer deliveries).

On the other hand, high customer orientation enhances the SCM function ability to facilitate decisions that optimize information processing capabilities. With higher customer orientation, the SCM function is better at specifying which type of information must be gathered and which information system is best suited to enhance the firm's information processing capabilities (Archer et al., 2007). Here, the employed information systems will be designed to collect the necessary information to predict and understand changing customer preferences (Archer et al., 2007). The better ability to understand the changing customer preferences as a key source of uncertainty allows establishing information processing fit. Likewise, a customer-oriented SCM function has a keen understanding of how lateral relationships should be structured to ensure that relevant customer-related information is quickly shared with individuals and functions within the organization to ensure continuous value creation for the customer and to anticipate future needs (e.g., creating cross-functional teams for dedicated markets or specialized task forces for solving problems on an as-needed basis) (Archer et al., 2007; Grawe et al., 2009; Swanson, 2003).

Overall, customer orientation helps the SCM function to increase its ability to optimize information processing fit, to reduce the uncertainties stemming from customer preferences, and integrates those insights in strategic decision making. Due to the increased abilities, giving the SCM function more influence in strategic decisions will provide a stronger lever amplifying the positive relationship between SCM influence and new market performance:

H3: *The positive effect of the SCM function's influence on new market performance is strengthened (positive interaction) by customer orientation of the SCM function.*

New Market Performance and Firm Performance. Prior research supports the view that geographic expansion in general is positively related to firm performance (Benito-Osorio et al., 2016; Hitt et al., 2006; Lu and Beamish, 2004). The benefits of geographic expansion entail economies of scale and scope, helping to reduce the fluctuation in revenues by spreading investment risk over different countries (Lu and Beamish, 2004), reducing costs and increasing revenues by increasing a firm's market power over its suppliers, distributors and customers (Contractor, 2007), and lowering the cost by enabling arbitrage of differences in input and output markets (Lu and Beamish, 2004). To validate prior findings and to underscore the relevance of new market performance for the setting of our study, we will test this relationship and include the following hypothesis:

H4: New market performance has a positive effect on firm performance.

3.4 Methodology

3.4.1 Sampling and data collection

To examine the hypothesized relationships, we collected primary data for this study by means of a web-based survey in the autumn of 2015. The sample was drawn from a proprietary university database with 2,234 contacts of Europe-based managers from various industries. With respect to the strategic focus of this study, we targeted as key informants employees with managerial responsibilities and a background in SCM (Phillips and Bagozzi, 1986). These managers are usually most knowledgeable about the involvement of various departmental functions in decisions of strategic importance to the firm and for SCM in particular. In total, 308 responses were received, resulting in a satisfactory response rate of 13.8% (Ralston et al., 2015; Wagner and Kemmerling, 2010). Excluding questionnaires from respondents indicating limited knowledge about the SCM function and questionnaires with limited variance (e.g., respondent answered all questions with the same value, such as 1), 276 responses remained for the proceeding analyses. The demographics and descriptive data for our final sample are presented in Appendix 1-1.

3.4.2 Tests for bias

Response bias was assessed using the method suggested by (Wagner and Kemmerling, 2010). First, the sample was divided in three groups based on the time of survey completion.

Second, a two-tailed t-test of mean differences was conducted for all survey items between the two groups of early and late respondents. No significant differences were observed and therefore non-response bias should not represent a serious concern for this study.

Because we made use of a single informant approach, we must account for a potential common method bias (Ketokivi and Schroeder, 2004). For data collection, following the recommendations of Podsakoff et al. (2003), we employed preventative measures that ensured respondent anonymity and measured the dependent and independent variables in different sections of the survey. Furthermore, after data collection, we conducted different statistical techniques to detect the presence of common method bias (Podsakoff et al., 2003).

First, we conducted Harman's single-factor test, which failed to produce evidence of a common method bias (Harman, 1976). Second, a common latent factor (CLF) was added that loads on all items in our final confirmatory factor analysis (CFA) (Podsakoff et al., 2003). The CLF improved the model fit only to a minor extent (i.e., the CFI by 0.02). When analyzing these results both individually and collectively, common method bias was not of concern for this study.

3.4.3 Measurements

The employed constructs for this study were based on an extensive review of the relevant literature and have been adapted to the specific context of this study by involving academic and practitioner experts (Dunn et al., 1994). First, the initial survey instrument was refined based on the feedback obtained through nine in-depth interviews with practitioner experts. Second, a set of ten academics and ten different practitioner experts received a draft questionnaire to control for the clarity, content, and relevance of the survey items. The questionnaire was revised iteratively until no further changes were recommended, thereby ensuring the content and face validity of the survey. The final measurement instrument is displayed in Appendix 3-1.

Measurement and Validation of SCM Influence. SCM influence is based on the measure for marketing influence developed by Homburg et al. (1999), which has subsequently been used by various studies (e.g., Homburg et al., 2014; Krohmer et al., 2002; Verhoef and Leeflang, 2009). In a first step, respondents must allocate 100 points to six functional departments (i.e., supply chain and logistics, marketing and sales, procurement, manufacturing, finance and accounting, and research and development) for ten decisions of strategic importance to the firm. Of these, five decisions were related to general management (e.g.,

strategic direction of business unit and major capital expenditure), and five decisions were related to SCM (e.g., end-to-end supply chain design and long-term supply and demand planning). Respondents were asked to allocate more points to influential departments. In a second step, an index for SCM influence was formed by creating the sum product of the allocated points to SCM across all decisions and the perceived importance for business unit success⁹ of these decisions (Homburg et al., 1999). Finally, the measure was divided by 100 to provide a comparative scale to the other items employed in this study, which used a 7-point Likert scale. Table 3-1 provides a t-test of the raw influence score without factoring in the importance of the individual decisions comparing the SCM function's scores across all decisions and functional departments.

Decisions	SCM & Logistics	Marketing & Sales	Procurement	Manufacturing	Finance & Accounting	R&D
Supply chain management decisions						
Mid-term inventory management	48	15	9	14	13	1
Distribution strategy	42	30	7	9	10	2
End-to-end supply chain design	39	19	10	15	13	4
Long-term supply and demand planning	33	27	9	16	12	3
Sourcing strategy	29	7	34	15	10	5
General management decisions						
Design of overarching business processes	29	24	15	12	15	6
Major capital expenditures	15	<i>16</i>	8	23	29	10
Strategic direction of business unit	14	38	7	11	19	11
Expansion into new geographic markets	13	52	6	8	<i>15</i>	6
New product development	10	34	8	<i>11</i>	<i>10</i>	27

Scores different at $p \leq 0.05$ in bold, $p > 0.05$ in italics.

R&D = research and development.

Note: Sum may not add up to 100 as a result of rounding.

Table 3-1: Influence of functional subunits over strategic decisions II

Dispersion of Influence. Similar to the approach by Krohmer et al. (2002) to capture dispersion by measuring the standard deviations of influence ratings, we captured influence dispersion using a transposed Gini coefficient as a more fine-grained measure. In the extreme case of equal influence across functions, the coefficient is 100. In addition, this measure was

⁹ What is the importance of these decisions for the success of your business unit? (1 = very low importance; 7 = very high importance)

transformed to fit the other items employed in this study. Each observation was initially divided by 100 and then multiplied by 7 to allow an easier interpretation of the tested coefficients because other measurements employed 7-point Likert scales.

Customer Orientation of the SCM function. The customer orientation scale assesses the SCM function's ability to understand and meet customer needs to create value (Sinkovics and Roath, 2004). The scale was adapted to the specific study needs by adding one item to reflect the capability to predict changing customer requirements (Rosenzweig and Roth, 2007).

New Market Performance. For this study the new product development project performance scale by Zacharia and Mentzer (2007) was adapted in an effort to achieve theoretical and operational correspondence with the premises of the current study. In terms of their objectives, product and geographic markets tend to be similar (e.g., profit, budget, market share) rendering the use of an adapted scale feasible. To ensure content and face validity, this scale has been adapted by involving a panel of supply chain professionals and academics. The adapted scale was pretested and met validity and reliability requirements.

Firm Performance. For the measurement of firm performance we adapted the scale developed by Carr and Pearson (1999). Furthermore, we followed the recommendation of Rexhausen, Pibernik, and Kaiser (2012) to assess performance in relation to the respondent's competitors.

Statistical Controls. Following the recommendations by current studies on expansion to new markets, the following statistical controls were utilized: respondent's country of origin, firm size, and industry (Benito-Osorio et al., 2016; Chen et al., 2016).

3.4.4 Reliability and validity of measures

Scale reliability was assessed using composite reliability, which for each construct was greater than the established threshold of 0.70 (Garver and Mentzer, 1999) – see Table 3-2.

A CFA was utilized to assess convergent validity and discriminant validity. To include the single-indicator latent variables (i.e., SCM influence and dispersion of influence) into our measurement model, we followed the recommended procedure of Brown and Moore (2012)¹⁰ that explains how to specify error variances of single-indicator latent variables. The CFA

¹⁰ $\delta_x = \text{VAR}(X)(1-\rho)$; $\text{VAR}(X)$ is the sample variance of the single indicator and ρ is the reliability estimate of the indicator.

measurement model was analyzed using Amos 24, yielding fit indices indicative of adequate fit ($\chi^2 = 121.09$, $\chi^2/df = 1.81$, CFI = 0.97, TLI = 0.97, SRMR = 0.05, and RMSEA = 0.054). All item factor loadings were statistically significant. Convergent validity was established because all constructs demonstrated an average variance extracted (AVE) above the accepted level of 0.50 (Fornell and Larcker, 1981). Discriminant validity was established because for each construct the square root of AVE was greater than the corresponding inter-construct correlations (Fornell and Larcker, 1981). During the CFA one item was dropped from the customer orientation scale and two items were dropped from the new market performance scale – see Appendix 3-1. In summary, these results suggest convergent and discriminant validity for each construct.

Construct	Mean	Std. Dev.	CR	AVE	1	2	3	4	5
1 SCM influence	1.34	0.62	0.88	0.88	0.94				
2 Influence dispersion	2.51	0.98	0.88	0.88	-0.34	0.94			
3 Customer orientation	4.62	1.11	0.86	0.62	0.37	0.06	0.79		
4 New market performance	3.58	0.86	0.88	0.65	0.21	0.15	0.34	0.81	
5 Firm performance	3.74	1.00	0.89	0.68	0.10	0.10	0.21	0.47	0.82

Note: CR = composite reliability, AVE = average variance extracted, square root of AVE is provided on the diagonal in bold; the factor correlations are provided below the diagonal; means and standard deviations taken from the AMOS measurement model.

Table 3-2: Measurement reliability and validity II

3.4.5 Results

To test the hypothesized relationships two models were analyzed using structural equation modeling. Model 1 was utilized to test the hypothesized main effects and model 2 tested the hypothesized moderation effect. Before forming the interaction terms for both models, the items for SCM influence, dispersion of influence, and customer orientation of the SCM function were mean centered (Aiken and West, 1991). All product indicators were formed following the recommendations of Wu et al. (2013), which represent an extension of the seminal work of Marsh, Wen, and Hau (2004) on interactions with latent variables. In line with current literature, we report unstandardized estimates for the curvilinear effects to allow a meaningful interpretation (Aiken and West, 1991; Hayes and Matthes, 2009). The fit indices for the main effects model indicate adequate fit ($\chi^2 = 275.49$, $\chi^2/df = 1.22$, CFI = 0.98, TLI = 0.95, SRMR = 0.04, RMSEA = 0.029). The test results are provided in Table 3-3.

Relationships	Hypothesis	Model 1			Model 2		
		Main effects			Moderation effects		
		β	b	S.E.	β	b	S.E.
SCM influence \rightarrow NMP		0.36	0.50**	0.12	0.17	0.24*	0.12
SCM influence squared \rightarrow NMP	H1 (\cap)	-0.19	-0.13*	0.07	-0.23	-0.16**	0.06
Dispersion of influence \rightarrow NMP		0.18	0.16*	0.07			
Dispersion of influence squared \rightarrow NMP	H2 (\cap)	0.10	0.06	0.05			
Customer orientation \rightarrow NMP					0.33	0.25**	0.06
SCM influence x customer orientation \rightarrow NMP	H3 (+)				0.20	0.22*	0.09
NMP \rightarrow Firm performance	H4 (+)	0.49	0.55**	0.08	0.49	0.56**	0.08
<i>Controls</i>							
Firm size \rightarrow NMP		0.04	0.04	0.05	0.06	0.05	0.05
Firm size \rightarrow Firm performance		0.09	0.08	0.05	0.09	0.08	0.05
Industries		Included			Included		
Countries		Included			Included		
R ² for New Market Performance		0.19 (0.09)			0.22 (0.09)		
R ² for Firm Performance		0.30 (0.08)			0.30 (0.08)		

†p \leq 0.10; *p \leq 0.05; ** p \leq 0.01.

() R² with controls only.

β = Estimates for standardized solution; t-values from unstandardized solutions.

b = Estimates for unstandardized solution; NMP = New market performance.

Supported hypotheses in bold.

For brevity reasons we have not listed the statistical values for control variables.

“Industrial goods and services” served as the baseline category for “Industry” and “Germany” served as the baseline category for “Country”.

Table 3-3: Hypothesis test results II

SCM Influence and New Market Performance. Hypothesis 1 addresses the effect of SCM influence on new market performance. The results suggest a significant inverted U-shaped relationship (b = -0.13, p \leq 0.05), which provides support for H1. We created a Johnson-Neyman plot using tools developed by Miller et al. (2013) to ascertain when the conditional effects of SCM influence on new market performance are statistically significant. Figure 3-2 depicts the conditional effect of SCM influence on new market performance across values of SCM influence from -1.5 to +3.0 standard deviations, suggesting that the marginal effect diminishes as SCM influence grows and that the effects are significant to 1.6 standard deviations above the mean of SCM influence with p \leq 0.05.

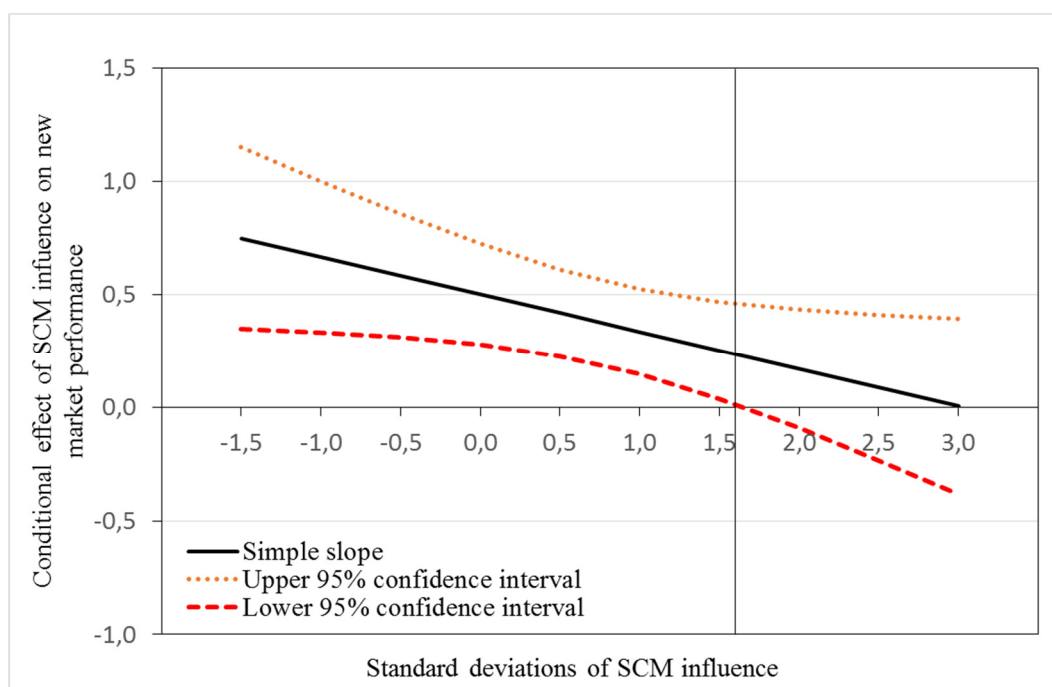


Figure 3-2: Johnson-Neyman plot of the conditional effect of SCM influence on new market performance

Dispersion of Influence and New Market Performance. Hypothesis 2 examined the relationship between dispersion of influence and new market performance. Contrary to our hypothesis, dispersion of influence only has a significant linear effect on new market performance ($b = 0.16$, $p \leq 0.05$), whereas the curvilinear effect is not significant ($b = 0.06$, $p \geq 0.10$), therefore, H2 is rejected.

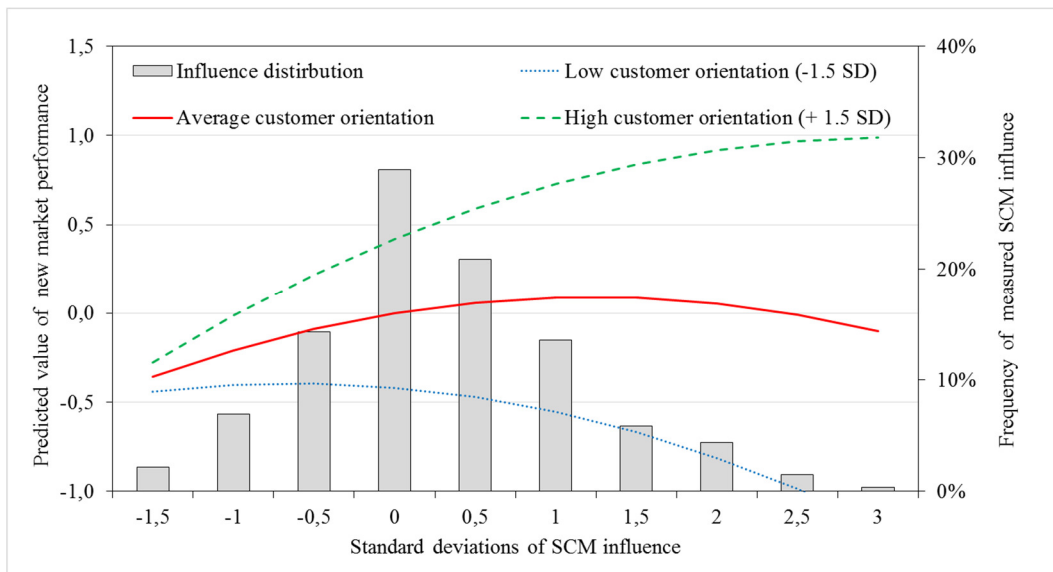
New Market Performance on Firm Performance. Hypothesis 4 postulates a positive effect of new market performance on firm performance. This hypothesis finds support because the path coefficient is positive and highly significant ($b = 0.55$, $p \leq 0.01$).

3.4.6 Moderation test

Also the fit indices for the moderation model indicate adequate fit ($\chi^2 = 557.22$, $\chi^2/df = 1.35$, CFI = 0.96, TLI = 0.94, SRMR = 0.05, and RMSEA = 0.036).

Effect of Customer Orientation of the SCM Function. Hypothesis 3 addresses the moderating role of customer orientation on the relationship between SCM influence and new market performance. The positive interaction effect of customer orientation with SCM influence ($b = 0.22$, $p \leq 0.05$) provides support for H3 and the assumption that customer-

oriented SCM functions are better at identifying strategic decisions that establish processing fit and in turn enhance new market performance. In Figure 3-3, the predicted value of new market performance is displayed when customer orientation is low (-1.5 standard deviations below the mean), at the mean, and high (+1.5 standard deviations above the mean) for values of SCM influence from -1.5 standard deviations to +3.0 standard deviations. This range represents 98.9% of the analyzed cases.



Note: SD = Standard deviation.

Figure 3-3: Predicted value of new market performance across SCM influence for different levels of customer orientation

Figure 3-3 offers interesting insights: when customer orientation is high, increasing SCM influence results in higher predicted new market performance, but at a diminishing rate. However, if the SCM function's customer orientation is low, increasing SCM influence results in lower predicted new market performance. A set of Johnson-Neymann plots was created to probe for which values of SCM influence the tested relationship is significant (Miller et al., 2013). The rules for linear combinations posited by Aiken and West (1991) were used to derive the standard errors for the conditional effect of SCM influence on new market performance across values of SCM influence ranging from -1.5 to +3.0 standard deviations. For low customer orientation (-1.5 standard deviations below the mean), the simple slopes are significant, with $p \leq 0.05$ for values above 0.6 standard deviations of SCM influence – see Figure 3-4. For high customer orientation (+1.5 standard deviations above the mean), the simple

slopes are significant for values below 1.6 standard deviations of SCM influence with $p \leq 0.05$ – see Figure 3-5.

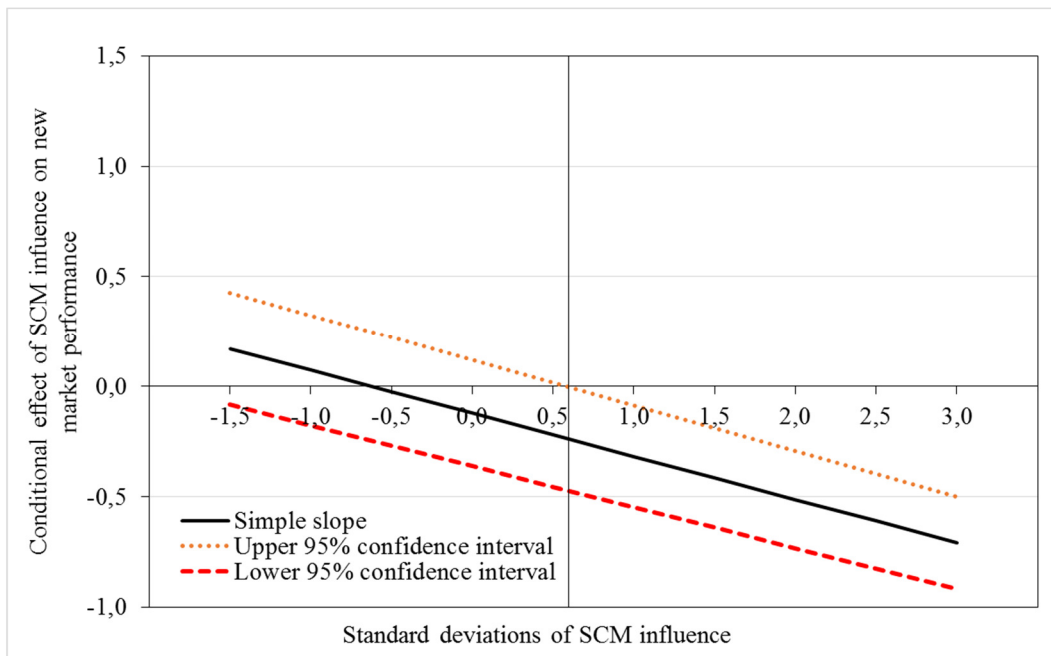


Figure 3-4: Johnson-Neyman plot of the conditional effect of SCM influence on new market performance when customer orientation is low

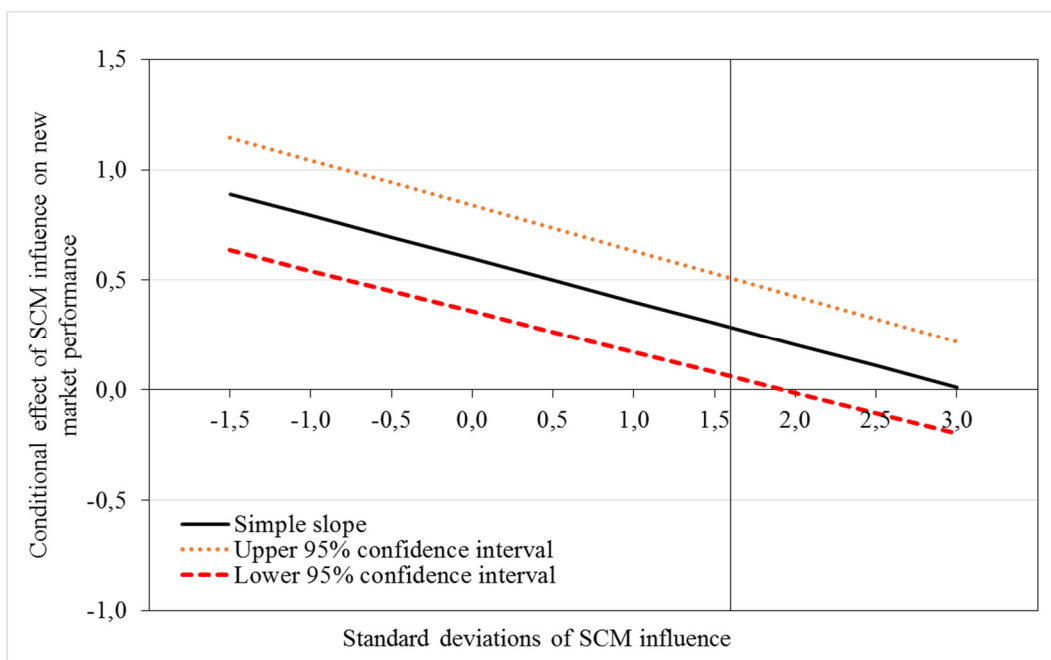


Figure 3-5: Johnson-Neyman plot of the conditional effect of SCM influence on new market performance when customer orientation is high

3.5 Discussion

Building on information processing theory, this research focused on the link between supply chain management influence and new market performance. To account for bounded rationality and equivocality, SCM influence was complemented with the dispersion of influence among various departments. Furthermore, we showed that customer orientation of the SCM function strengthens the relationship between SCM influence and new market performance and that new market performance has a positive effect on overall firm performance. In the following section we discuss the theoretical implications for the supply chain and management literature, present managerial implications, and outline limitations as well as avenues for further research.

3.5.1 Theoretical implications

Current research on the SCM function's involvement in corporate strategy and its effect on firm-level outcomes has been increasing (Patel et al., 2013; Roh et al., 2016; Wagner and Kemmerling, 2014). Prior research agrees that the alignment of SCM and firm-level strategy has positive effects on organizational outcomes (Esper et al., 2010a; Gonzalez-Loureiro et al., 2015; Hult et al., 2007a; Sandberg and Abrahamsson, 2010). However, much remains unknown about how different levels of SCM influence over specific strategic issues do affect organizational outcomes. This study represents, to our knowledge, one of the first to examine the relationship between SCM influence and new market performance as an organizational outcome and makes several noteworthy contributions to the supply chain and management literature.

This study provides strong support for our information processing theory-based theorizing (Galbraith, 1974) that an influential SCM function is particularly well suited to shape decisions that balance a firm's information processing needs and capacity required for successfully entering a new market. The two central mechanisms around buffers and slack resources and the investments in vertical information systems and lateral relationships build the core in explaining how an influential SCM function can enhance new market performance. In fact, the current supply chain literature deems lateral relationships in the form of supply chain integration most effective to enhance performance outcomes (Flynn et al., 2016; Swink and Schoenherr, 2015; Thornton et al., 2016). Note that supply chain integration is an operational aspect of a firm's strategic directive. Consequently, this form of lateral relationship will only emerge when the associated strategy has been formulated (Perez-Franco et al., 2016). Therefore, the likelihood of successfully implementing the information processing theory

mechanism is higher at adequate levels of SCM influence. This finding complements the recent study of Roh et al. (2016), who demonstrate that firms that expand to new markets significantly benefit from the presence of Chief Supply Chain Officers in the realm of strategic decision making. Here, the presence of a Chief Supply Chain Officer serves as a proxy for high SCM influence. When connecting these insights to our analysis, we find that the majority of SCM functions still have rather low influence. Therefore, an opportunity exists to increase their influence and consequently enhance new market performance – see Figure 3-3.

Increasing SCM influence above moderately high levels, however, leads to lower performance, which provides a new perspective on the internal integration literature (Flynn et al., 2016; Schoenherr and Swink, 2012; Wong et al., 2011). SCM influence, with its focus on shaping strategic decisions and goals, can be viewed as a proxy for internal integration because internal integration is also known as a means to facilitate interaction, information sharing, and collaboration that creates mutual alignment of cross-functional interdependencies (Kahn and Mentzer, 1998; Morash and Clinton, 1998; Pagell, 2004). Current studies in this domain have focused on the positive effects of internal integration to overcome the problems associated with bounded rationality and equivocality (Schoenherr and Swink, 2012; Swink and Schoenherr, 2015) and provide evidence for a positive linear relationship of internal integration and various performance outcomes. However, these studies do not offer theoretical arguments or empirical evidence on how this integration should be structured with respect to departmental influence. Our study contributes to this field by offering arguments and empirical evidence that collaborative decision making does indeed enhance performance outcomes (Daft and Lengel, 1986; Swink and Schoenherr, 2015) but that it is also important to consider how this collaboration is structured in terms of departmental influence and that very high levels of SCM influence are detrimental to performance.

In addition, the findings with respect to H3 are particularly noteworthy. In essence, it can be concluded that higher customer orientation is useful for the SCM function for achieving information processing fit and that giving influence to an SCM function that exhibits high customer orientation leads to enhanced new market performance. In contrast, an SCM function with low customer orientation should receive less influence. Our study thereby extends current research on customer orientation that has thus far mostly focused on linear relationships of customer orientation with various performance outcomes such as innovativeness and logistics performance (Grawe et al., 2009; Hult, Hurley, and Knight, 2004; Wang, Zhao, and Voss, 2016).

Contrary to our theorizing, we did not find an inverted U-shape relationship but only a positive linear relationship between dispersion of influence and new market performance, and therefore rejected H2. Our results provide a certain contrast to the findings of Engelen (2011) that, in support of an inverted U-shaped relationship, indicate that both the equal involvement of all departments in strategic decisions at the organizational level and maximal influence of a single department cause lower performance. This discrepancy could possibly be attributed to the different context of this study. With respect to entering new geographic markets, firms do not appear to experience the drawbacks of ineffective and costly decision making that is caused by dispersed influence across departments. One possible explanation for this result might be that the benefit of involving multiple departments in decision making is greater for entering new geographic markets than are the detrimental effects of slow and less-effective decision making.

In addition to those main findings concerning the influence of the SCM function, this research also views the link between new market performance and firm performance and confirms prior research (Benito-Osorio et al., 2016; Hitt et al., 2006; Lu and Beamish, 2004) indicating that geographic expansion has a positive effect on firm performance.

3.5.2 Managerial implications

Our results are relevant for managers participating in strategic decision making, because the allocation and distribution of functional influence affects organizational performance outcomes (Homburg et al., 1999). In particular, when entering new markets, managers should be aware of the SCM function's ability to facilitate decisions that establish information processing fit better than do other functions. A prerequisite for achieving this information processing fit is an adequate level of influence over strategic decisions for the SCM function. Here, for finding the adequate level, it is important for managers to recognize the combined effects and costs of implementing mechanisms that decrease information processing needs and increase information processing capabilities (Galbraith, 1974) and the effects from bounded rationality and equivocality (Daft and Weick, 1984; Galbraith, 1973).

Furthermore, managers should incorporate the increasing importance of the SCM function's customer orientation in guiding their decisions when entering a new geographic market (Gligor, 2014; Grawe et al., 2009; Jüttner and Christopher, 2013). Our study shows that firms benefit from enhanced new market performance when managers increase the functional influence allocated to the SCM functions that demonstrate medium to high customer

orientation. An adequate level of customer orientation provides the SCM function the ability to facilitate decisions that provide better information processing fit through a better understanding of changing customer preferences and future demands (Grawe et al., 2009). In contrast, managers should refrain from giving more influence to an SCM function with low customer orientation, because low customer orientation impairs new market performance.

3.5.3 Limitations and future research

Although our study offers both theoretical and managerial insights concerning the relationship of SCM influence with new market performance, it is not free from limitations.

First, our research provides thorough arguments that higher SCM influence yields more-effective implementation of information processing theory mechanisms, but we did not consider differences in influence among different supply chain managers. Here, research that combines our results with those of Wichmann et al. (2016) to gain a better understanding of how and via which network connections individual SCM managers influence the decisions that optimize information processing fit would be fruitful.

Second, we limited our study to new market performance as the single dependent variable of SCM influence and influence dispersion. Although we deemed new market performance an important outcome variable that is affected by SCM influence, further research should investigate a broad array of additional outcomes to provide a more holistic perspective of the effects of functional influence. Potential outcome variables might include supply chain orientation, internal and external integration, agility, and robustness among others. In the same vein, additional moderating variables of the relationship among SCM influence, dispersion of influence and new market performance and other outcome variables should be investigated. The most important area for further research relates to an improved understanding of moderating variables that render the curvilinear relationship of dispersion of influence with new market performance effective, thereby providing new boundary conditions for information processing theory describing when bounded rationality (Galbraith, 1973) and equivocality occur (Daft and Weick, 1984).

Third, the employed set of ten strategic decisions possibly evolves over time. For example, it can be assumed that the growing importance of business model digitalization (Singh and Hess, 2017) should be reflected in future influence measures. In this context, it appears advisable to include a decision pertaining to the question of which function should guide this transformation.

Finally, this study provides valuable insights into the relationship of SCM influence and new market performance with relatively high information processing needs. Future research should examine how the role of SCM influence might change with respect to areas in which uncertainty is lower and processing a high volume of information is thus less important.

4 Influence differences between SCM and marketing¹¹

¹¹ This chapter is based on the unpublished manuscript by Patschke and Wallenburg (2017): “Influence Differences between the Supply Chain Management and the Marketing Function: Impact on Supply Chain Performance”.

4.1 Introduction

As firms increasingly compete on a supply chain versus supply chain basis (Hult et al., 2007a; Kozlenkova et al., 2015), high performing supply chains are more important than ever for end customer value creation (Fawcett and Waller, 2013). Fawcett and Waller (2013) established a framework of supply chain performance (SCP) that consists of the firm's value proposition and its ability to deliver this value. Such performance is facilitated by integration of activities among companies in the supply chain (Leuschner, Rogers, and Charvet, 2013; Ralston et al., 2015) and among functions within a firm (Gimenez and Ventura, 2005; Springinkle and Wallenburg, 2012; Swink and Schoenherr, 2015). Here, it is paramount to first take strategic decisions that integrate functions which define the firm's value proposition and its ability to deliver this value (Christopher and Ryals, 2014), before corresponding activities can be established across the entire supply chain (Esper et al., 2010b; Green et al., 2012).

In light of this challenge, this research is focused on the interplay between the marketing & sales¹² (marketing) function and the supply chain management & logistics (SCM)¹³ function and its relationship with supply chain performance for several reasons. On the one hand, marketing's strength lies in defining customer value propositions (Jaworski and Kohli, 1993; Kohli and Jaworski, 1990). On the other hand, the SCM function's strength is defining the firm's ability to deliver the defined value proposition (Fawcett and Waller, 2013) represented by efficiently matching supply with demand (Rainbird, 2004), while taking into account capacity constraints and opportunities (Esper et al., 2010b), leading to higher responsiveness (Jüttner, Christopher, and Godsell, 2010), increased efficiencies, and enhanced customer satisfaction (Stock, Boyer, and Harmon, 2010). Further, Christopher and Ryals (2014) demonstrate that SCM and marketing are inextricably linked and should be managed integratedly, and Esper et al. (2010b) note that the interplay between the two departments shapes the demand, and creates and executes the supply chain capabilities which are especially important for establishing strategic integration that enhances SCP.

¹² Sales can be considered as a core process within a broader marketing conception (Lusch et al., 2010; Mentzer et al., 2008). Consequently, we have combined the two terms for brevity.

¹³ Most firms label the function that is responsible for logistics and SCM activities either as SCM or as logistics (Mentzer et al., 2008). Consequently, we have combined the two terms for brevity.

How strategic decisions are facilitated is largely determined by the influence of functional departments (Homburg et al., 1999), where influence relates to a department's ability to change the behavior of other departments regarding strategic decisions of importance to the firm. Here, a department with more influence will have a higher ability to shape decisions to reflect its own perspectives and objectives (Engelen, 2011; Oswald et al., 2012). With the aim of establishing a clear link from the SCM function's and of the marketing function's influence to SCP, we conceptualize two decision areas related to SCP: general management (GM) decisions that pertain to defining the firm's value proposition and SCM decisions that refer to the firm's ability to deliver this value to the customer.

The views each function follows during decision making can be attributed to their specific perspectives, called departmental thought worlds (Douglas, 1987). In this respect, Dougherty (1992) distinguishes between systems of meaning and funds of knowledge that establish a thought world, which more recent research refers to as a department's orientations and competences (Homburg and Jensen, 2007). Such distinct thought worlds within departments pose the advantage of facilitating the effective and efficient execution of tasks (Dougherty, 1992). Moreover, differences among departments can increase performance (Homburg and Jensen, 2007), but also hamper collaboration (e.g., Dougherty, 1992; Homburg and Jensen, 2007; Niranjana et al., 2014).

This research builds on the concept of thought worlds and combines them with departmental influence to investigate how the influence of the marketing and SCM function on strategic decisions influences SCP. With that it expands prior research that has offered noteworthy contributions on the interplay of marketing and SCM (Dougherty et al., 2009; Ellinger et al., 2006; Fugate et al., 2008; Mentzer et al., 2008), but has, so far not looked at the role of departmental influence with respect to SCP. More specifically, so far, no research sheds light on the question whether the marketing or the SCM function's influence should prevail in decision making in order to enhance SCP or if their influence and accordingly their thought worlds should be reflected to equal portions. Against this background, the present research will address influence differences via the following research question:

***RQ:** What is the effect of influence differences between the marketing function and the supply chain management function on supply chain performance?*

To answer the above question, this paper is structured into three parts: first, a conceptual framework is developed and two hypotheses examining the relationship of influence differences between SCM and marketing with SCP are formulated. Next, a survey-based data collection from Europe-based managers with a background in supply chain management is outlined and the 276 responses analyzed using structural equation modeling. The paper concludes by discussing the theoretical and managerial implications, as well as presenting the study's limitations and possible avenues for further research.

4.2 Conceptual framework

This section describes supply chain performance as an outcome variable, establishes departmental influence and departmental thought worlds as the theoretical base of this paper, and applies it to the SCM and the marketing function. Further, hypotheses are developed regarding the relationship of influence differences between SCM and marketing with SCP.

4.2.1 The role of SCM and marketing for supply chain performance

Recently, Kozlenkova et al. (2015) highlighted the interplay between the SCM and marketing functions by addressing the mutual dependency of the SCM and marketing functions to create customer value through high performing supply chains from a theoretical and practical perspective. While the marketing function's main concern is creating value for the end customer, marketing also depends on the SCM function to efficiently deliver this value (Kozlenkova et al., 2015).

With the aim of reflecting this interdependency, the SCP conceptualization is built on a framework developed by Fawcett and Waller (2013) describing how the SCM function and marketing function combined define the firm's value offering to the end customer and its ability to deliver this value. This framework includes commonly used supply chain performance measure types (e.g., cost and responsiveness) (Beamon, 1999) and extends them by additional customer value dimensions (e.g., quality and innovation) (Fawcett and Waller, 2013). In this context, the marketing function translates customer needs into product/service requirements, such as quality, and communicates the product's value, thereby facilitating the exchange with the end customer which defines the value offering (Mentzer et al., 2008). The SCM function's overarching responsibility is to transform inputs into outputs, make those outputs available at a time and place according to customer expectations and thereby facilitating the value delivery

(Fawcett and Waller, 2013). This framework of SCM and marketing is further supported by Esper et al. (2010b) who demonstrate that the SCM function is mostly concerned with the effective management of supply-focused processes, while the marketing function concentrates its main efforts on demand-focused processes. Yet, both sets of processes are inextricably intertwined, both at the strategic and operational level (Esper et al., 2010b; Ketchen and Giunipero, 2004) to facilitate superior SCP and in turn customer value (Jüttner et al., 2010).

In line with current research, we further conceptualize SCP relative to the firm's major competitors (Rexhausen et al., 2012; van der Vaart and van Donk, 2008) as a part of firm performance (Li et al., 2006; Qrunfleh and Tarafdar, 2014). In doing so, the marketing function defines on which basis (i.e., type of product/service) the firm competes against rivals, and the SCM function defines the firm's ability to deliver the value reflecting the created customer expectation by marketing. Consequently, SCP becomes a relative measure where a firm's SCP and ultimate value delivery to the customer depends on the customer's perception that the focal firm has greater ability to achieve lower costs, better quality, better responsiveness, and better innovation than rivals.

4.2.2 The different thought worlds of SCM and marketing

It is evident that functional departments fundamentally differ in their perspectives concerning the same objects, at times it can even appear as if they operate in entirely different universes (Niranjan et al., 2014). Comparing this to dysfunctional relationships of individuals, Dougherty (1992, p. 191) notes that each person "tells a complete story, but tells a different one". Here, the underlying reason is that instead of looking at different aspects, they view the same aspects differently and as a result draw different conclusions. Further, departmental thought worlds are composed of two distinct aspects: differences in "what they know" and "how they know" (Dougherty, 1992), where shared orientations and shared competences influence how members within a department collectively interpret, think (Homburg and Jensen, 2007; Kotlarsky, van den Hooff, and Houtman, 2015), and consequently, act. Further, they facilitate the formation of enclosed groups based on a joint understanding, where each group forms a distinct thought world (Dougherty, 1992).

The thought worlds that differ between departments are shaped by two dimensions, the orientations and the competences of the specific department (Homburg and Jensen, 2007). While orientations represent the objectives and time horizons that functional departments use

as a reference to organize their activities, competencies are largely determined by the department's technical capabilities (Engelen, 2011).

Orientations. The original work of Lawrence and Lorsch (1969) introduced several departmental orientations of which goal orientation and time orientation are most frequently used in current research (Dougherty, 1992; Griffin and Hauser, 1996). In our conceptual framework we build on this dichotomy to develop the departmental thought worlds of SCM and marketing.

Goal orientation refers to which objectives a functional department seeks to optimize. Regarding goal orientation, the SCM function has been described as inwardly focused with a high process orientation (Mentzer et al., 2001) concentrating its efforts on efficient resource utilization and cost reduction (Jüttner et al., 2007). In contrast, marketing is externally focused with particular emphasis on market orientation (i.e., a focus on market development, competitors, products), as well as customer relationship management to increase revenue streams (Homburg and Jensen, 2007; Jüttner et al., 2007; Jüttner et al., 2010). When describing departmental thought worlds it is important to note that the highlighted differences refer to preferences or a natural inclination of those functions in comparison to other functions. For example, the SCM department is *more* oriented to reduce costs than marketing, but this does not mean that it will completely neglect revenues.

With respect to time orientation, Homburg and Jensen (2007) argue that it affects a department's judgement on organizational resource investments. Top management often considers one of the supply chain function's task to reduce costs in the short-term, which is problematic as short-term profits can diminish value creation in the longer term (Jüttner et al., 2010). In contrast marketing and sales have been described as having medium-term time horizon developing new and existing markets (Homburg and Jensen, 2007) and further that sales is focused on increasing revenues in the short-term (Cespedes, 1995; Lorge, 1999; Oswald et al., 2012).

Competences. The competence dimension refers to the specialized knowledge that a department creates due to the division of labor and accompanying specialization of tasks (Homburg and Jensen, 2007). Here, Dougherty (1992) frames the distinction of "technology-market funds of knowledge", where market knowledge pertains to the external context and technology to the internal context an organization faces. In our framework, market knowledge

represents the external domain and process knowledge represents the internal domain that the SCM and marketing functions have to deal with.

Market knowledge is defined as the extent to which a typical employee of the respective function is knowledgeable about competitors and customers (Homburg and Jensen, 2007). Market knowledge is paramount for employees in the marketing department, as it directly influences their ability to successfully determine how the firm creates value for its customers better than its rivals to enhance revenues (Krasnikov and Jayachandran, 2008). And while earlier research notes that employees within logistics frequently exhibit shortcomings in market knowledge (Burcher, Lee, and Sohal, 2007; Flint and Mentzer, 2000), employees of the SCM function are increasingly described as more customer and market-oriented (Grawe et al., 2009). This is due to the SCM function having a strong focus on managing upstream and downstream relationships with increased complexity and uncertainty that require a profound understanding of market facing activities and customer requirements (Ellinger and Ellinger, 2013; Sweeney, 2013).

In contrast, process knowledge refers to the knowledge regarding the coordination of information and material flow processes within the firm and up- and downstream from the firm. It constitutes a basic requirement for SCM personnel and one of its core competences, where an equally high degree of specialization is to be expected as for marketing in the field of market knowledge (Christopher, 2012; Ellinger and Ellinger, 2013; Sweeney, 2013). In contrast, marketing personnel has overall lower process knowledge because is mostly concerned with managing and facilitating customer-related processes (Esper et al., 2010b; Jüttner et al., 2007). Table 4-1 displays the different thought worlds of SCM and marketing.

	SCM	Marketing
Orientations		
Goal orientations	Costs Process optimization	Revenues Market orientation Customer relationship management
Time horizon	Short-term	Medium-term
Competences		
Market knowledge	Medium	High
Process knowledge	High	Medium

Table 4-1: Comparison of SCM and marketing thought worlds

4.2.3 Conceptual foundation of departmental influence

Functional departments exhibit different objectives, resource requirements and are of varying importance to achieve the firm's objectives (Feng et al., 2015). This difference leads to the emergence of inter-departmental power structures (Pfeffer, 1981; Pfeffer and Salancik, 1978), where power refers to a department's ability to change the attitudes and behaviors of other functional departments over strategic issues important to the firm (Homburg et al., 1999). Influence of a functional department is the successful exercise of power, which departments use to pursue their own agenda and objectives. Here, a functional department's influence relates to strategic decisions that involve multiple departments across the organization, as opposed to strategic decisions in a particular function's direct sphere of responsibilities (e.g., pricing in the case of marketing) (Engelen, 2011).

We identified ten strategic decisions that should be investigated to better understand how the influence of the SCM function and marketing function affect SCP. The ten issues were selected to represent a collection of strategic decisions of high importance that are indicative for the success of the business unit, and further, that are typically not entirely controlled by a single functional department (Homburg et al., 1999). Further, we split the ten decisions in the two areas based on our framework for SCP that describe the range of strategic choices a company facilitates: the definition and the delivery of value propositions to a specified group of customers (Day, 1999).

With respect to defining customer value propositions, decisions pertaining to GM largely determine on which basis the firm competes (e.g., which strategy to pursue, which new products are being launched or markets entered) (Esper et al., 2010b) and how the firm is guided its resource investment towards value creating initiatives (Esper et al., 2010b) (e.g., allocating major capital expenditures to follow a certain strategy or product development, integrating business process across functions and external exchange partners). Quite similarly, strategic decisions in the field of SCM can be assumed to determine how the value is efficiently delivered to the customer (Fawcett and Waller, 2013). For example, decisions on distribution strategy determine where and when a customer can utilize the product/service (Jüttner et al., 2010).

Both the SCM function and the marketing function have an interest in influencing GM and SCM decisions as they ultimately determine SCP and in turn firm performance. However, extant research demonstrates that functional departments have different perspectives how an objective can be reached (Dougherty, 1992; Homburg and Jensen, 2007). The more influential

a departmental function is, the better it can convince other organizational members to follow its perspectives and thereby largely determine the formulation of strategic decisions (Engelen, 2011). This further supports our aim to identify how the distribution of influence between the SCM and marketing function affects SCP. A list of the strategic decisions used in this study with respect to the area of GM and SCM is displayed in Appendix 4-1.

4.2.4 Hypothesis development

According to Verhoef and Leeflang (2009), a department can dominate the broader organizational direction given a strong influence. Further, in determining the direction, a department is guided by its respective thought world (Engelen, 2011). We build on the rationale that the difference in influence between the SCM and marketing function reflects to which degree a particular thought world dominates. Next to firm characteristics as control variables, our model also includes the level of influence of the other functional departments that we did not focus on in this study. Accordingly, we account for effects when the combined influence of SCM and marketing is low or high. The conceptual model is depicted in Figure 4-1.

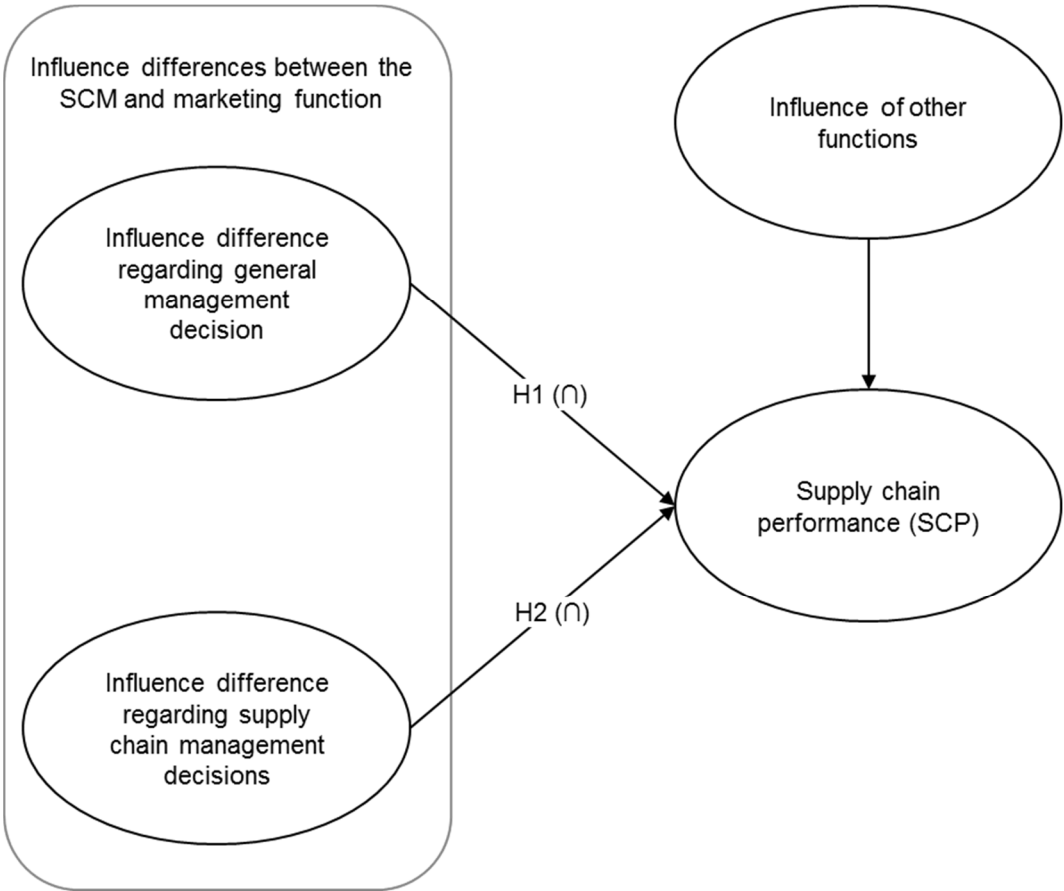


Figure 4-1: Conceptual model III

We posit that an equal influence between SCM and marketing on GM decisions will have a positive effect on SCP, for SCM decisions a predominance of the SCM function will be beneficial. This can be concluded based on the departmental thought world perspective as outlined in the following.

Integrating differences in orientations leads to an increase of decision quality, as more diverse arguments are discussed and processed, and contrasted with alternatives (Eisenhardt and Schoonhoven, 1990). This allows to better develop customized offerings that are competitive and achievable (Daugherty et al., 2009) based on the enhanced identification and exploitation of the strengths and competencies of individual functions (Koufteros, Rawski, and Rupak, 2010). This may also be described as internal integration among functional departments, which has been shown to facilitate performance (Ralston et al., 2015; Springinkle and Wallenburg, 2012; Swink and Schoenherr, 2015).

Viewing competence differences, the literature provides mixed results. On the one hand, differing competences have been shown to decrease performance outcomes (Homburg and Jensen, 2007). Pronounced differences in competences lead to interpretative barriers (Dougherty, 1992; Kotlarsky et al., 2015; Niranjana et al., 2014), department specific communication patterns (Tushman and Nadler, 1978) and selective perception (Dearborn and Simon, 1958), all of which are representative for differing thought worlds (Dougherty, 1992), that impede cooperation among departments. On the other hand, there is strong evidence that the interaction of specialized employees allows the access to boarder information and knowledge (Milliken and Martins, 1996). Incorporating this better access allows to shape decisions that better utilize the firm's resources to meet its goals (Keller, 2001). Further, it has been shown that when the competencies are different, but can be deemed as complementary, it even enhances decision quality and performance outcomes (Dooley and Fryxell, 1999; Jehn and Mannix, 2001; Jüttner et al., 2007; Milliken and Martins, 1996)

With respect to GM decisions, the marketing function seeks to define the customer value by shaping strategic decisions that reflect its orientations and competences. Accordingly, the marketing function would use its high market orientation (Jaworski and Kohli, 1993; Kohli and Jaworski, 1990) and high market knowledge to identify customer needs and translate them into product or service offerings (e.g., new product development and new geographic customer markets) (Jüttner et al., 2007). Further, the marketing function emphasizes the effective service of customer needs (Esper et al., 2010b). Therefore, based on its market orientation, the marketing function would facilitate a strategic direction of the firm that is best suited to enhance

the firm's competitive position and accordingly increase revenue streams (Jaworski, Kohli, and Sahay, 2000), while also shaping decisions that support the allocation of resources to support this development. If influence is balanced, the SCM function would complement the marketing function's strategic decisions guided by its own departmental thought world. Here, the SCM function's orientations (i.e., cost, process, short-term) and competences (i.e., high process knowledge) serve as a counter balance. The SCM function's orientations shift the focus to the efficient value delivery to the customer (Esper et al., 2010b). Hence, the SCM function would highlight the associated costs with extending existing supply chain networks or building new ones to serve new markets and customers. The SCM function's and the marketing function's competences may be different, but not different enough to create substantial interpretative barriers. This can be concluded based on the effective and efficient value delivery that is achieved across industries via integrated sales and operations planning meetings (Rexhausen et al., 2012). It follows that the nature of these decisions takes both aspects of value creation into account, that is value definition and value delivery, and accordingly will enhance costs, quality, responsiveness, and innovation compared to the firm's rivals.

With respect to SCM decisions, which determine how the customer value is efficiently delivered, the SCM function focusses on shaping strategic decisions that optimize the transformation of inputs to outputs, and making those outputs available at a time and place according to customer expectations (Fawcett and Waller, 2013). Accordingly, an influential SCM function would use its cost, process, and short-term orientation, as well as high process knowledge to shape decisions that optimize the current end-to-end supply chain setup in terms of cost (i.e., cost and short-term horizon) to facilitate efficient value delivery to the customer (Esper et al., 2010b). Further, the SCM function's medium market knowledge allows the SCM function to shape strategic distribution decisions that adequately meet the customer's expectation in terms of how and when they want to be served (e.g., responsiveness) (Grawe et al., 2009; Jüttner et al., 2010).

Different from GM decisions, a predominance of SCM for SCM decisions has a positive effect on performance. The underlying reason is that the engagement in tightly inter-coupled firm networks spanning multiple regions across the globe gives rise to complexity and uncertainty (Bode et al., 2011), which requires profound process knowledge and orientation in order to shape decisions that effectively manage these challenges and lead to enhanced SCP (Christopher, 2012; Ellinger and Ellinger, 2013). Further, the decisions pertaining to SCM should structure the supply chain with its internal as well as external upstream and downstream

exchange partners from an “inwardly focused vertical structure to an outwardly focused horizontal business” (Christopher, 2012, p. 7). This focus on managing processes allows to better cope with the rapidly changing customer requirements, and increases responsiveness. Here, it is essential to establish cross-functional teams across departments and external exchange partners based on well-defined processes to create and deliver value to the end customer (Christopher, 2012). Unlike marketing, the SCM function has interfaces to most internal departments as well as external exchange partners (Frankel et al., 2008; Gonzalez-Loureiro et al., 2015; Kozlenkova et al., 2015), thus enabling the SCM function to better integrate strategic decisions not only internally, but across supply chain partners, and thereby leading to enhanced SCP (Bode et al., 2011; Christopher, 2012; Ellinger and Ellinger, 2013).

Nevertheless, the marketing function’s thought world should not completely be neglected as it offers complementing value. For example, the marketing function’s high market knowledge and stronger focus on market development in the medium-term allow to better predict changes how customer want to be served in terms of form, time, and place. Therefore, the integration of marketing’s thought world allows to better shape decisions reflecting future needs in terms supply chain design, distribution model, as well as long-term supply and demand planning allowing to proactively address necessary changes (Jüttner et al., 2007). Again this would result in enhanced costs, quality, responsiveness, and innovation compared to the firm’s rivals in terms of value definition and delivery. Accordingly, the link between SCM and marketing facilitates differentiation in terms of products/services as well as delivery models (Jüttner et al., 2007).

Because both GM and SCM decisions affect SCP, the influence of the two departments over these decisions will also have an impact on SCP. Specifically, when one function’s dominates over GM decisions the two thought worlds are not fully reconciled leading to strategic decisions that increase SCP to a lesser degree. Thus, equal influence of SCM and marketing is more beneficial for GM decisions.

Contrary, in the case of SCM decisions, a dominant SCM function leads to an increase in responsiveness, quality, and innovation. This is due to the well-defined processes across internal functions and external exchange partners, that lead to a better ability of the overall supply chain to create and deliver value to the end customer (Christopher, 2012; Ellinger and Ellinger, 2013). Based on this discussion we hypothesize:

***H1:** Supply chain performance is highest, when influence between the marketing and supply chain management functions over strategic decisions pertaining to general management is equal.*

***H2:** Supply chain performance is highest, when the SCM function is more influential than the marketing function over strategic decisions pertaining to supply chain management.*

4.3 Methodology

4.3.1 Sampling and data collection

To collect data for hypothesis testing, we applied a key informant approach (Phillips and Bagozzi, 1986) targeting employees with a background in supply chain management and with managerial responsibilities (middle management and higher). These informants can be considered a more reliable information source when asking about the interplay between the SCM function and the marketing function, as they are also involved in the decision making process (Daugherty et al., 2009). A web-based survey was administered in the autumn of 2015 and potential respondents were obtained from a proprietary university data base with 2,234 contacts. A total of 308 responses were retrieved, yielding an appropriate response rate of 13.8% (Wagner and Kemmerling, 2010). Several returned questionnaires were discarded (32) either because the respondent indicated little knowledge about the SCM function (24 cases) or the responses indicated no variance across items which suggests unengaged response behavior (8 cases). A total of 276 usable data sets thus remained. The characteristics of the analyzed sample are displayed in Appendix 1-1.

We assessed the respondents' reliability and validity based on their managerial position and experience (Phillips, 1981). Our sample has the following characteristics for managerial position: 71% of respondents held a management position at the middle management level and higher, whereas approximately 24% of respondents held a position at the lower level management level. Only the approximately remaining five percent of respondents did not hold any managerial responsibility. More than 80% of the respondents had an overall business experience of ten and more years, which indicates a high level of competency. Hence, considering all aspects together, respondents can be assumed to be knowledgeable about the relevant aspects of this study.

4.3.2 Tests for bias

To examine potential non-response bias, we compared early and late respondents with regards to the means for the entire survey by following the recommended procedure of Wagner and Kemmerling (2010). Between the two groups none of the items was significantly different ($p \leq 0.05$). As a result, non-response bias should not represent a serious concern for the present study.

Due to utilizing the same informant to collect data for independent and dependent variables, there is concern that common method variance (CMV) might result in affecting our study with common method bias (CMB) (Podsakoff et al., 2003). To assess CMB, we performed the Harman's single-factor test, which failed to produce evidence for CMB with the single-factor explaining only 33.4% of the total variance (Harman, 1976). Moreover, CMV can only attenuate curvilinear effects as analytically shown by (Siemsen, Roth, and Oliveira, 2010), and therefore researchers examining mainly quadratic effects should not be criticized for potential CMV. This implies that the finding of curvilinear effects either supports that (1) CMV has minimal influence or (2) that much stronger effects exist within the population than demonstrated by the hypotheses test results (Goldsby et al., 2013). These findings, along with the arguments provided indicated that CMB is not a serious concern for the present study.

4.3.3 Measurements

The measurement scales were developed by modifying existing scale items which are based on an extensive literature review. In a first step, we conducted nine in-depth interviews with practitioner experts to obtain feedback aimed at refining our initial survey instrument. In a second step, all scales were refined in a series of iterations with ten academics and ten supply chain matter experts (Dunn et al., 1994) – all scales are presented in Appendix 4-1. Both groups controlled the survey items for content validity, reliability, clarity and relevance of the items (Chen and Paulraj, 2004). We continued this iterative process until no further changes were suggested which resulted in a survey instrument more conforming to our study's context.

Measurement of Influence Differences between SCM and Marketing. We adapted the established departmental influence measure for GM decisions (Homburg et al., 2014; Homburg et al., 1999; Verhoef and Leeflang, 2009) by replacing the decision relating to “choice of strategic business partners” to a network spanning measure of “design of overarching business processes”, based on the feedback we received during the development of our survey

instrument. To assess a department's influence over GM decisions we followed the recommended procedure by Homburg et al. (1999), respondents were asked to distribute 100 points across six departments (i.e., supply chain and logistics, marketing and sales, procurement, manufacturing, finance and accounting, and research and development) and across five decisions (e.g., new product development, expansion to new geographic customer markets, design of overarching business processes, major capital expenditures, and strategic direction of the business unit), so that influential departments would receive more points. Next, an index for each department is formed which involves multiple steps. First, we build the sum product of the allocated influence points and the importance of that decisions for the success for the business unit divided by the number of decisions. Respondents assessed importance of the decisions on a scale ranging from 1 ("relatively low importance") to 7 ("extremely high importance"). Then, the corresponding index was divided by 100 which enhances the similarity of scales employed in this study and accordingly allows for easier interpretation of hypothesis tests. For the final influence difference measure for GM decisions we subtracted the influence for the marketing department from the influence of the SCM department. Accordingly, this measure can assume positive as well as negative values. We followed the same procedure for the influence difference measure relating to SCM decisions (i.e., end-to-end supply chain design, sourcing strategy, distribution strategy, long-term supply and demand planning, and mid-term inventory planning). The SCM decisions were identified during an interview phase with nine subject matter experts from practice followed by further testing with the described panel of ten academics and ten supply chain practitioners. Table 4-2 gives an overview regarding the allocation of departmental influence across the ten decisions and six functional departments.

Decisions	SCM & Logistics	Marketing & Sales	Procurement	Manufacturing	Finance & Accounting	R&D
Supply chain management decisions						
Mid-term inventory management	48	15	9	14	13	1
Distribution strategy	42	30	7	9	10	2
End-to-end supply chain design	39	19	10	15	13	4
Long-term supply and demand planning	33	27	9	16	12	3
Sourcing strategy	29	7	34	15	10	5
General management decisions						
Design of overarching business processes	29	24	15	12	15	6
Major capital expenditures	15	16	8	23	29	10
Strategic direction of business unit	14	38	7	11	19	11
Expansion into new geographic markets	13	52	6	8	15	6
New product development	10	34	8	11	10	27

Note: R&D = research and development.

Sum may not add up to 100 as a result of rounding.

Table 4-2: Influence of functional subunits over strategic decisions III

Supply Chain Performance. We employ five items conceptualized by Fawcett and Waller (2013), which compare the costs, quality, responsiveness, innovation, and overall improvement of the focal firm to its rivals (Rexhausen et al., 2012). These measures build on the established and widely used scales developed by Beamon (1999) and Gunasekaran, Patel, and McGaughey (2004).

Statistical Controls. To reduce the possibility of alternative explanations, we include firm-, industry-, and country-level variables that have been shown to influence performance as statistical controls (Homburg et al., 2014; Oswald et al., 2012). Further, we have included two variable that measures the combined influence of functional departments without the SCM and marketing function – one for GM decisions and one for SCM decisions. This allows us to identify not only if influence differences matter, but also if the absolute level of influence has an effect on the examined relationships.

4.3.4 Reliability and validity of measures

We assessed the data regarding reliability, convergent, and discriminant validity using confirmatory factor analysis (CFA). The CFA measurement model was analyzed using Amos 24, yielding fit indices indicative of adequate fit ($\chi^2 = 11.38$, $\chi^2/df = 1.04$, CFI = 0.99, SRMR = 0.03, RMSEA = 0.011). To be able to include our single-indicator latent variables

(i.e., influence difference for GM and SCM decisions) into the CFA, we followed the recommended procedure by Brown and Moore (2012)¹⁴ to specify their error variance based on the remaining indicator's reliability. Scale reliability was established, as for each construct the composite reliability was greater than the established threshold of 0.70 (Bentler, 2009; Garver and Mentzer, 1999). The constructs demonstrated convergent validity based on the Fornell and Larcker (1981) average variance (AVE) criterion. SCP exhibited a low AVE. Of the five SCP measures the item measuring supply chain costs displayed the lowest standardized loading (0.50). And though the elimination of this item increases AVE (0.52) of SCP, it adversely affects global fit statistics. More importantly, "costs" as specified by existing measurement theory (Beamon, 1999), contains valuable information about the supply chain's performance. Considering that measurement theory, face validity, and global fit indices can be deemed superior to that of the model without the measure, we retained this item which is in line with the literature (Garver and Mentzer, 1999; Hair et al., 2010). Further, as for each construct the square root of AVE was greater than the corresponding inter-construct correlations, our measurement model indicates discriminant validity (Fornell and Larcker, 1981). In sum, these results suggest convergent and discriminant validity for each construct – see Table 4-3.

Construct	Mean	Std. Dev.	CR	AVE	1	2	3
1 Supply chain performance	2.29	0.55	0.81	0.47	0.68		
2 Influence difference for GM decisions	-0.47	0.92	0.80	0.80	0.19	0.90	
3 Influence difference for SCM decisions	0.79	1.05	0.80	0.80	0.17	0.51	0.90

Note: CR = composite reliability, AVE = average variance extracted, square root of AVE is provided on the diagonal in bold; the factor correlations are provided below the diagonal, means and standard deviations taken from the AMOS measurement model.

Table 4-3: Measurement reliability and validity III

4.3.5 Results

We analyzed two models for testing the hypothesized relationships using structural equation modeling. For both models all independent variables were mean centered before added to the models to avoid unnecessary collinearity caused by higher order terms (Aiken and West, 1991). We followed the recommended procedure by Wu et al. (2013) to form the product

¹⁴ $\delta_x = \text{VAR}(X)(1-\rho)$; VAR(X) is the sample variance of the single indicator and ρ is the reliability estimate of the indicator.

indicators for interactions among latent variables. In order to allow for meaningful interpretation of our models we report the unstandardized estimates (Aiken and West, 1991; Hayes and Matthes, 2009). Fit indices suggested an adequate fit for model 1 ($\chi^2 = 182.35$, $\chi^2/df = 1.48$, CFI = 0.93, SRMR = 0.04, RMSEA = 0.042). The test results are depicted in Table 4-4.

Influence Difference for General Management Decisions and SCP. Hypothesis H1 posits that equal influence of SCM and marketing enhances SCP. In initial support of H1, the results indicated a significant inverted U-shape relationship ($b = -0.05$, $p \leq 0.01$) and a slightly significant negative effect of other functions' influence on SCP ($b = -0.14$, $p \leq 0.10$).

Independent variables	Model 1			Model 2				
	Influence difference for GM decisions on supply chain performance			Influence difference for SCM decisions on supply chain performance				
		β	b	S.E.		β	b	S.E.
Influence difference		0.34	0.20**	0.05		0.20	0.10**	0.04
Influence difference squared	H1 (\cap)	-0.27	-0.05**	0.02	H2 (\cap)	-0.20	-0.04**	0.02
<i>Controls</i>								
Influence of other functions		-0.18	-0.14†	0.08		0.05	0.03	0.07
Firm size		-0.08	-0.04	-0.04		-0.09	-0.05	0.04
Industries		Included				Included		
Countries		Included				Included		
R ²		0.16 (0.06)				0.13 (0.06)		

† $p \leq 0.10$; * $p \leq 0.05$; ** $p \leq 0.01$.

() R² with controls only.

β = Estimates for standardized solution; b = Estimates for unstandardized solution; S.E. = Standard error.

Supported hypotheses in bold.

For brevity reasons we have not listed the statistical values for control variables.

“Industrial goods and services” served as the baseline category for “Industry” and “Germany” served as the baseline category for “Country”.

Table 4-4: Hypothesis test results III

Yet, to assess where the turning point of the tested relationship is, a Johnson-Neyman plot (see Figure 4-2) was created using tools developed by Miller et al. (2013). The graph ranges from -1.5 to +3.0 standard deviations with respect to influence difference between the SCM and marketing function and shows for which values the relationship with SCP is significant. Figure 4-2 suggests that performance increases significantly (i.e., the values of the slope are positive) until the SCM influence is approximately 1.1 standard deviations above the mean of

influence difference for GM decisions. As marketing currently has a slight dominance over SCM with respect to GM decisions (see Table 4-3) the value 0 on the abscissa represents this slight dominance (this results from mean centering the variable). Equal influence would be at the value of 0.51 standard deviations, so that 1.1 represents a slightly dominant SCM function regarding GM decisions.

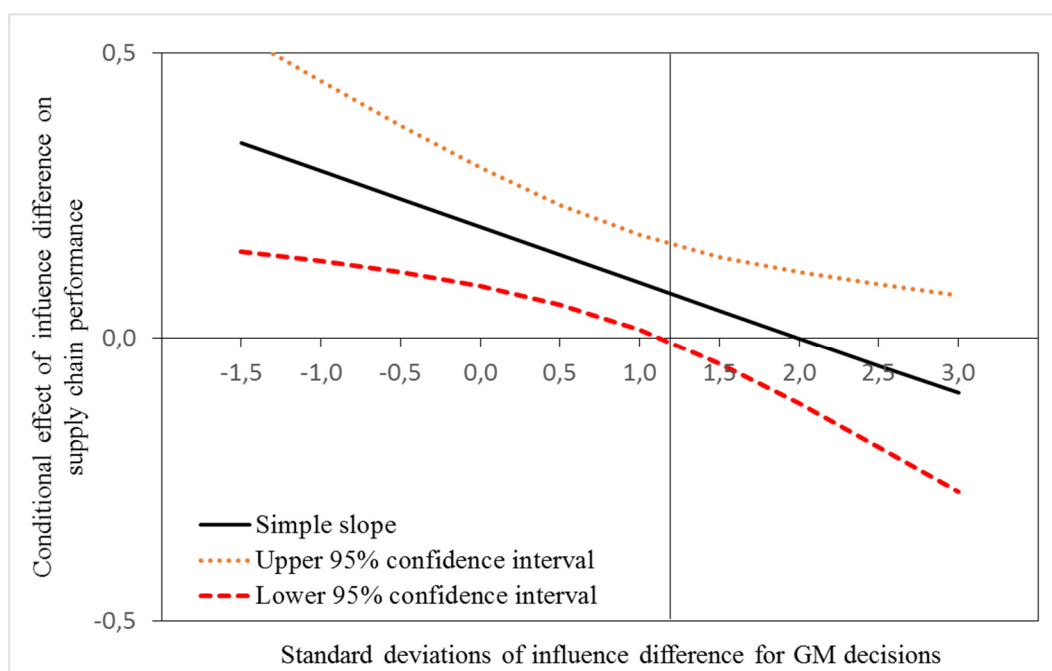
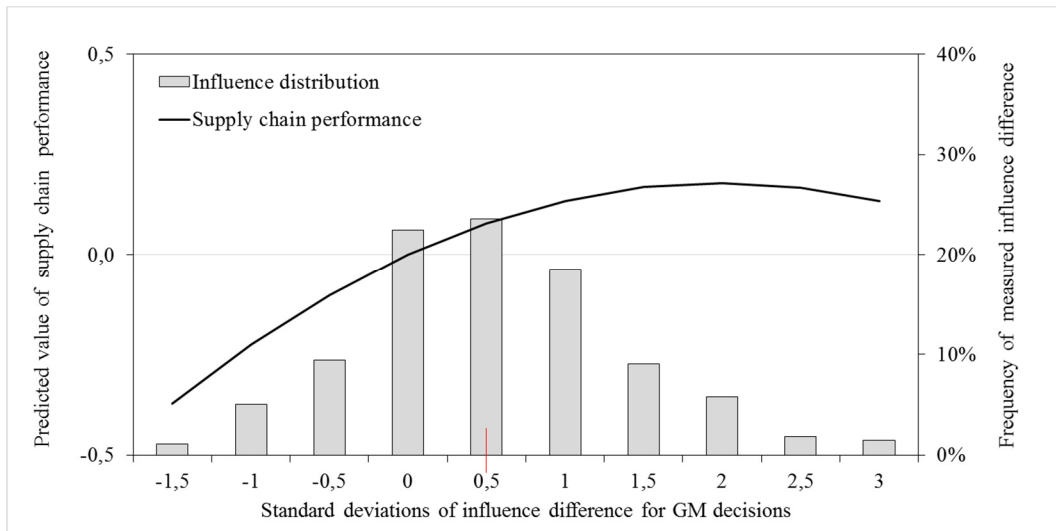


Figure 4-2: Johnson-Neyman plot of the conditional effect of influence difference for GM decisions on supply chain performance

The same conclusion can also be drawn from Figure 4-3, which shows that increasing SCM influence (i.e., moving to the right on the graph) will result in increased SCP, leading us to reject H1. Figure 4-3 depicts the predicted value of SCP around its mean based on the influence difference between the SCM and marketing function for GM decisions. The graph displays the predicted SCP from -1.5 to 3.0 standard deviations of influence difference around the mean. Approximately 98.0% of companies fall into this range for GM decisions.



Note: Red tick mark indicates equal SCM and marketing influence.

Figure 4-3: Predicted value of SCP around its mean across influence difference for GM decisions

Influence Difference for SCM Decisions and SCP. Model 2 was utilized to assess H2. Again, fit indices suggested an adequate fit for model 1 ($\chi^2 = 137.10$, $\chi^2/df = 1.12$, CFI = 0.98, SRMR = 0.03, RMSEA = 0.020). Hypothesis H2 addressed the relationship of influence difference between the SCM and marketing function for SCM decisions with SCP. In line with our expectations the test results as well as our additional graphical analysis suggest a moderately dominant SCM function to enhance SCP, thus confirming H2 ($b = -0.04$, $p \leq 0.01$) and a positive, but not significant effect of other departments' influence on SCP ($b = 0.03$, n.s.).

Again we constructed a Johnson-Neyman plot that ranges from -1.5 to +3.0 standard deviations with respect to influence difference between SCM and marketing and that shows where the slope of the tested relationship is significant. According to Figure 4-4, performance increases significantly (i.e., the values of the slope are positive) until the SCM influence is approximately 0.3 standard deviations above the mean of influence difference for SCM decisions. As SCM currently has a moderate dominance over marketing with respect to SCM decisions (see Table 4-3) the value 0 on the abscissa represents this moderate dominance (this results from mean centering the variable). Equal influence would be at the value of -0.75, so that 0.3 represents a moderately dominant SCM function regarding SCM decisions.

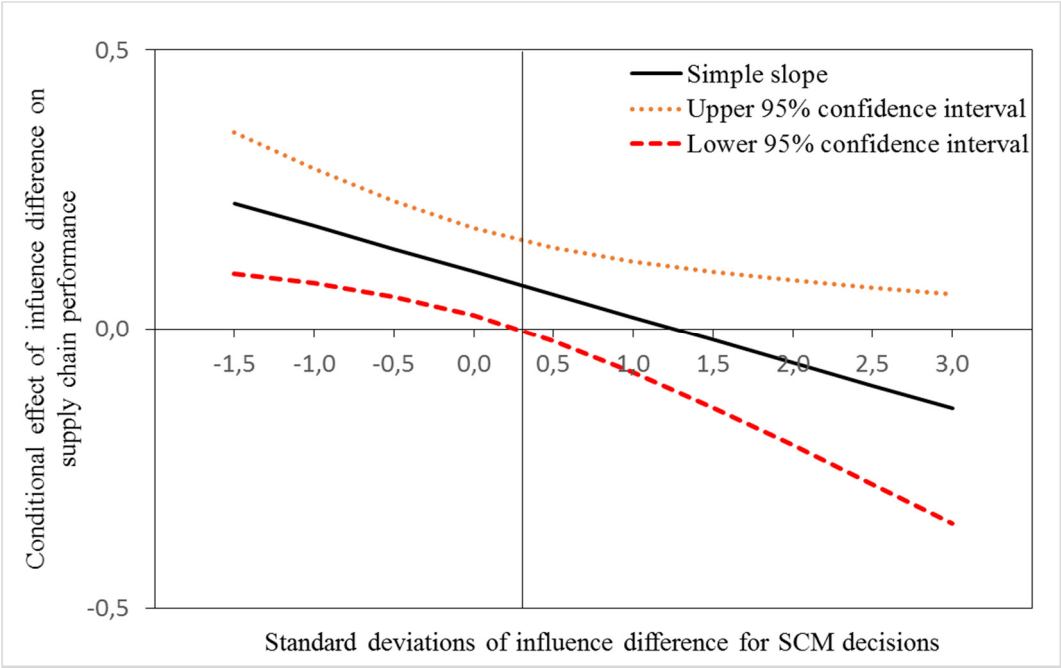
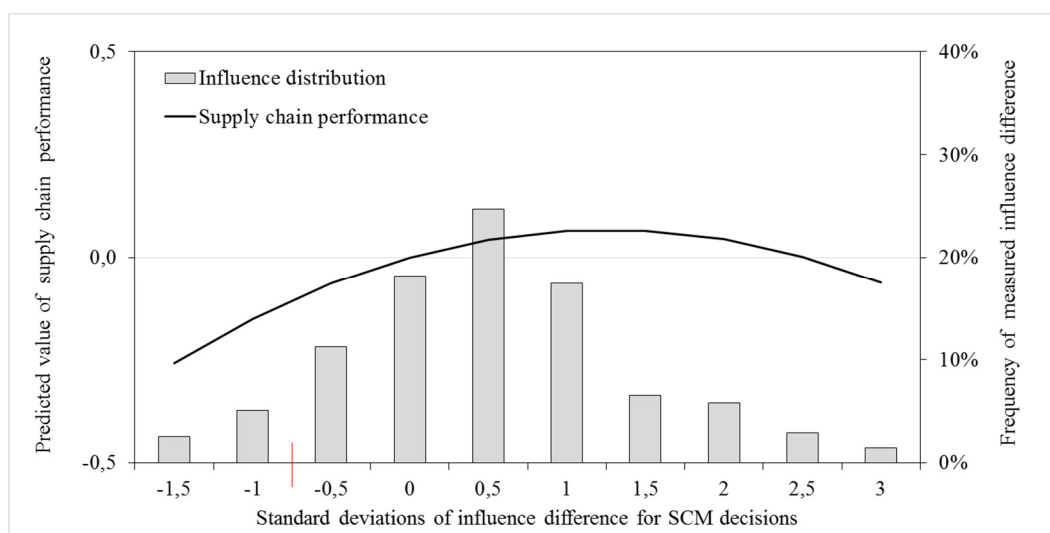


Figure 4-4: Johnson-Neyman plot of the conditional effect of influence difference for SCM decisions on supply chain performance

Figure 4-5 demonstrates that increasing SCM influence to a moderately dominant level enhances SCP, and thus provides further support for H2. In Figure 4-5, the predicted value of SCP around its mean based on influence difference between the SCM and marketing function for SCM decisions is displayed, which range from -1.5 to 3.0 standard deviations of influence difference around the mean. Approximately 96.0% of companies fall into this range for SCM decisions.



Note: Red tick mark indicates equal SCM and marketing influence.

Figure 4-5: Predicted value of SCP around its mean across influence difference for SCM decisions

4.4 Discussion

4.4.1 Theoretical and managerial implications

This study was inspired by the marketing literature, in which both departmental influence and departmental thought worlds and their relationship on various performance outcomes have been discussed (Homburg and Jensen, 2007; Homburg et al., 1999). The relationship of influence difference for general management (GM) and SCM decisions and the underlying thought worlds with supply chain performance (SCP) has not been investigated previously. This gap in the supply chain management literature is surprising, given the increasing emphasis on internal-integration with the marketing function (Kozlenkova et al., 2015). Therefore, this research makes several contributions.

Our results provide a certain contrast to previous studies on influence difference which suggest that a large difference in orientations between departments enhances performance (Dougherty, 1992; Ellinger et al., 2011; Homburg and Jensen, 2007; Oswald et al., 2012). The tested relationships in our study indicate that a slight to moderate dominance of a function, and accordingly the degree to which its respective thought world are considered, can also lead to enhanced performance. Our results indicate that SCP is highest when the SCM function is slightly dominant over marketing with respect to GM decisions and moderately dominant with respect to SCM decisions. While the finding for SCM decisions is in line with our hypothesis,

the finding of a slight dominance of the SCM function for GM decisions is contrary to our expectations.

There are several possible explanations for this result. On the one hand, a growing body of research suggests that the marketing function has generally lost influence in driving the definition of value propositions (Esper et al., 2010b; Homburg et al., 2014; Jüttner et al., 2007). On the other hand, another stream of research puts strong emphasis on the growing importance of SCM, in so far that it not only delivers the firm's value proposition, but also actively participates in value definition and its dissemination across the supply chain (Green et al., 2012; Jüttner et al., 2007; Kozlenkova et al., 2015). Further, in times of hyper-competitive markets and competition at the supply chain level (Hult et al., 2007a; Kozlenkova et al., 2015), value for the customer is increasingly defined by the characteristics of value delivery (i.e., overall cost, responsiveness to customers, innovation of delivery mode). These characteristics are largely determined by the integration of strategic exchange partners, strategic activity links, and resource ties and therefore fall mainly into the domain of SCM (Kozlenkova et al., 2015).

Looking at marketing, a slight dominance of SCM does not render marketing unimportant, but rather underscores that its role is possibly changing. Due to the increasing competition on a supply chain level value creation must be integrated across supply chain partners. Here, the marketing department may have a prominent role in creating a firm's initial value proposition, but it is at the center of the SCM function's task and capabilities to communicate and align the respective strategy to facilitate this value creation collaboratively with supply chain partners (Esper et al., 2010b; Kozlenkova et al., 2015). This finding provides further evidence to propositions established by recent literature, which demonstrates the importance of marketers and supply chain managers to strategize collectively with the aim to establish integrated supply and demand chains that allow marketing initiatives to translate into supply chain drivers while acknowledging the firm's operational constraints (Jüttner and Christopher, 2013). Additionally, due to the SCM function's boundary spanning role that also focuses on demand processes (Esper et al., 2010b), its own thought world is increasingly enriched with market-orientation and market-knowledge (Gligor, 2014; Grawe et al., 2009). In sum, these findings provide a possible extension of prior research on the interplay between SCM and marketing (Kozlenkova et al., 2015).

A further contribution of this study lies in bringing the discussion on differing orientations and competences at the strategic level to the SCM literature. This study conceptually addresses how differing influences between SCM and marketing functions allow

these two departments to integrate their respective thought worlds in decisions of strategic importance to the firm (Engelen, 2011; Homburg and Jensen, 2007) and thereby enhancing SCP (Fawcett and Waller, 2013; Rexhausen et al., 2012). Our study extends prior research by distinguishing between GM decisions which determine how the value proposition is defined (i.e., on which basis the firm competes) and SCM decisions that determine how the value is delivered (i.e., how a customer should be served) and relating the influence difference between SCM and marketing over these decisions to SCP (Fawcett and Waller, 2013). While the finding of an inverted U-shaped relationship for both, GM and SCM decisions, validates a key tenet of departmental thought worlds and shows that this relationship also applies to the broad facets of SCP, these results also lend additional weight to the arguments that marketing and supply chain managers should elucidate and analyze challenges and objectives collaboratively from various angles and therefore foster a better understanding of the firm's necessary strategic priorities (Jüttner and Christopher, 2013; Kozlenkova et al., 2015).

In combination our findings lend support to the notion that differing influence between SCM and marketing lead to enhanced SCP. And while the firms increasingly compete on a supply chain level (Hult et al., 2007a; Kozlenkova et al., 2015), the SCM function becomes ever more important in facilitating performance outcomes (Roh et al., 2016; Wagner and Kemmerling, 2014)

Also, we find that the influence of other departments regarding GM decisions matters for SCP, but not regarding SCM decisions. Increasing the influence of other departments than SCM or marketing actually decreases SCP, which underscores the importance of the interplay between the SCM function and the marketing function for defining customer value propositions (Esper et al., 2010b; Jüttner et al., 2010; Kozlenkova et al., 2015).

From a practical perspective, this study's collective findings should encourage managers to focus more heavily on the influence allocation between SCM and marketing to enhance SCP and value generation for the firm. This ensures that the SCM function's and the marketing function's different perspectives are accounted for in strategic decisions. However, as suggested by our findings, the majority of firms would benefit from increasing SCM influence regarding GM decisions to further enhance SCP – see Figure 4-3. For SCM decisions our analyses provide mixed results. Here, a substantial part of companies would also benefit from increasing SCM influence, however, in the same fashion a relatively small but noticeable number of companies currently gives too much influence to the SCM function leading to a decrease in SCP (Fawcett and Waller, 2013) – see Figure 4-5.

Further, for managers this finding implies that SCM must also play a defining role in evaluating the strategic direction of the company (Roh et al., 2016; Wagner and Kemmerling, 2014). It is important to consider the operational capabilities and constraints when defining how the value should be created (Esper et al., 2010b). Consequently, executives should refrain from deciding on major strategic initiatives without consulting and heavily involving the SCM function as this might result in subpar performance compared to the firm's closest competitors.

4.4.2 Limitations and future research

The findings of the present study show how influence differences between SCM and marketing increase supply chain performance. The following limitations of our study can help in guiding further research in this area.

First, our study focused exclusively on SCP as the outcome to evaluate the relevance of influence differences. Further studies should extend this research to other outcomes of high relevance to the company in order to provide more breadth in evaluating the role of differing influence on strategic decisions.

Second, we limited our study to measuring the influence difference for GM decisions and SCM decisions. Further research could include additional moderating variables to gain a more holistic understanding of the link between influence differences and supply chain performance. For example, potential moderating variables include achieved internal and external integration, as well as the geographical dispersion of the supply chain. The moderating role of integration concerning the relationship of the influence difference between the SCM function and the marketing function serves as an interesting avenue for further research, because it can be assumed that only a high degree of integration will also facilitate the implementation of the strategic decisions within the company and across the supply chain fostering "infrastructural support for the value-creating processes" (Swink and Schoenherr, 2015, p. 69). In addition, geographical dispersion has been shown to reinforce the complexities and uncertainties associated with SCM (Bode and Wagner, 2015). This sheds light on the question if the SCM function should be given more influence with increased geographic dispersion as the firm's ability to establish superior value delivery systems becomes even more salient.

Third, this research examined the influence differences for manufacturing companies. Viewing service companies could possibly offer another interesting avenue for further research. Investigating the relationship of influence difference between the SCM function and the marketing function here may produce differing results from our study. Such, findings would

advance current research by identifying that this relationship is not internally consistent and depends on the context and unit of analysis studied.

Finally, future works could explore influence differences for other functional departments than SCM and marketing. For example, within theory and practice the topic of digitalization is increasingly receiving attention (Singh and Hess, 2017) leading to the emergence of IT topics and consequently to the emergence of IT-related functions (Han, Wang, and Naim, 2017). As a result, it could be promising to investigate influence differences among the SCM function and the IT-function and its effect on successful IT-transformations.

5 Conclusion

Against the background of the supply chain management (SCM) function's growing importance for value generation, this dissertation provides new insights about the involvement and ability of the SCM function to shape the firm's strategic debate – I refer to this ability as *SCM influence*. In particular, this dissertation examines the phenomenon of SCM influence from three distinct perspectives; the drivers of SCM influence, the allocation of influence among departments as performance drivers, and the influence difference between selected departments as a performance driver. The first perspective covers the main internal antecedents that specify the level of SCM influence. The second perspective contrasts the allocation of influence to the SCM functions and the moderating role of customer orientation with the dispersion of influence among all departments and the associated effects on new market performance. The third perspective focuses on the influence difference between the SCM function and the marketing function to enhance supply chain performance. An extensive review of the literature was conducted to develop the corresponding research models underpinned by relevant theoretical foundations and theories. Each model was tested based on survey data using structural equation modeling.

5.1 Main research findings

The following paragraphs provide a brief overview of this dissertation's main findings. A detailed discussion of each article's findings including theoretical and managerial implications is presented in chapters 2 to 4.

Chapter 2 provides results about the main internal antecedents responsible for generating SCM influence. With strategic leadership styles of the highest-ranking SCM executive (i.e., transactional leadership and transformational leadership), top management support that the SCM function receives, and supply chain professional competencies this dissertation identifies a more complete set of internal antecedents which increase SCM influence. While it is shown that the initiation of structure through transactional leadership amplifies SCM influence, even more so, under the condition of high environmental uncertainty in the short-term, transformational leadership is only rendered effective under high levels of transactional leadership. This gives transactional leadership the role of a 'catalyst' for transformational leadership. Further, it is shown that top management support for the SCM function fosters other department's dependency on the SCM function and enhances the SCM function's ability to cope with uncertainty and therefore increases SCM influence. With respect to supply chain professional competencies, this dissertation demonstrates that a high level

thereof can be assumed to lead to better internal and external integration and thereby enhances SCM influence. In sum, these results provide a holistic set of internal antecedents to SCM influence that complement prior research.

Chapter 3 offers novel understanding of the two relationships of SCM influence and dispersion of influence with new market performance, while also viewing the moderating effect of customer orientation on the relationship between SCM influence and new market performance. The results of this study indicate that an influential SCM function can establish information processing fit via adequate information processing needs-reduction (i.e., buffers and slack resources) or capacity-increasing mechanisms (i.e., vertical information systems and lateral relationships), and thereby enhance new market performance. However, as SCM influence rises above moderately high levels, the firm's ability to establish information processing fit diminishes due to the problems associated with bounded rationality and equivocality, as valuable information and insights from other departments are neglected by the SCM function during decision making. This leads to information processing misfit and consequently lower new market performance. SCM functions that exhibit high levels of customer orientation can partially counterbalance this effect even for high SCM influence. As customers represent the biggest source of uncertainty, a high customer orientation is more important than incorporating the views of other departments.

In contrast to the curvilinear relationship between SCM influence and new market performance, a linear relationship was found for the dispersion of influence, suggesting that a broader range of functional departments should be included in the firm's strategic debate when new market performance is of concern. Therefore, the combined findings suggest that firms highly benefit from an influential SCM function when entering new markets, especially when the SCM function exhibits high levels of customer orientation. In conclusion, these results contribute to the ongoing debate on how the challenges associated with geographic expansion can be alleviated.

Chapter 4 clarifies which functional department should receive more influence, the SCM function or the marketing function, to enhance supply chain performance. It is outlined that influence differences lead to a reconciliation and integration of differing thought worlds and, thereby, enhance supply chain performance. However, this study provides a new perspective, showing that in order to maximize supply chain performance the SCM function should slightly dominate general management decisions and moderately dominate SCM decisions and therefore receive more influence than the marketing department. These findings

underscore the notion that the SCM function is complementing its traditional orientations and competences with an increase of market orientation and market knowledge. Accordingly, this study finds that the marketing function should be less influential regarding strategic decisions and that the SCM function becomes ever more important in integrating strategic decisions within the company and across the supply chain to facilitate supply chain performance. Thus, these findings advance current research on the interplay between the SCM function and the marketing function and its relationship with performance outcomes.

The results of the three tested models of this dissertation allow for several conclusions about their contribution to the knowledge of SCM influence.

In light of today's firms' major challenge to establish critical links to exchange partners as a source of long-term profitability, this dissertation confirms the importance of the SCM function as a key driver of value generation and extends current research on the role of the SCM function within the firm. First, this research underlines the relevance of the involvement of the SCM function into the strategic debate of firms. Prior research that has revealed a positive effect of the SCM function's involvement in firm strategy on performance outcomes via supply chain orientation (Patel et al., 2013) and the presence of Chief Supply Chain Officers (Roh et al., 2016; Wagner and Kemmerling, 2014). This dissertation extends this research by providing clear guidance how SCM influence can be improved and, more importantly, how it enhances different performance outcomes of importance to the firm.

Second, it is shown that the right balance of influence among the SCM function and other functions matters, as opposed to an absolute level of functional influence (Homburg et al., 1999; Verhoef and Leeflang, 2009). The studies presented in chapter 3 and 4 collectively reveal that extreme values of SCM influence are ineffective or even detrimental (i.e., very low or very high SCM influence). In addition, it can be inferred from both studies that the correct balance of influence among the SCM function and other functional departments is more beneficial for performance outcomes than achieving the optimal SCM influence. This can be derived from the curvilinear effects of SCM influence on new market performance and from the effect of influence differences between the SCM function and the marketing function on supply chain performance.

Third, effects from customers assume a key role in examining relationships of SCM influence with performance outcomes, as customers represent the main source of uncertainty and variability for firms competing on a global scale (Brouthers et al., 2008). This dissertation

underscores the importance of customer orientation for the SCM function as it can render the effect of SCM influence on new market performance from ineffective to effective. The relevance of SCM influence is further supported by the finding that the SCM function should be slightly dominant over the marketing function for general management decisions and moderately dominant for SCM decisions to maximize supply chain performance. This finding indicates that some of the marketing function's responsibilities are increasingly shared with the SCM function, one of which is the sole ownership of customer relationships (Kozlenkova et al., 2015).

Fourth, contrasting the findings of chapter 3 and 4 with the study on internal antecedents to SCM influence in chapter 2, several implications can be drawn. As this dissertation provides evidence that performance decreases above certain values of SCM influence, firms should not further enhance the antecedents of SCM influence to prevent an additional decrease in performance. Here, it is important to note that departmental influence is established over time and cannot be established or decreased at an instance. Therefore, particular attention should be given to strong and long lasting factors such as top management support.

5.2 Limitations and further research

This dissertation offers valuable contributions to supply chain management research through several theoretical and managerial implications. Despite considerable efforts that were undertaken to ensure high methodological and theoretical rigor, this research needs to be considered in light of its limitations. At the same time, in combination with the findings, these limitations might offer interesting opportunities for future research.

The data used to test the research models conceptualized in this dissertation has certain limitations. The majority of the analyzed data set consists of companies residing in developed markets. In developing markets the effects of SCM influence might be less pronounced on performance outcomes, as brand building might be deemed more important. Therefore, additional studies comparing the results of this research with the corresponding results focusing on developing markets could offer additional value.

This dissertation is based on a survey to test the hypothesized models. Future works could conduct case studies at the executive level according to the strategy as practice approach (Jarzabkowski et al., 2015). This would possibly complement this research by unearthing

insights at the strategic realm of the company while offering a fine grained measure of SCM influence.

This research focuses on the main internal antecedents to SCM influence. By doing so, it provides valuable insights how firms can adjust SCM influence. Future research works could contrast these internal factors with external factors that impact the importance of the SCM function for firm strategy (Patel et al., 2013; Roh et al., 2016; Wagner and Kemmerling, 2014). Insights whether internal or external factors are more important to enhance SCM influence or how they interact could augment the findings of this dissertation.

This dissertation contrasts SCM influence with dispersion of influence and also examines influence difference at the SCM and marketing interface, offering a better understanding how organizational subunits interact with respect to the strategic decision making process. Future research could examine an additional perspective by incorporating organizational structure variables that further specify the effects of departmental influence. For example, a known source of power and influence can be attributed to the hierarchy level of an organizational subunit (Pfeffer, 1981). Therefore it is likely to matter in which form (functional versus matrix organization) and at which level (corporate level or distributed locally within countries) the SCM function resides. Research including this additional layer of analysis would help to reflect this dissertation's findings from an additional perspective.

This research has revealed that the SCM function should have more influence than the marketing function to enhance supply chain performance. This implies possibilities for further research. Apart from the interplay between SCM and marketing, further interfaces among two or even more functional departments could be examined. For example, as the concept of supply chain management becomes ever more prevalent, its effects and dependencies also ripple through to the research and development department (Wagner and Hoegl, 2006; Wynstra, Von Corswant, and Wetzels, 2010). As innovations across supply chains intensify, it appears to be useful to examine how influence between the research and development function and the SCM function should be allocated to achieve optimal results, in particular, related to product launch performance, product development performance, and supply chain performance.

The combined results of this research offer novel insights for SCM research at the strategic and functional level. This could be used as a starting point to identify how this dissertation's findings can be used to formulate further research questions that shed light on the origin and performance implications of SCM influence. One possible way to address this

challenge is to use a multilevel perspective nesting the research of influence between two different organizational levels (Carter, Meschnig, and Kaufmann, 2015). For example, further research works could assess the achieved integration with suppliers and customers and how they interact based on the respective and most likely differing SCM influence of each organization (i.e., supplier, focal firm, and customer).

This dissertation also offers a multitude of insights regarding the relationship of SCM influence with customers in terms of the moderating role of customer orientation and the diminishing responsibilities of the marketing function (Kozlenkova et al., 2015). Yet, it is also likely that SCM influence affects the relationships with suppliers. For instance, a focal firm with high SCM influence is more likely to emphasize exchange relationships that are agile and performance-driven. Therefore, these relationships possibly require more commitment and effort from suppliers to meet the aspirational goals set by the focal firm. Accordingly, further studies focusing on SCM influence and its relationship with respect to suppliers would further complement this dissertation's main findings.

In conclusion, two main avenues for further research can be explored. First, the findings of this dissertation can be extended to understand further facets of SCM influence. And second, the findings of this research can be applied and adopted to SCM influence and influence of other functional departments in different contexts. Overall, due to its high relevance, the SCM function and its influence for the firm's value generation will remain of high interest for academia and practice alike.

Appendices

Appendix 1-1

Sample demographics

	Frequency	Percentage
Industries		
Industrial goods and services	43	15.6
Chemicals, plastics, rubber	39	14.1
Consumer goods, personal goods, textiles and clothing	32	11.6
Paper and packaging, forestry	22	8.0
Pharmaceuticals, health care	20	7.3
Utilities, oil and gas	19	6.9
Automotive	18	6.5
Electronics, optics, medical devices	17	6.2
Transport	15	5.4
Technology	12	4.3
Telecommunications	10	3.6
Retail	7	2.5
Other	22	8.0
Number of employees		
Less than 50	1	0.4
50–149	5	1.8
150–399	5	1.8
400–999	9	3.3
1,000 – 2,999	15	5.4
3,000 – 9,999	34	12.3
10,000 and more	207	75.0
Functional area of responsibility of respondents		
Supply chain management	177	64.1
Logistics	27	9.8
Procurement	27	9.8
Manufacturing	15	5.4
Marketing and sales	10	3.6
Other	20	7.3
Hierarchical level of respondents		
Top management level (e.g., CSCO, COO, EVP, board of directors)	12	4.3
Upper management level (e.g., SVP)	51	18.5
Middle management level (e.g., VP, head of department)	133	48.2
Lower management level (e.g., team leader)	67	24.3
No management activities (e.g., specialist, consultant, trainee)	13	4.7
Business experience of respondents in years		
3 – 4	5	1.8
5 – 9	48	17.4
10 – 25	167	60.5
25 and more	56	20.3
Total	276	100.0

Sample demographics (continued)

Countries	Frequency	Percentage
Germany	148	53.6
Switzerland	45	16.3
Belgium	14	5.1
Austria	12	4.3
Other	57	20.7
Total	276	100.0

Appendix 1-2

1. Invitation e-mail sent to respondents

Subject: How important is SCM within the firm?

Dear Mr./Ms. XYZ,

I would like to ask for your kind support for an ongoing survey. Every single response is highly valuable and much appreciated!

The title of the survey is “**Importance of the SCM function**”. The study is a joint-research project by WHU – Otto Beisheim School of Management and the Kühne Logistics University.

We want to gain new insight about the SCM function’s role in strategic decision making. Those insights are of special importance to the SCM community as the SCM function’s integration has been known to be particularly poor in the past. This project aims to help SCM managers to identify the appropriate level of the SCM functions involvement across a set of 10 strategic decisions and how this involvement translates into operational and financial performance. Furthermore, we study the key factors and enablers that drive different levels of involvement across industries. In a nutshell, this can ultimately help managers to optimize how the SCM function is integrated in the broader organization and drive performance improvements.

To show our gratitude for your participation, we will fund **5 vaccinations against measles for children in developing countries** for every completed questionnaire. In addition, you will receive a **comprehensive management report** with our findings. Furthermore, you will gain access to a published articles of our research project “**Time to get SCM to the Board**” on the final page of this survey. The survey is available in English and German.

Access to questionnaire

- Link: «Link»
- Code: «Code»

All data will be used solely for academic research purposes and will be kept anonymous at all times. The questionnaire takes about 15-20 minutes.

Please answer the questionnaire for the business unit of your company that you are most familiar with. Questions regarding the entire company are explicitly marked.

We thank you sincerely for your participation.

Best Regards

Prof. Dr. Carl Marcus Wallenburg

WHU - Otto Beisheim School of Management
Lehrstuhl für BWL, insb. Logistik und Dienstleistungsmanagement
Campus Düsseldorf, Erkrather Straße 224a,
40233 Düsseldorf

E-Mail: scm-studie@whu.edu
Website: www.whu.edu/lsm

10. Top management support and general departmental influence

You have already completed the most difficult part of this survey. The next section contains further questions regarding your business unit.

At this point we would like to point out that there are no right or wrong answers. Occasionally questions might appear similar. This is intentional and needed due to methodological reasons.

To what extent do the following statements apply to the top management of your business unit?

	Strongly disagree						Strongly agree
Top management considers the supply chain function to be a vital part of our corporate strategy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Top management very often emphasizes the supply chain function's strategic role very often.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The supply chain function's views are important to most top managers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Top management is very much supportive of our efforts to improve the supply chain function.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The behavior and the decisions of top management indicate a strong supply chain management-understanding.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How important is the supply chain management function in your business unit?

Please select the management level of the highest-ranking manager/executive of the supply chain management function.

- Top management level (e.g., CSCO, COO, EVP, board of directors)
- Upper management level (e.g., SVP, managing director of business unit/division.)
- Middle management level (e.g., VP, head of department)
- Lower management level (e.g., team leader, project manager, employees with managerial responsibilities)

In general, how much influence within your business unit would you say each of these functional groups has had on important strategic decisions over the past three years?

Please distribute exactly 100 points, even if additional corporate functions are involved and/or grouped differently in your business unit. Many points correspond to a high level of influence.

Note:

Use the Tab key if you want to switch to the next input field directly without using the mouse.

Marketing & Sales	<input type="text" value="10"/>
Finance & Accounting	<input type="text" value="0"/>
Supply Chain Management & Logistics	<input type="text" value="0"/>
Manufacturing	<input type="text" value="0"/>
Procurement	<input type="text" value="0"/>
Research & Development	<input type="text" value="0"/>
Total	0

11. Influence over general management decisions

The following questions are a very important part of this survey. Please enter your subjective assessment.

Influence levels of corporate functions

What is your assessment of the degree of influence each of the following functional groups has had on the following strategic decisions of your business unit over the past three years?

Please distribute **exactly 100 points**, even if additional corporate functions are involved and/or grouped differently in your business unit. Many points correspond to a high level of influence.

Note:

Use the Tab key if you want to switch to the next input field directly without using the mouse.

New product development

Definition of product and/or service characteristics

Marketing & Sales	<input type="text" value="0"/>
Finance & Accounting	<input type="text" value="0"/>
Supply Chain Management & Logistics	<input type="text" value="0"/>
Manufacturing	<input type="text" value="0"/>
Procurement	<input type="text" value="0"/>
Research & Development	<input type="text" value="0"/>
Total	0

Expansion into new geographic customer markets

Definition of new geographical customer markets and how they should be entered (design of new value chains and new delivery models)

Marketing & Sales	<input type="text" value="0"/>
Finance & Accounting	<input type="text" value="0"/>
Supply Chain Management & Logistics	<input type="text" value="0"/>
Manufacturing	<input type="text" value="0"/>
Procurement	<input type="text" value="0"/>
Research & Development	<input type="text" value="0"/>
Total	0

Design of overarching business processes

Definition of business processes involving at least one customer and one supplier

Marketing & Sales	<input type="text" value="0"/>
Finance & Accounting	<input type="text" value="0"/>
Supply Chain Management & Logistics	<input type="text" value="0"/>
Manufacturing	<input type="text" value="0"/>
Procurement	<input type="text" value="0"/>
Research & Development	<input type="text" value="0"/>
Total	0

Major capital expenditures

Definition of major capital expenditures in new sites, acquisitions, IT or production technology

Marketing & Sales	<input type="text" value="0"/>
Finance & Accounting	<input type="text" value="0"/>
Supply Chain Management & Logistics	<input type="text" value="0"/>
Manufacturing	<input type="text" value="0"/>
Procurement	<input type="text" value="0"/>
Research & Development	<input type="text" value="0"/>
Total	0

Strategic direction of the business unit

Strategy formulation and/or definition of competitive strategies for the business unit

Marketing & Sales	<input type="text" value="0"/>
Finance & Accounting	<input type="text" value="0"/>
Supply Chain Management & Logistics	<input type="text" value="0"/>
Manufacturing	<input type="text" value="0"/>
Procurement	<input type="text" value="0"/>
Research & Development	<input type="text" value="0"/>
Total	0

12. Influence over supply chain management decisions

These are [the last five questions regarding the influence](#) of corporate functions. Please answer them the same way as on the previous page.

End-to-end supply chain design

Definition of supply chain performance requirements, e.g., focus on volume flexibility vs. costs vs. responsiveness

Marketing & Sales	<input type="text" value="0"/>
Finance & Accounting	<input type="text" value="0"/>
Supply Chain Management & Logistics	<input type="text" value="0"/>
Manufacturing	<input type="text" value="0"/>
Procurement	<input type="text" value="0"/>
Research & Development	<input type="text" value="0"/>
Total	0

Sourcing strategy

Definition of inbound supply concepts incl. internal performance agreements for products and services, structure and size of the supply network (depending on the predetermined end-to-end supply chain design)

Marketing & Sales	<input type="text" value="0"/>
Finance & Accounting	<input type="text" value="0"/>
Supply Chain Management & Logistics	<input type="text" value="0"/>
Manufacturing	<input type="text" value="0"/>
Procurement	<input type="text" value="0"/>
Research & Development	<input type="text" value="0"/>
Total	0

Distribution strategy

Definition of outbound supply concepts incl. internal performance agreements for products and services, structure and size of the distribution network (depending on the predetermined end-to-end supply chain design)

Marketing & Sales	<input type="text" value="0"/>
Finance & Accounting	<input type="text" value="0"/>
Supply Chain Management & Logistics	<input type="text" value="0"/>
Manufacturing	<input type="text" value="0"/>
Procurement	<input type="text" value="0"/>
Research & Development	<input type="text" value="0"/>
Total	0

Long-term supply and demand planning

Agreement on a common long-term supply and demand plan for factories, suppliers and distribution networks

Marketing & Sales	<input type="text" value="0"/>
Finance & Accounting	<input type="text" value="0"/>
Supply Chain Management & Logistics	<input type="text" value="0"/>
Manufacturing	<input type="text" value="0"/>
Procurement	<input type="text" value="0"/>
Research & Development	<input type="text" value="0"/>
Total	0

Mid-term inventory management

Definition where exactly in the supply chain how much and what kind of inventory should be provisioned.

Marketing & Sales	<input type="text" value="0"/>
Finance & Accounting	<input type="text" value="0"/>
Supply Chain Management & Logistics	<input type="text" value="0"/>
Manufacturing	<input type="text" value="0"/>
Procurement	<input type="text" value="0"/>
Research & Development	<input type="text" value="0"/>
Total	0

14. Supply chain complexity

This is the [last page with content-related questions](#). The next 5 questions are concerned with the complexity of the supply chain of your business unit. Estimates are also helpful if you do not have the exact data available.

Which supply chain position does your business unit mainly occupy?

Please select the most appropriate option, e.g., the option with the most sales.

- Trade or distribution company
- Original equipment manufacturer
- Module or systems supplier (1st tier)
- Component supplier (2nd tier)
- Norm and standard parts supplier (3rd tier)
- Raw materials supplier (4th tier)

How many internal and external product-related first tier suppliers does your business unit have?

An estimate is also helpful

- Less than 50
- 50 - 99
- 100 - 149
- 150 - 249
- 250 - 399
- 400 - 649
- 650 and more

How many internal and external direct customers does your business unit have?

An estimate is also helpful.

- Less than 50
- 50 - 149
- 150 - 399
- 400 - 999
- 1.000 - 2.999
- 3.000 - 9.999
- 10.000 and more

How was the annual purchasing volume approximately split among the following geographic regions? An estimate is also helpful.

Please enter your estimates as % of the purchasing volume.

Austria, Germany, Switzerland	<input type="text" value="0"/>
Other European countries	<input type="text" value="0"/>
North America (US, Canada, Mexico)	<input type="text" value="0"/>
Asia/Pacific region	<input type="text" value="0"/>
The rest of the world (e.g., Latin America)	<input type="text" value="0"/>
Total	0

How was the annual sales volume approximately split among the following geographic regions? An estimate is also helpful.

Please enter your estimates as % of the sales volume.

Austria, Germany, Switzerland	<input type="text" value="0"/>
Other European countries	<input type="text" value="0"/>
North America (US, Canada, Mexico)	<input type="text" value="0"/>
Asia/Pacific region	<input type="text" value="0"/>
The rest of the world (e.g., Latin America)	<input type="text" value="0"/>
Total	0

15. Descriptive variables 1

In about 2 minutes you will have successfully completed this survey. The remaining general questions are regarding your company and yourself.

In which country do you work?

Germany ▼

In which industry is your current company mainly operating in? Please select your business unit's industry, if your company has multiple diverse business units.

Aerospace & Defense ▼

Total number of employees for your entire company in 2014?

- Less than 50
- 50 - 149
- 150 - 399
- 400 - 999
- 1.000 - 2.999
- 3.000 - 9.999
- 10.000 and more

16. Descriptive variables 2

This is the last page of this survey.

How many years of professional experience do you have (without apprenticeships or internships)?

- Less than 1 year
- 1 -2 years
- 3 -4 years
- 5 - 9 years
- 10 - 25 years
- More than 25 years

How many years have you worked for your current employer (without apprenticeships or internships)?

- Less than 1 year
- 1 -2 years
- 3 -4 years
- 5 - 9 years
- 10 - 25 years
- More than 25 years

Which management level corresponds best to your current position?

- Top management level (e.g., CSCO, COO, EVP, board of directors)
- Upper management level (e.g., SVP, managing director of business unit/division.)
- Middle management level (e.g., VP, head of department)
- Lower management level (e.g., team leader, project manager, employees with managerial responsibilities)
- No management responsibilities (e.g., specialist, consultant, trainee)

For which of the following corporate functions are you the highest-ranking executive?

Multiple answers are possible.

- Supply Chain Management
- Logistics
- Manufacturing
- Procurement
- Research & Development
- Finance & Accounting
- Marketing & Sales
- I am not the highest-ranking executive for any of these functions.

Please enter your official job title here (without company details)

(optional)

In case you are interested in receiving findings and insights after completion of this study, please enter your e-mail address here.

If you have comments or suggestions concerning this survey, you can enter it here or contact us at any time personally (contact information will be displayed on the following page).

17. Thank you page and access to complimentary article

Ein herzliches Dankeschön, dass Sie sich die Zeit genommen haben, diesen Fragebogen zu beantworten! Die Umfrage ist beendet. Ihre Antworten sind jetzt gespeichert.

Als Dank für Ihre Teilnahme unterstützen wir das SOS-Kinderdorf in Liberia mit 5 Impfungen gegen Masern und stellen Ihnen unsere praxisorientierte Forschungspublikation "[Time to get SCM to the Board](#)" zum [Download](#) zur Verfügung.

Vielen Dank für Ihre Unterstützung!



Prof. Dr. Carl Marcus Wallenburg
WHU



Prof. Dr. Kai Hoberg
KLU



Niels Patschke, Doktorand
WHU

WHU - Otto Beisheim School of Management
Lehrstuhl für Logistik und Dienstleistungsmanagement
Campus Düsseldorf, Erkrather Straße 224a
40233 Düsseldorf
Tel.: +49 175 318 - 1902
E-Mail: scm-studie@whu.edu
www.whu.edu/lsm

Appendix 2-1

Measurement scales and descriptive statistics

Constructs and scale items		ME	SD	SW	t-value
Departmental influence for the SCM function (INF) (adapted from Homburg et al., 1999)					
CR = 0.86, AVE = 0.86; 0 = no influence and 100 = maximal influence					
What is your assessment of the degree of influence each of the following functional groups has had on the following strategic decisions of your business unit over the past three years (i.e., marketing & sales, finance & accounting, supply chain management & logistics, manufacturing, procurement, and research & development)? Please distribute exactly 100 points, even if additional corporate functions are involved and/or grouped differently in your business unit. Many points correspond to a high level of influence.					
INF1	New product development – Definition of product and/or service characteristics.	9.98	12.43	-	-
INF2	Expansion into new geographic customer markets – Definition of new geographical customer markets and how they should be entered (design of new value chains and new delivery models).	13.25	13.13	-	-
INF3	Design of overarching business processes – Definition of business processes involving at least one customer and one supplier.	29.07	18.14	-	-
INF4	Major capital expenditures – Definition of major capital expenditures in new sites, acquisitions, IT or production technology.	15.16	16.57	-	-
INF5	Strategic direction of the business unit – Strategy formulation and/or definition of competitive strategies for the business unit.	13.97	15.08	-	-
INF6	End-to-end supply chain design – Definition of supply chain performance requirements, e.g., focus on volume flexibility vs. costs vs. responsiveness.	39.21	21.48	-	-
INF7	Sourcing strategy – Definition of inbound supply concepts, including internal performance agreements for products and services, structure and size of the supply network (depending on the predetermined end-to-end supply chain design).	28.86	20.64	-	-
INF8	Distribution strategy – Definition of outbound supply concepts, including internal performance agreements for products and services, structure and size of the distribution network (depending on the predetermined end-to-end supply chain design).	41.80	23.30	-	-
INF9	Long-term supply and demand planning – Agreement on a common long-term supply and demand plan for factories, suppliers and distribution networks.	31.97	19.93	-	-
INF10	Mid-term inventory management – Definition where exactly in the supply chain how much and what kind of inventory should be provisioned.	47.61	26.15	-	-

Note: ME = mean, SD = standard deviation, SW = standardized regression weight; CR = composite reliability, AVE = average variance extracted.

Constructs and scale items (continued)		ME	SD	SW	t-value
Importance of strategic decision for success of the business unit (IMP) (adapted from Homburg et al., 1999)					
CR = -, AVE = -; 1 = very low importance and 7 = very high importance					
What is the importance of these decisions for the success of your business unit?					
IMP1	New product development	5.64	1.43	-	-
IMP2	Expansion into new geographic customer markets	5.22	1.43	-	-
IMP3	Design of overarching business processes	5.21	1.22	-	-
IMP4	Major capital expenditure	5.35	1.20	-	-
IMP5	Strategic direction of the business unit	5.85	1.00	-	-
IMP6	End-to-end supply chain design	5.56	1.26	-	-
IMP7	Sourcing strategy	5.38	1.31	-	-
IMP8	Distribution strategy	5.24	1.31	-	-
IMP9	Long-term supply and demand planning	5.59	1.25	-	-
IMP10	Mid-term inventory management	5.22	1.27	-	-
Transactional leadership (TAL) (adapted from Avolio et al., 1999; Hult et al., 2007b)					
CR = 0.87, AVE = 0.62; 1 = strongly disagree and 7 = strongly agree					
The highest-ranking executive of your business unit's supply chain function (e.g., SVP supply chain)...					
TAL1	... very strongly encourages the use of uniform procedures in the supply chain.	5.42	1.40	0.76	14.18
TAL2	... lets his/her employees know very frequently what is expected of them in the supply chain function.	5.07	1.49	0.84	16.08
TAL3	... decides what shall be done and how it will be done in the supply chain function.	4.82	1.50	0.71	12.85
TAL4	... very often asks that employees follow established rules and procedures.*				
TAL5	... very strongly maintains definite performance standards in the supply chain function.	5.21	1.49	0.84	fixed
Transformational leadership (TFL) (adapted from Avolio et al., 1999; Hult et al., 2007b)					
CR = 0.91, AVE = 0.71; 1 = strongly disagree and 7 = strongly agree					
The highest-ranking executive of your business unit's supply chain function (e.g., SVP supply chain)...					
TFL1	... very often speaks with other executives about what needs to be achieved in the supply chain.	5.28	1.43	0.84	17.85
TFL2	... very often spends time informing and educating other executives about the potential of the supply chain.	4.84	1.52	0.91	20.16
TFL3	... often seeks very different perspectives when solving supply chain problems.	4.76	1.49	0.74	14.56
TFL4	... goes beyond the supply chain function's own self-interest for the good of the business unit during decision-making.*				
TFL5	... very often explains the central purpose underlying our supply chain actions to other executives.	5.14	1.50	0.86	fixed

* Items dropped during scale refinement.

Note: ME = mean, SD = standard deviation, SW = standardized regression weight; CR = composite reliability, AVE = average variance extracted.

Constructs and scale items (continued)		ME	SD	SW	t-value
Environmental uncertainty short-term (EUST) (adapted from Chen and Paulraj, 2004; Dröge et al., 2003; Sun et al., 2009)					
CR = 0.75, AVE = 0.51; 1 = strongly disagree and 7 = strongly agree					
To what extent do the following statements apply to your business unit?					
EUST1	Our planned production volume often changes drastically.*				
EUST2	Our short-term sales forecasts are very often inaccurate.	4.16	1.72	0.72	fixed
EUST3	Our short-term supply requirements vary drastically (e.g., the demand for raw materials or semi-finished products for further processing).	3.91	1.54	0.69	8.65
EUST4	Our short-term customer demand varies drastically.	4.34	1.58	0.73	8.77
EUST5	Very often our orders cannot be delivered on time by our suppliers on short notice.*				
Environmental uncertainty long-term (EULT) (adapted from Anand and Ward, 2004)					
CR = 0.81, AVE = 0.58; 1 = strongly disagree and 7 = strongly agree					
To what extent do the following statements apply to the top management of your business unit?					
EULT1	... products and services become outdated very rapidly.	3.09	1.71	0.75	10.74
EULT2	... new operating processes and technology are introduced very frequently.*				
EULT3	... preferences of customers change very rapidly.	3.59	1.54	0.74	10.68
EULT4	... new products and services are introduced very frequently.	3.87	1.67	0.79	fixed
EULT5	... competitors alter their strategies or pricing behavior very rapidly.*				
Top management support (TMS) (adapted from Chen and Paulraj, 2004; Krause, 1999; Monczka et al., 1993)					
CR = 0.93, AVE = 0.77; 1 = strongly disagree and 7 = strongly agree					
To what extent do the following statements apply to the top management of your business unit?					
TMS1	Top management considers the supply chain function to be a vital part of our corporate strategy.	5.05	1.62	0.87	20.49
TMS2	Top management very often emphasizes the supply chain function's strategic role.	4.55	1.68	0.85	19.42
TMS3	The supply chain function's views are important to most top managers.	4.48	1.57	0.91	fixed
TMS4	Top management is very supportive of our efforts to improve the supply chain function.*				
TMS5	The behavior and the decisions of top management indicate a strong supply chain management-understanding	4.13	1.65	0.88	21.21

* Items dropped during scale refinement.

Note: ME = mean, SD = standard deviation, SW = standardized regression weight; CR = composite reliability, AVE = average variance extracted.

Constructs and scale items (continued)		ME	SD	SW	t-value
Business skills (BUS) (base on Byrd and Turner, 2001; Gammelgaard and Larson, 2001)					
CR = 0.93, AVE = 0.83 (values for second order construct supply chain professional competencies)					
1 = strongly disagree and 7 = strongly agree					
In our business unit the typical employee of the supply chain function has excellent skills in...?					
BUS1	... working in teams.	5.41	1.24	0.74	12.53
BUS2	... planning, organizing and executing projects.	5.03	1.37	0.77	13.12
BUS3	... working together with other departments.*				
BUS4	... working on multiple tasks in parallel.	5.18	1.29	0.68	11.32
BUS5	... thinking across departmental boundaries.	4.84	1.53	0.80	fixed
BUS6	... writing concise documents.*				
Supply chain management skills (SCMS) (based on Byrd and Turner, 2001; Gammelgaard and Larson, 2001)					
CR = 0.93, AVE = 0.83 (values for second order construct supply chain professional competencies)					
1 = strongly disagree and 7 = strongly agree					
In our business unit the typical employee of the supply chain function has excellent skills in...					
SCMS1	... managing supply chain information flows.	4.90	1.35	0.76	11.89
SCMS2	... managing physical flows.*				
SCMS3	... thinking across company boundaries.*				
SCMS4	... analyzing supply chain processes.	4.70	1.43	0.76	fixed
SCMS5	... implementing supply chain processes.	4.66	1.36	0.74	16.66
SCMS6	... creating scenarios for long-term demand and supply planning.	4.26	1.58	0.71	11.22

* Items dropped during scale refinement.

Note: ME = mean, SD = standard deviation, SW = standardized regression weight; CR = composite reliability, AVE = average variance extracted.

Control variables

Variables	
FTE	Total number of employees for your entire company in 2014?
Industry	In which industry is your current company mainly operating in? Please select your business unit's industry, if your company has multiple diverse business units.
Country	In which country do you work?

Appendix 3-1

Measurement scales and descriptive statistics

Constructs and scale items		ME	SD	SW	t-value
Departmental influence for the SCM function (INF) (adapted from Homburg et al., 1999)					
CR = 0.88, AVE = 0.88; 0 = no influence and 100 = maximal influence					
What is your assessment of the degree of influence each of the following functional groups has had on the following strategic decisions of your business unit over the past three years (i.e., marketing & sales, finance & accounting, supply chain management & logistics, manufacturing, procurement, and research & development)? Please distribute exactly 100 points, even if additional corporate functions are involved and/or grouped differently in your business unit. Many points correspond to a high level of influence.					
INF1	New product development – Definition of product and/or service characteristics.	9.98	12.43	-	-
INF2	Expansion into new geographic customer markets – Definition of new geographical customer markets and how they should be entered (design of new value chains and new delivery models).	13.25	13.13	-	-
INF3	Design of overarching business processes – Definition of business processes involving at least one customer and one supplier.	29.07	18.14	-	-
INF4	Major capital expenditures – Definition of major capital expenditures in new sites, acquisitions, IT or production technology.	15.16	16.57	-	-
INF5	Strategic direction of the business unit – Strategy formulation and/or definition of competitive strategies for the business unit.	13.97	15.08	-	-
INF6	End-to-end supply chain design – Definition of supply chain performance requirements, e.g., focus on volume flexibility vs. costs vs. responsiveness.	39.21	21.48	-	-
INF7	Sourcing strategy – Definition of inbound supply concepts, including internal performance agreements for products and services, structure and size of the supply network (depending on the predetermined end-to-end supply chain design).	28.86	20.64	-	-
INF8	Distribution strategy – Definition of outbound supply concepts, including internal performance agreements for products and services, structure and size of the distribution network (depending on the predetermined end-to-end supply chain design).	41.80	23.30	-	-
INF9	Long-term supply and demand planning – Agreement on a common long-term supply and demand plan for factories, suppliers and distribution networks.	31.97	19.93	-	-
INF10	Mid-term inventory management – Definition where exactly in the supply chain how much and what kind of inventory should be provisioned.	47.61	26.15	-	-

Note: ME = mean, SD = standard deviation, SW = standardized regression weight; CR = composite reliability, AVE = average variance extracted.

Constructs and scale items		ME	SD	SW	t-value
Dispersion of departmental influence (DISP) (adapted from Krohmer et al., 2002)					
CR = 0.88, AVE = 0.88; 0 = no dispersion and 100 = maximal dispersion					
What is your assessment of the degree of influence each of the following functional groups has had on the following strategic decisions of your business unit over the past three years (i.e., marketing & sales, finance & accounting, supply chain management & logistics, manufacturing, procurement, and research & development)? Please distribute exactly 100 points, even if additional corporate functions are involved and/or grouped differently in your business unit. Many points correspond to a high level of influence.					
DISP1	New product development – Definition of product and/or service characteristics.	44.26	18.96	-	-
DISP2	Expansion into new geographic customer markets – Definition of new geographical customer markets and how they should be entered (design of new value chains and new delivery models).	33.78	21.61	-	-
DISP3	Design of overarching business processes – Definition of business processes involving at least one customer and one supplier.	47.92	21.55	-	-
DISP4	Major capital expenditures – Definition of major capital expenditures in new sites, acquisitions, IT or production technology.	44.88	21.29	-	-
DISP5	Strategic direction of the business unit – Strategy formulation and/or definition of competitive strategies for the business unit.	44.61	21.93	-	-
DISP6	End-to-end supply chain design – Definition of supply chain performance requirements, e.g., focus on volume flexibility vs. costs vs. responsiveness.	42.54	21.25	-	-
DISP7	Sourcing strategy – Definition of inbound supply concepts, including internal performance agreements for products and services, structure and size of the supply network (depending on the predetermined end-to-end supply chain design).	39.48	20.41	-	-
DISP8	Distribution strategy – Definition of outbound supply concepts, including internal performance agreements for products and services, structure and size of the distribution network (depending on the predetermined end-to-end supply chain design).	32.69	21.09	-	-
DISP9	Long-term supply and demand planning – Agreement on a common long-term supply and demand plan for factories, suppliers and distribution networks.	41.79	20.05	-	-
DISP10	Mid-term inventory management – Definition where exactly in the supply chain how much and what kind of inventory should be provisioned.	33.91	21.06	-	-

Note: ME = mean, SD = standard deviation, SW = standardized regression weight; CR = composite reliability, AVE = average variance extracted.

Constructs and scale items (continued)		ME	SD	SW	t-value
Importance of strategic decision for success of the business unit (IMP) (adapted from Homburg et al., 1999)					
CR = -, AVE = -; 1 = very low importance and 7 = very high importance					
What is the importance of these decisions for the success of your business unit?					
IMP1	New product development	5.64	1.43	-	-
IMP2	Expansion into new geographic customer markets	5.22	1.43	-	-
IMP3	Design of overarching business processes	5.21	1.22	-	-
IMP4	Major capital expenditure	5.35	1.20	-	-
IMP5	Strategic direction of the business unit	5.85	1.00	-	-
IMP6	End-to-end supply chain design	5.56	1.26	-	-
IMP7	Sourcing strategy	5.38	1.31	-	-
IMP8	Distribution strategy	5.24	1.31	-	-
IMP9	Long-term supply and demand planning	5.59	1.25	-	-
IMP10	Mid-term inventory management	5.22	1.27	-	-
Customer orientation (CO) (adapted from Rosenzweig and Roth, 2007; Sinkovics and Roath, 2004)					
CR = 0.86, AVE = 0.62; 1 = strongly disagree and 7 = strongly agree					
To what extent do the following statements apply regarding the customer orientation of your business unit's supply chain management function? Our...					
CO1	... supply chain function derives its strategy based on a thorough understanding of customer needs.	4.89	1.43	0.83	fixed
CO2	... supply chain managers understand very well how the supply chain function can contribute to creating customer value.	5.16	1.36	0.82	15.22
CO3	... supply chain strategies are very much driven by possibilities for creating value for customers.	4.76	1.43	0.88	16.45
CO4	... supply chain function responds very quickly to negative customer satisfaction information.	4.77	1.51	0.59	10.03
CO5	... supply chain function foresees customers' product or service needs very reliably.*				
New market performance (NMP) (adopted from Zacharia and Mentzer, 2007)					
CR = 0.88, AVE = 0.65; 1 = fell far short and 7 = far exceeded					
When answering the next question, please think of an entry in an important and geographical new customer market by your business unit that has already been completed (either regional or international).					
To what extent has this important and geographically new customers market fulfilled its expectations with regard to the ...					
NMP1	... profit objectives?	3.75	1.14	0.80	fixed
NMP2	... budget objectives?	3.81	1.13	0.75	16.70
NMP3	... sales objectives?	3.91	1.16	0.88	14.95
NMP4	... market share objectives?	3.89	1.07	0.79	13.75
NMP5	... speed to market objectives?*				
NMP6	... service level objectives?*				

* Items dropped during scale refinement.

Note: ME = mean, SD = standard deviation, SW = standardized regression weight; CR = composite reliability, AVE = average variance extracted.

Constructs and scale items (continued)		ME	SD	SW	t-value
Firm performance (FP) (adopted from Carr and Pearson, 1999; Rexhausen et al., 2012)					
CR = 0.89, AVE = 0.68; 1 = much worse and 7 = much better					
How does the success of your business unit compare to your competitors in terms of...					
FP1	... profit increase?	4 .46	1 .23	0.83	fixed
FP2	... average return on sales (profit margin)?	4 .57	1 .31	0.93	20.43
FP3	... operating result (EBIT)?	4 .53	1 .31	0.95	20.99
FP4	... sales growth?	4 .45	1 .24	0.51	10.26

Note: ME = mean, SD = standard deviation, SW = standardized regression weight; CR = composite reliability, AVE = average variance extracted.

Control variables

Variables	
FTE	Total number of employees for your entire company in 2014?
Industry	In which industry is your current company mainly operating in? Please select your business unit's industry, if your company has multiple diverse business units.
Country	In which country do you work?

Appendix 4-1

Measurement scales and descriptive statistics

Constructs and scale items	Influence difference		SCM influence		Marketing influence		
	ME	SD	ME	SD	ME	SD	
Influence differences for general management decisions (IDGM) (adapted from Homburg et al., 1999)							
CR = 0.80, AVE = 0.80; 0 = no influence and 100 = maximal influence							
What is your assessment of the degree of influence each of the following functional groups has had on the following strategic decisions of your business unit over the past three years (i.e., marketing & sales, finance & accounting, supply chain management & logistics, manufacturing, procurement, and research & development)? Please distribute exactly 100 points, even if additional corporate functions are involved and/or grouped differently in your business unit. Many points correspond to a high level of influence.							
IDGM1	New product development – Definition of product and/or service characteristics.	-24.09	24.60	9.98	12.43	34.07	17.45
IDGM2	Expansion into new geographic customer markets – Definition of new geographical customer markets and how they should be entered (design of new value chains and new delivery models).	-38.90	33.80	13.25	13.13	52.15	24.57
IDGM3	Design of overarching business processes – Definition of business processes involving at least one customer and one supplier.	5.18	30.98	29.07	18.14	23.89	18.56
IDGM4	Major capital expenditures – Definition of major capital expenditures in new sites, acquisitions, IT or production technology.	-0.77	24.68	15.16	16.57	15.93	14.45
IDGM5	Strategic direction of the business unit – Strategy formulation and/or definition of competitive strategies for the business unit.	-23.93	33.00	13.97	15.08	37.91	22.09

Note: ME = mean, SD = standard deviation, SW = standardized regression weight; CR = composite reliability, AVE = average variance extracted.

Constructs and scale items (continued)	Influence difference		SCM influence		Marketing influence		
	ME	SD	ME	SD	ME	SD	
Influence differences for SCM decisions (IDSCM) (adapted from Homburg et al., 1999)							
CR = 0.80, AVE = 0.80; 0 = no influence and 100 = maximal influence							
What is your assessment of the degree of influence each of the following functional groups has had on the following strategic decisions of your business unit over the past three years (i.e., marketing & sales, finance & accounting, supply chain management & logistics, manufacturing, procurement, and research & development)? Please distribute exactly 100 points, even if additional corporate functions are involved and/or grouped differently in your business unit. Many points correspond to a high level of influence.							
IDSCM1	End-to-end supply chain design – Definition of supply chain performance requirements, e.g., focus on volume flexibility vs. costs vs. responsiveness.	20.46	32.25	39.21	21.48	18.75	16.68
IDSCM2	Sourcing strategy – Definition of inbound supply concepts, including internal performance agreements for products and services, structure and size of the supply network (depending on the predetermined end-to-end supply chain design).	21.62	24.063	28.86	20.64	7.24	9.69
IDSCM3	Distribution strategy – Definition of outbound supply concepts, including internal performance agreements for products and services, structure and size of the distribution network (depending on the predetermined end-to-end supply chain design).	12.05	43.03	41.80	23.30	29.76	24.85
IDSCM4	Long-term supply and demand planning – Agreement on a common long-term supply and demand plan for factories, suppliers and distribution networks.	5.39	32.80	31.97	19.93	26.59	18.62
IDSCM5	Mid-term inventory management – Definition where exactly in the supply chain how much and what kind of inventory should be provisioned.	33.04	36.06	47.61	26.15	14.57	15.11

Note: ME = mean, SD = standard deviation, SW = standardized regression weight; CR = composite reliability, AVE = average variance extracted.

Constructs and scale items (continued)		ME	SD	SW	t-value
Importance of strategic decision for success of the business unit (IMP) (adapted from Homburg et al., 1999)					
CR = -, AVE = -; 1 = very low importance and 7 = very high importance					
What is the importance of these decisions for the success of your business unit?					
IMP1	New product development	5.64	1.43	-	-
IMP2	Expansion into new geographic customer markets	5.22	1.43	-	-
IMP3	Design of overarching business processes	5.21	1.22	-	-
IMP4	Major capital expenditure	5.35	1.20	-	-
IMP5	Strategic direction of the business unit	5.85	1.00	-	-
IMP6	End-to-end supply chain design	5.56	1.26	-	-
IMP7	Sourcing strategy	5.38	1.31	-	-
IMP8	Distribution strategy	5.24	1.31	-	-
IMP9	Long-term supply and demand planning	5.59	1.25	-	-
IMP10	Mid-term inventory management	5.22	1.27	-	-
Supply chain performance (SCP) (adapted from Beamon, 1999; Fawcett and Waller, 2013; Gunasekaran et al., 2004; Rexhausen et al., 2012)					
CR = 0.80, AVE = 0.47; 1 = much worse and 7 = much better					
How successful is your supply chain compared to your competitors in terms of ...					
SCP1	... costs?	4.23	1.18	0.50	fixed
SCP2	... quality?	4.91	1.13	0.56	6.58
SCP3	... responsiveness?	4.46	1.26	0.68	6.76
SCP4	... supply chain innovation?	4.11	1.36	0.78	7.92
SCP5	... optimization along the entire supply chain?	4.34	1.34	0.84	7.69
Note: ME = mean, SD = standard deviation, SW = standardized regression weight; CR = composite reliability, AVE = average variance extracted.					

Control variables

Variables	
FTE	Total number of employees for your entire company in 2014?
Industry	In which industry is your current company mainly operating in? Please select your business unit's industry, if your company has multiple diverse business units.
Country	In which country do you work?
IDGMOF	Influence allocated to other departmental functions over general management decisions.
IDGMSCM	Influence allocated to other departmental functions over SCM decisions.

References

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Thousand Oaks, CA: Sage Publications.
- Anand, G., & Ward, P. T. (2004). Fit, flexibility and performance in manufacturing: Coping with dynamic environments. *Production and Operations Management, 13* (4), 369-385.
- Anderson, P. F. (1982). Marketing, strategic planning and the theory of the firm. *The Journal of Marketing, 46* (Spring), 15-26.
- Antonakis, J., Bastardo, N., Jacquart, P., & Shamir, B. (2016). Charisma: An ill-defined and ill-measured gift. *Annual Review of Organizational Psychology and Organizational Behavior, 3* (1), 293-319.
- Archer, N. P., Sik Jeong, J., & Hong, P. (2007). Customer orientation and performance outcomes in supply chain management. *Journal of Enterprise Information Management, 20* (5), 578-594.
- Armstrong, J. S., & Overton, T. S. (1977). Estimating nonresponse bias in mail surveys. *Journal of Marketing Research, 14* (3), 396-402.
- Ashenbaum, B., Maltz, A., Ellram, L., & Barratt, M. A. (2009). Organizational alignment and supply chain governance structure: Introduction and construct validation. *The International Journal of Logistics Management, 20* (2), 169-186.
- Avolio, B. J., Bass, B. M., & Jung, D. I. (1999). Re-examining the components of transformational and transactional leadership using the multifactor leadership questionnaire. *Journal of Occupational and Organizational Psychology, 72* (4), 441-462.
- Azadegan, A., Patel, P. C., Zangouinezhad, A., & Linderman, K. (2013). The effect of environmental complexity and environmental dynamism on lean practices. *Journal of Operations Management, 31* (4), 193-212.
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science, 16* (1), 74-94.
- Barnes, J., & Liao, Y. (2012). The effect of individual, network, and collaborative competencies on the supply chain management system. *International Journal of Production Economics, 140* (2), 888-899.
- Bass, B. M. (1985). *Leadership and performance beyond expectations*. New York, NY: The Free Press.
- Bass, B. M., & Avolio, B. J. (1995). *MLQ multifactor leadership questionnaire*. Redwood City, CA: Mind Garden.
- Bass, B. M., Avolio, B. J., Jung, D. I., & Berson, Y. (2003). Predicting unit performance by assessing transformational and transactional leadership. *Journal of Applied Psychology, 88* (2), 207-218.
- Beamon, B. M. (1999). Measuring supply chain performance. *International Journal of Operations & Production Management, 19* (3), 275-292.
- Benito-Osorio, D., Colino, A., Guerras-Martín, L. Á., & Zúñiga-Vicente, J. Á. (2016). The international diversification-performance link in Spain: Does firm size really matter? *International Business Review, 25* (2), 548-558.
- Bentler, P. M. (2009). Alpha, dimension-free, and model-based internal consistency reliability. *Psychometrika, 74* (1), 137-143.

- Bode, C., & Wagner, S. M. (2015). Structural drivers of upstream supply chain complexity and the frequency of supply chain disruptions. *Journal of Operations Management*, 36, 215-228.
- Bode, C., Wagner, S. M., Petersen, K. J., & Ellram, L. M. (2011). Understanding responses to supply chain disruptions: Insights from information processing and resource dependence perspectives. *Academy of Management Journal*, 54 (4), 833-856.
- Brouthers, K. D., Brouthers, L. E., & Werner, S. (2008). Real options, international entry mode choice and performance. *Journal of Management Studies*, 45 (5), 936-960.
- Brown, T. A., & Moore, M. T. (2012). Confirmatory factor analysis. In R. H. Hoyle (Ed.), *Handbook of structural equation modeling* (pp. 361-379). New York, NY: Guilford Publications.
- Burcher, P. G., Lee, G. L., & Sohal, A. S. (2007). Production and operations managers and logistics managers: A cross-country comparison. *Journal of Manufacturing Technology Management*, 18 (5), 549-560.
- Burns, L. R., & Wholey, D. R. (1993). Adoption and abandonment of matrix management programs: Effects of organizational characteristics and interorganizational networks. *Academy of Management Journal*, 36 (1), 106-138.
- Busse, C., Meinlschmidt, J., & Foerstl, K. (2017). Managing information processing needs in global supply chains: A prerequisite to sustainable supply chain management. *Journal of Supply Chain Management*, 53 (1), 87-113.
- Byrd, T. A., & Turner, D. E. (2001). An exploratory analysis of the value of the skills of it personnel: Their relationship to its infrastructure and competitive advantage. *Decision Sciences*, 32 (1), 21-54.
- Carr, A., & Pearson, J. (1999). Strategically managed buyer-supplier relationships and performance outcomes. *Journal of Operations Management*, 17 (5), 497-519.
- Carter, C. R., Meschnig, G., & Kaufmann, L. (2015). Moving to the next level: Why our discipline needs more multilevel theorization. *Journal of Supply Chain Management*, 51 (4), 94-102.
- Cespedes, F. V. (1995). *Concurrent marketing: Integrating product, sales, and service*. Boston, MA: Harvard Business Press.
- Chen, H.-L., Hsu, W.-T., & Chang, C.-Y. (2016). Independent directors' human and social capital, firm internationalization and performance implications: An integrated agency-resource dependence view. *International Business Review*, 25 (4), 859-871.
- Chen, I. J., & Paulraj, A. (2004). Towards a theory of supply chain management: The constructs and measurements. *Journal of Operations Management*, 22 (2), 119-150.
- Christopher, M. (2012). Managing supply chain complexity: Identifying the requisite skills. *Supply Chain Forum: An International Journal*, 13 (2), 4-9.
- Christopher, M. (2016). *Logistics & supply chain management*: Pearson UK.
- Christopher, M., & Ryals, L. J. (2014). The supply chain becomes the demand chain. *Journal of Business Logistics*, 35 (1), 29-35.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2013). *Applied multiple regression/correlation analysis for the behavioral sciences* (3 ed.). Mahwah, NJ: Erlbaum.

- Contractor, F. J. (2007). Is international business good for companies? The evolutionary or multi-stage theory of internationalization vs. the transaction cost perspective. *Management International Review*, 47 (3), 453-475.
- Cousins, P. D., Lawson, B., Petersen, K. J., & Handfield, R. B. (2011). Breakthrough scanning, supplier knowledge exchange, and new product development performance. *Journal of Product Innovation Management*, 28 (6), 930-942.
- Cyert, R. M., & March, J. G. (1963). *A behavioral theory of the firm*. Englewood Cliffs, NJ: Prentice-Hall.
- Daft, R. L., & Lengel, R. H. (1986). Organizational information requirements, media richness and structural design. *Management Science*, 32 (5), 554-571.
- Daft, R. L., & Weick, K. E. (1984). Toward a model of organizations as interpretation systems. *Academy of Management Review*, 9 (2), 284-295.
- Daugherty, P. J., Chen, H., Mattioda, D. D., & Grawe, S. J. (2009). Marketing/logistics relationships: Influence on capabilities and performance. *Journal of Business Logistics*, 30 (1), 1-18.
- Davis, T. (1993). Effective supply chain management. *Sloan Management Review*, 34 (4), 35-46.
- Day, G. S. (1999). *Market driven strategy: Process for creating value: With a new information*. New York, NY: The Free Press.
- Dearborn, D. C., & Simon, H. A. (1958). Selective perception: A note on the departmental identifications of executives. *Sociometry*, 21 (2), 140-144.
- Defee, C. C., & Stank, T. P. (2005). Applying the strategy-structure-performance paradigm to the supply chain environment. *The International Journal of Logistics Management*, 16 (1), 28-50.
- Deshpande, R., Farley, J. U., & Webster, F. E. (1993). Corporate culture, customer orientation, and innovativeness in Japanese firms: A quadrad analysis. *Journal of Marketing*, 57 (1), 23-37.
- Dooley, R. S., & Fryxell, G. E. (1999). Attaining decision quality and commitment from dissent: The moderating effects of loyalty and competence in strategic decision-making teams. *Academy of Management Journal*, 42 (4), 389-402.
- Dougherty, D. (1992). Interpretive barriers to successful product innovation in large firms. *Organization Science*, 3 (2), 179-202.
- Douglas, M. (1987). *How institutions think*. London: Routledge and Kegan Paul.
- Driedonks, B. A., Gevers, J. M., & van Weele, A. J. (2010). Managing sourcing team effectiveness: The need for a team perspective in purchasing organizations. *Journal of Purchasing and Supply Management*, 16 (2), 109-117.
- Dröge, C., Claycomb, C., & Germain, R. (2003). Does knowledge mediate the effect of context on performance? Some initial evidence. *Decision Sciences*, 34 (3), 541-568.
- Dunn, S. C., Seaker, R. F., & Waller, M. A. (1994). Latent variables in business logistics research: Scale development and validation. *Journal of Business Logistics*, 15 (2), 145-172.

- Dyer, J. H., & Singh, H. (1998). The relational view: Cooperative strategy and sources of interorganizational competitive advantage. *Academy of Management Review*, 23 (4), 660-679.
- Eisenhardt, K. M., & Schoonhoven, C. B. (1990). Organizational growth: Linking founding team, strategy, environment, and growth among us semiconductor ventures, 1978-1988. *Administrative Science Quarterly*, 35 (3), 504-529.
- Eisenhardt, K. M., & Zbaracki, M. J. (1992). Strategic decision making. *Strategic Management Journal*, 13 (S2), 17-37.
- Ellinger, A. E., & Ellinger, A. D. (2013). Leveraging human resource development expertise to improve supply chain managers' skills and competencies. *European Journal of Training and Development*, 38 (1/2), 118-135.
- Ellinger, A. E., Keller, S. B., & Hansen, J. D. (2006). Bridging the divide between logistics and marketing: Facilitating collaborative behavior. *Journal of Business Logistics*, 27 (2), 1-27.
- Ellinger, A. E., Natarajathinam, M., Adams, F. G., Gray, J. B., Hofman, D., & O'Marah, K. (2011). Supply chain management competency and firm financial success. *Journal of Business Logistics*, 32 (3), 214-226.
- Ellram, L. M., & Cooper, M. C. (2014). Supply chain management: It's all about the journey, not the destination. *Journal of Supply Chain Management*, 50 (1), 8-20.
- Engelen, A. (2011). Which department should have more influence on organization-level decisions? A strategy-dependent analysis. *Journal of Strategic Marketing*, 19 (3), 229-254.
- Enz, C. A. (1986). *Power and shared values in the corporate culture*. Ann Arbor, MI: UMI Research Press.
- Enz, M. G., & Lambert, D. M. (2015). Measuring the financial benefits of cross-functional integration influences management's behavior. *Journal of Business Logistics*, 36 (1), 25-48.
- Esper, T. L., Defee, C. C., & Mentzer, J. T. (2010a). A framework of supply chain orientation. *The International Journal of Logistics Management*, 21 (2), 161-179.
- Esper, T. L., Ellinger, A. E., Stank, T. P., Flint, D. J., & Moon, M. (2010b). Demand and supply integration: A conceptual framework of value creation through knowledge management. *Journal of the Academy of Marketing Science*, 38 (1), 5-18.
- Fawcett, S. E., Magnan, G. M., & McCarter, M. W. (2008). Benefits, barriers, and bridges to effective supply chain management. *Supply Chain Management: An International Journal*, 13 (1), 35-48.
- Fawcett, S. E., & Waller, M. A. (2013). Considering supply chain management's professional identity: The beautiful discipline (or, "we don't cure cancer, but we do make a big difference"). *Journal of Business Logistics*, 34 (3), 183-188.
- Fawcett, S. E., Wallin, C., Allred, C., Fawcett, A. M., & Magnan, G. M. (2011). Information technology as an enabler of supply chain collaboration: A dynamic-capabilities perspective relationships. *Journal of Supply Chain Management*, 47 (1), 38-59.
- Feng, H., Morgan, N. A., & Rego, L. L. (2015). Marketing department power and firm performance. *Journal of Marketing*, 79 (5), 1-20.

- Finkelstein, S. (1992). Power in top management teams: Dimensions, measurement, and validation. *Academy of Management Journal*, 35 (3), 505-538.
- Fisher, M., & Raman, A. (1996). Reducing the cost of demand uncertainty through accurate response to early sales. *Operations research*, 44 (1), 87-99.
- Flint, D. J., & Mentzer, J. T. (2000). Logisticians as marketers: Their role when customers' desired value changes. *Journal of Business Logistics*, 21 (2), 19-46.
- Flynn, B. B., & Flynn, E. J. (1999). Information-processing alternatives for coping with manufacturing environment complexity. *Decision Sciences*, 30 (4), 1021-1052.
- Flynn, B. B., Huo, B., & Zhao, X. (2010). The impact of supply chain integration on performance: A contingency and configuration approach. *Journal of Operations Management*, 28 (1), 58-71.
- Flynn, B. B., Koufteros, X., & Lu, G. (2016). On theory in supply chain uncertainty and its implications for supply chain integration. *Journal of Supply Chain Management*, 52 (3), 3-27.
- Fornell, C. (1983). Issues in the application of covariance structure analysis: A comment. *Journal of Consumer Research*, 9 (4), 443-448.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18 (1), 39-50.
- Frankel, R., Bolumole, Y. A., Eltantawy, R. A., Paulraj, A., & Gundlach, G. T. (2008). The domain and scope of SCM's foundational disciplines—insights and issues to advance research. *Journal of Business Logistics*, 29 (1), 1-30.
- Frankel, R., & Mollenkopf, D. A. (2015). Cross-functional integration revisited: Exploring the conceptual elephant. *Journal of Business Logistics*, 36 (1), 18-24.
- Fugate, B. S., Flint, D. J., & Mentzer, J. T. (2008). The role of logistics in market orientation. *Journal of Business Logistics*, 29 (2), 1-26.
- Galbraith, J. R. (1973). *Designing complex organizations*. Reading, MA: Addison-Wesley.
- Galbraith, J. R. (1974). Organization design: An information processing view. *Interfaces*, 4 (3), 28-36.
- Galbraith, J. R. (1977). *Organization design*. Reading, MA: Addison Wesley.
- Gammelgaard, B., & Larson, P. D. (2001). Logistics skills and competencies for supply chain management. *Journal of Business Logistics*, 22 (2), 27-50.
- Garver, M. S., & Mentzer, J. T. (1999). Logistics research methods: Employing structural equation modeling to test for construct validity. *Journal of Business Logistics*, 20 (1), 33-57.
- Gattiker, T. F., & Goodhue, D. L. (2004). Understanding the local-level costs and benefits of ERP through organizational information processing theory. *Information & Management*, 41 (4), 431-443.
- George, G., Wiklund, J., & Zahra, S. A. (2005). Ownership and the internationalization of small firms. *Journal of Management*, 31 (2), 210-233.
- Gerbing, D. W., & Anderson, J. C. (1987). Improper solutions in the analysis of covariance structures: Their interpretability and a comparison of alternate respecifications. *Psychometrika*, 52 (1), 99-111.

- Germain, R., Claycomb, C., & Dröge, C. (2008). Supply chain variability, organizational structure, and performance: The moderating effect of demand unpredictability. *Journal of Operations Management*, 26 (5), 557-570.
- Germain, R., Dröge, C., & Christensen, W. (2001). The mediating role of operations knowledge in the relationship of context with performance. *Journal of Operations Management*, 19 (4), 453-469.
- Gimenez, C., & Ventura, E. (2005). Logistics-production, logistics-marketing and external integration: Their impact on performance. *International Journal of Operations & Production Management*, 25 (1), 20-38.
- Gligor, D. M. (2014). A cross-disciplinary examination of firm orientations' performance outcomes: The role of supply chain flexibility. *Journal of Business Logistics*, 35 (4), 281-298.
- Goldsby, T. J., Knemeyer, A. M., Miller, J. W., & Wallenburg, C. M. (2013). Measurement and moderation: Finding the boundary conditions in logistics and supply chain research. *Journal of Business Logistics*, 34 (2), 109-116.
- Gonzalez-Loureiro, M., Dabic, M., & Kiessling, T. (2015). Supply chain management as the key to a firm's strategy in the global marketplace. *International Journal of Physical Distribution & Logistics Management*, 45 (1/2), 159-181.
- Grawe, S. J., Chen, H., & Daugherty, P. J. (2009). The relationship between strategic orientation, service innovation, and performance. *International Journal of Physical Distribution & Logistics Management*, 39 (4), 282-300.
- Green, K. W., Whitten, D., & Inman, R. A. (2012). Aligning marketing strategies throughout the supply chain to enhance performance. *Industrial Marketing Management*, 41 (6), 1008-1018.
- Greenwood, R., & Hinings, C. R. (1996). Understanding radical organizational change: Bringing together the old and the new institutionalism. *Academy of Management Review*, 21 (4), 1022-1054.
- Griffin, A., & Hauser, J. R. (1996). Integrating R&D and marketing: A review and analysis of the literature. *Journal of Product Innovation Management*, 13 (3), 191-215.
- Gunasekaran, A., & Ngai, E. W. T. (2004). Information systems in supply chain integration and management. *European Journal of Operational Research*, 159 (2), 269-295.
- Gunasekaran, A., Patel, C., & McGaughey, R. E. (2004). A framework for supply chain performance measurement. *International Journal of Production Economics*, 87 (3), 333-347.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2010). *Multivariate data analysis* (7th ed.). Upper Saddle River, NJ: Prentice Hall.
- Han, J. H., Wang, Y., & Naim, M. (2017). Reconceptualization of information technology flexibility for supply chain management: An empirical study. *International Journal of Production Economics*, 187, 196-215.
- Harman, H. H. (1976). *Modern factor analysis*. Chicago, IL: The University of Chicago Press.
- Hayes, A. F., & Matthes, J. (2009). Computational procedures for probing interactions in OLS and logistic regression: SPSS and SAS implementations. *Behavioral Research Methods*, 41 (3), 924-936.

- Heide, J. B. (1994). Interorganizational governance in marketing channels. *The Journal of Marketing*, 58 (1), 71-85.
- Hickson, D. J., Hinings, C. R., Lee, C. A., Schneck, R. E., & Pennings, J. M. (1971). A strategic contingencies' theory of intraorganizational power. *Administrative Science Quarterly*, 16 (2), 216-229.
- Hinings, C. R., Hickson, D. J., Pennings, J. M., & Schneck, R. E. (1974). Structural conditions of intraorganizational power. *Administrative Science Quarterly*, 19 (1), 22-44.
- Hitt, M. A., Hoskisson, R. E., & Kim, H. (1997). International diversification: Effects on innovation and firm performance in product-diversified firms. *Academy of Management Journal*, 40 (4), 767-798.
- Hitt, M. A., Tihanyi, L., Miller, T., & Connelly, B. (2006). International diversification: Antecedents, outcomes, and moderators. *Journal of Management*, 32 (6), 831-867.
- Homburg, C., & Jensen, O. (2007). The thought worlds of marketing and sales: Which differences make a difference? *Journal of Marketing*, 71 (3), 124-142.
- Homburg, C., Vomberg, A., Enke, M., & Grimm, P. H. (2014). The loss of the marketing department's influence: Is it really happening? And why worry? *Journal of the Academy of Marketing Science*, 43 (1), 1-13.
- Homburg, C., Workman, J. P., & Krohmer, H. (1999). Marketing's influence within the firm. *Journal of Marketing*, 63 (2), 1-17.
- Hu, L.-T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6 (1), 1-55.
- Hult, G. T. M., Hurley, R. F., & Knight, G. A. (2004). Innovativeness: Its antecedents and impact on business performance. *Industrial Marketing Management*, 33 (5), 429-438.
- Hult, G. T. M., Ketchen, D. J., & Arrfelt, M. (2007a). Strategic supply chain management: Improving performance through a culture of competitiveness and knowledge development. *Strategic Management Journal*, 28 (10), 1035-1052.
- Hult, G. T. M., Ketchen, D. J., & Chabowski, B. R. (2007b). Leadership, the buying center, and supply chain performance: A study of linked users, buyers, and suppliers. *Industrial Marketing Management*, 36 (3), 393-403.
- Hult, G. T. M., Ketchen, D. J., & Slater, S. F. (2004). Information processing, knowledge development, and strategic supply chain performance. *Academy of Management Journal*, 47 (2), 241-253.
- Jacobs, M. A., & Swink, M. (2011). Product portfolio architectural complexity and operational performance: Incorporating the roles of learning and fixed assets. *Journal of Operations Management*, 29 (7-8), 677-691.
- Jacquart, P., & Antonakis, J. (2015). When does charisma matter for top-level leaders? Effect of attributional ambiguity. *Academy of Management Journal*, 58 (4), 1051-1074.
- Jansen, J. J. P., Vera, D., & Crossan, M. (2009). Strategic leadership for exploration and exploitation: The moderating role of environmental dynamism. *The Leadership Quarterly*, 20 (1), 5-18.

- Jarzabkowski, P., Kaplan, S., Seidl, D., & Whittington, R. (2015). On the risk of studying practices in isolation: Linking what, who, and how in strategy research. *Strategic Organization, 14* (3), 248-259.
- Jaworski, B., Kohli, A. K., & Sahay, A. (2000). Market-driven versus driving markets. *Journal of the Academy of Marketing Science, 28* (1), 45-54.
- Jaworski, B. J., & Kohli, A. K. (1993). Market orientation: Antecedents and consequences. *The Journal of Marketing, 57* (3), 53-70.
- Jehn, K. A., & Mannix, E. A. (2001). The dynamic nature of conflict: A longitudinal study of intragroup conflict and group performance. *Academy of Management Journal, 44* (2), 238-251.
- Joshi, M. P., Kathuria, R., & Porth, S. J. (2003). Alignment of strategic priorities and performance: An integration of operations and strategic management perspectives. *Journal of Operations Management, 21* (3), 353-369.
- Judge, T. A., & Piccolo, R. F. (2004). Transformational and transactional leadership: A meta-analytic test of their relative validity. *Journal of Applied Psychology, 89* (5), 755-768.
- Jüttner, U., & Christopher, M. (2013). The role of marketing in creating a supply chain orientation within the firm. *International Journal of Logistics Research and Applications, 16* (2), 99-113.
- Jüttner, U., Christopher, M., & Baker, S. (2007). Demand chain management-integrating marketing and supply chain management. *Industrial Marketing Management, 36* (3), 377-392.
- Jüttner, U., Christopher, M., & Godsell, J. (2010). A strategic framework for integrating marketing and supply chain strategies. *The International Journal of Logistics Management, 21* (1), 104-126.
- Kahn, K. B., & Mentzer, J. T. (1998). Marketing's integration with other departments. *Journal of Business Research, 42* (1), 53-62.
- Kannan, V. R., & Ghosh, S. (1996). A virtual cellular manufacturing approach to batch production. *Decision Sciences, 27* (3), 519-539.
- Kearns, G. S. (2006). The effect of top management support of SISP on strategic IS management: Insights from the US electric power industry. *Omega, 34* (3), 236-253.
- Keller, R. T. (2001). Cross-functional project groups in research and new product development: Diversity, communications, job stress, and outcomes. *Academy of Management Journal, 44* (3), 547-555.
- Keller, R. T. (2006). Transformational leadership, initiating structure, and substitutes for leadership: A longitudinal study of research and development project team performance. *Journal of Applied Psychology, 91* (1), 202-210.
- Kenny, G. K., & Wilson, D. C. (1984). The interdepartmental influence of managers: Individual and sub-unit perspectives. *Journal of Management Studies, 21* (4), 409-425.
- Ketchen, D. J., & Giunipero, L. C. (2004). The intersection of strategic management and supply chain management. *Industrial Marketing Management, 33* (1), 51-56.
- Ketokivi, M. A., & Schroeder, R. G. (2004). Perceptual measures of performance: Fact or fiction? *Journal of Operations Management, 22* (3), 247-264.

- Kohli, A. K., & Jaworski, B. J. (1990). Market orientation: The construct, research propositions, and managerial implications. *The Journal of Marketing*, 54 (2), 1-18.
- Kortmann, S., Gelhard, C., Zimmermann, C., & Piller, F. T. (2014). Linking strategic flexibility and operational efficiency: The mediating role of ambidextrous operational capabilities. *Journal of Operations Management*, 32 (7-8), 475-490.
- Kotlarsky, J., van den Hooff, B., & Houtman, L. (2015). Are we on the same page? Knowledge boundaries and transactive memory system development in cross-functional teams. *Communication Research*, 42 (3), 319-344.
- Koufteros, X. A., Cheng, T. E., & Lai, K.-H. (2007). "Black-box" and "gray-box" supplier integration in product development: Antecedents, consequences and the moderating role of firm size. *Journal of Operations Management*, 25 (4), 847-870.
- Koufteros, X. A., Rawski, G. E., & Rupak, R. (2010). Organizational integration for product development: The effects on glitches, on-time execution of engineering change orders, and market success. *Decision Sciences*, 41 (1), 49-80.
- Kozlenkova, I. V., Hult, G. T. M., Lund, D. J., Mena, J. A., & Kecec, P. (2015). The role of marketing channels in supply chain management. *Journal of Retailing*, 91 (4), 586-609.
- Krasnikov, A., & Jayachandran, S. (2008). The relative impact of marketing, research-and-development, and operations capabilities on firm performance. *Journal of Marketing*, 72 (4), 1-11.
- Krause, D. R. (1999). The antecedents of buying firms' efforts to improve suppliers. *Journal of Operations Management*, 17 (2), 205-224.
- Krohmer, H., Homburg, C., & Workman, J. P. (2002). Should marketing be cross-functional? Conceptual development and international empirical evidence. *Journal of Business Research*, 55 (6), 451-465.
- Lambert, D. M., & Enz, M. G. (2017). Issues in supply chain management: Progress and potential. *Industrial Marketing Management*, 62, 1-16.
- Lambert, D. M., & Harrington, T. C. (1990). Measuring nonresponse bias in customer service mail surveys. *Journal of Business Logistics*, 11 (2), 5-25.
- Lampel, J., & Giachetti, C. (2013). International diversification of manufacturing operations: Performance implications and moderating forces. *Journal of Operations Management*, 31 (4), 213-227.
- Larson, P., & Halldorsson, A. (2004). Logistics versus supply chain management: An international survey. *International Journal of Logistics Research and Applications*, 7 (1), 17-31.
- Lawrence, P. R., & Lorsch, J. W. (1969). *Organization and environment: Managing differentiation and integration*. Homewood, IL: Richard D. Irwin
- Lee, H. L. (2002). Aligning supply chain strategies with product uncertainties. *California Management Review*, 44 (3), 105-119.
- Leuschner, R., Rogers, D. S., & Charvet, F. F. (2013). A meta-analysis of supply chain integration and firm performance. *Journal of Supply Chain Management*, 49 (2), 34-57.
- Li, S., Ragu-Nathan, B., Ragu-Nathan, T. S., & Subba Rao, S. (2006). The impact of supply chain management practices on competitive advantage and organizational performance. *Omega*, 34 (2), 107-124.

- Lorge, S. (1999). Marketers are from mars, salespeople are from venus. *Sales and Marketing Management*, 151 (4), 26-33.
- Lu, J. W., & Beamish, P. W. (2004). International diversification and firm performance: The s-curve hypothesis. *Academy of Management Journal*, 47 (4), 598-609.
- Lusch, R. F., Vargo, S. L., & Tanniru, M. (2010). Service, value networks and learning. *Journal of the Academy of Marketing Science*, 38 (1), 19-31.
- MacKenzie, S. B., Podsakoff, P. M., & Rich, G. A. (2001). Transformational and transactional leadership and salesperson performance. *Journal of the Academy of Marketing Science*, 29 (2), 115-134.
- Marsh, H. W., Wen, Z., & Hau, K.-T. (2004). Structural equation models of latent interactions: Evaluation of alternative estimation strategies and indicator construction. *Psychological Methods*, 9 (3), 275-300.
- Martin, G., Gözübüyük, R., & Becerra, M. (2015). Interlocks and firm performance: The role of uncertainty in the directorate interlock-performance relationship. *Strategic Management Journal*, 36 (2), 235-253.
- Mentzer, J. T., DeWitt, W., Keebler, J. S., Min, S., Nix, N. W., Smith, C. D., & Zacharia, Z. G. (2001). Defining supply chain management. *Journal of Business Logistics*, 22 (2), 1-25.
- Mentzer, J. T., Stank, T. P., & Esper, T. L. (2008). Supply chain management and its relationship to logistics, marketing, and operations management. *Journal of Business Logistics*, 29 (1), 31-46.
- Miller, J. W., Stromeyer, W. R., & Schwieterman, M. A. (2013). Extensions of the Johnson-Neyman technique to linear models with curvilinear effects: Derivations and analytical tools. *Multivariate Behavioral Research*, 48 (2), 267-300.
- Milliken, F. J., & Martins, L. L. (1996). Searching for common threads: Understanding the multiple effects of diversity in organizational groups. *Academy of Management Review*, 21 (2), 402-433.
- Min, S., & Mentzer, J. T. (2004). Developing and measuring supply chain concepts. *Journal of Business Logistics*, 25 (1), 63-99.
- Mintzberg, H., Raisinghani, D., & Theoret, A. (1976). The structure of "unstructured" decision processes. *Administrative Science Quarterly*, 21 (2), 246-275.
- Monczka, R. M., Trent, R. J., & Callahan, T. J. (1993). Supply base strategies to maximize supplier performance. *International Journal of Physical Distribution & Logistics Management*, 23 (4), 42-54.
- Morash, E. A., & Clinton, S. R. (1998). Supply chain integration: Customer value through collaborative closeness versus operational excellence. *Journal of Marketing Theory and Practice*, 6 (4), 104-120.
- Morhart, F. M., Herzog, W., & Tomczak, T. (2009). Brand-specific leadership: Turning employees into brand champions. *Journal of Marketing*, 73 (5), 122-142.
- Moser, R., Kuklinski, C. P. J.-W., & Srivastava, M. (2017). Information processing fit in the context of emerging markets: An analysis of foreign SBUs in China. *Journal of Business Research*, 70, 234-247.

- Narasimhan, R., & Kim, S. W. (2002). Effect of supply chain integration on the relationship between diversification and performance: Evidence from Japanese and Korean firms. *Journal of Operations Management*, 20 (3), 303-323.
- Narasimhan, R., Kim, S. W., & Tan, K. C. (2008). An empirical investigation of supply chain strategy typologies and relationships to performance. *International Journal of Production Research*, 46 (18), 5231-5259.
- Narayanan, S., Jayaraman, V., Luo, Y., & Swaminathan, J. M. (2011). The antecedents of process integration in business process outsourcing and its effect on firm performance. *Journal of Operations Management*, 29 (1), 3-16.
- Narver, J. C., & Slater, S. F. (1990). The effect of a market orientation on business profitability. *The Journal of Marketing*, 54 (4), 20-35.
- Niranjan, T. T., Rao, S., Sengupta, S., & Wagner, S. M. (2014). Existence and extent of operations and supply management departmental thought worlds: An empirical study. *Journal of Supply Chain Management*, 50 (4), 76-95.
- Oswald, M., Brettel, M., & Engelen, A. (2012). How departments' decision-making influence and interdepartmental dynamics relate to two facets of strategic market orientation. *Journal of Strategic Marketing*, 20 (6), 483-507.
- Pagell, M. (2004). Understanding the factors that enable and inhibit the integration of operations, purchasing and logistics. *Journal of Operations Management*, 22 (5), 459-487.
- Patel, P. C., Azadegan, A., & Ellram, L. M. (2013). The effects of strategic and structural supply chain orientation on operational and customer-focused performance. *Decision Sciences*, 44 (4), 713-753.
- Patschke, N. P., & Wallenburg, C. M. (2017). Influence differences between the supply chain management and the marketing function: Impact on supply chain performance. *Unpublished manuscript*.
- Patschke, N. P., Wallenburg, C. M., & Hoberg, K. (2017a). The influence of the supply chain management and logistics function within firms: Insights from resource dependency and strategic contingency perspectives. *Unpublished manuscript*.
- Patschke, N. P., Wallenburg, C. M., & Hoberg, K. (2017b). Linking the supply chain function's influence to new market performance: An information processing perspective. *Unpublished manuscript*.
- Pawar, B. S., & Eastman, K. K. (1997). The nature and implications of contextual influences on transformational leadership: A conceptual examination. *Academy of Management Review*, 22 (1), 80-109.
- Perez-Franco, R., Phadnis, S., Caplice, C., & Sheffi, Y. (2016). Rethinking supply chain strategy as a conceptual system. *International Journal of Production Economics*, 182, 384-396.
- Perrow, C. (1970). Departmental power and perspectives in industrial firms. In M. Zald (Ed.), *Power in organizations* (Vol. 7, pp. 59-89). Nashville, TN: Vanderbilt Press.
- Pfeffer, J. (1981). *Power in organizations* (Vol. 33). Marshfield, MA: Pitman Publishing.
- Pfeffer, J., & Salancik, G. R. (1978). *The external control of organizations: A resource dependency perspective*. New York, NY: Harper & Row.

- Phillips, L. W. (1981). Assessing measurement error in key informant reports: A methodological note on organizational analysis in marketing. *Journal of Marketing Research*, 18 (November), 395-415.
- Phillips, L. W., & Bagozzi, R. P. (1986). On measuring organizational properties of distribution channels: Methodological issues in the use of key informants. *Research in Marketing*, 8 (1), 313-369.
- Pierce, J. R., & Aguinis, H. (2013). The too-much-of-a-good-thing effect in management. *Journal of Management*, 39 (2), 313-338.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *The Journal of Applied Psychology*, 88 (5), 879-903.
- Qrunfleh, S., & Tarafdar, M. (2014). Supply chain information systems strategy: Impacts on supply chain performance and firm performance. *International Journal of Production Economics*, 147, 340-350.
- Rainbird, M. (2004). Demand and supply chains: The value catalyst. *International Journal of Physical Distribution & Logistics Management*, 34 (3/4), 230-250.
- Ralston, P. M., Blackhurst, J., Cantor, D. E., & Crum, M. R. (2015). A structure-conduct-performance perspective of how strategic supply chain integration affects firm performance. *Journal of Supply Chain Management*, 51 (2), 47-64.
- Rexhausen, D., Pibernik, R., & Kaiser, G. (2012). Customer-facing supply chain practices—the impact of demand and distribution management on supply chain success. *Journal of Operations Management*, 30 (4), 269-281.
- Rindfleisch, A., & Moorman, C. (2003). Interfirm cooperation and customer orientation. *Journal of Marketing Research*, 40 (4), 421-436.
- Roh, J., Krause, R., & Swink, M. (2016). The appointment of chief supply chain officers to top management teams: A contingency model of firm-level antecedents and consequences. *Journal of Operations Management*, 44, 48-61.
- Rosenzweig, E., & Roth, A. (2007). B2B seller competence: Construct development and measurement using a supply chain strategy lens. *Journal of Operations Management*, 25 (6), 1311-1331.
- Salancik, G. R., & Pfeffer, J. (1974). The bases and use of power in organizational decision making: The case of a university. *Administrative Science Quarterly*, 19 (4), 453-473.
- Sandberg, E., & Abrahamsson, M. (2010). The role of top management in supply chain management practices. *International Journal of Retail & Distribution Management*, 38 (1), 57-69.
- Schoenherr, T., & Swink, M. (2012). Revisiting the arcs of integration: Cross-validations and extensions. *Journal of Operations Management*, 30 (1-2), 99-115.
- Shi, Y., & Gregory, M. (1998). International manufacturing networks—to develop global competitive capabilities. *Journal of Operations Management*, 16 (2-3), 195-214.
- Siemens, E., Roth, A., & Oliveira, P. (2010). Common method bias in regression models with linear, quadratic, and interaction effects. *Organizational Research Methods*, 13 (3), 456-476.

- Simangunsong, E., Hendry, L. C., & Stevenson, M. (2012). Supply-chain uncertainty: A review and theoretical foundation for future research. *International Journal of Production Research*, 50 (16), 4493-4523.
- Singh, A., & Hess, T. (2017). How chief digital officers promote the digital transformation of their companies. *MIS Quarterly Executive*, 16 (1), 1-17.
- Singh, P. J., Power, D., & Chuong, S. C. (2011). A resource dependence theory perspective of ISO 9000 in managing organizational environment. *Journal of Operations Management*, 29 (1), 49-64.
- Sinkovics, R. R., & Roath, A. S. (2004). Strategic orientation, capabilities, and performance in manufacturer - 3PL relationships. *Journal of Business Logistics*, 25 (2), 43-64.
- Sirmon, D. G., Hitt, M. A., & Ireland, R. D. (2007). Managing firm resources in dynamic environments to create value: Looking inside the black box. *Academy of Management Review*, 32 (1), 273-292.
- Slone, R. E., Mentzer, J. T., & Dittmann, J. P. (2007). Are you the weakest link in your company's supply chain? *Harvard Business Review*, 85 (9), 116-127.
- Sörbom, D., & Jöresskog, K. G. (1982). A second generation of multivariate analysis. In C. Fornell (Ed.), *Measurement and evaluation* (Vol. 2, pp. 381-399). New York, NY: Praeger Publishers.
- Springinkle, M., & Wallenburg, C. M. (2012). Improving distribution service performance through effective production and logistics integration. *Journal of Business Logistics*, 33 (4), 309-323.
- Stank, T. P., Davis, B. R., & Fugate, B. S. (2005). A strategic framework for supply chain oriented logistics. *Journal of Business Logistics*, 26 (2), 27-46.
- Stock, J. R., Boyer, S. L., & Harmon, T. (2010). Research opportunities in supply chain management. *Journal of the Academy of Marketing Science*, 38 (1), 32-41.
- Stogdill, R. H. (1963). *Manual for the leader behavior description questionnaire-form XII: An experimental revision*. Columbus, OH: The Ohio State University, Bureau of Business Research.
- Stogdill, R. M., & Coons, A. E. (1957). *Leader behavior: Its description and measurement*. Columbus, OH: The Ohio State University, Bureau of Business Research.
- Sun, S.-Y., Hsu, M. H., & Hwang, W. J. (2009). The impact of alignment between supply chain strategy and environmental uncertainty on SCM performance. *Supply Chain Management: An International Journal*, 14 (3), 201-212.
- Swanson, L. (2003). An information-processing model of maintenance management. *International Journal of Production Economics*, 83 (1), 45-64.
- Sweeney, E. (2013). The people dimension in logistics and supply chain management - its role and importance. In R. Passaro & A. Thomas (Eds.), *Supply chain management: Perspectives, issues and cases* (pp. 73-82). Milan: McGraw-Hill.
- Swink, M., Narasimhan, R., & Wang, C. (2007). Managing beyond the factory walls: Effects of four types of strategic integration on manufacturing plant performance. *Journal of Operations Management*, 25 (1), 148-164.
- Swink, M., & Schoenherr, T. (2015). The effects of cross-functional integration on profitability, process efficiency, and asset productivity. *Journal of Business Logistics*, 36 (1), 69-87.

- Swink, M., Whipple, J., & Turkulainen, V. (2014). Designing the "right" supply chain management organizational structure. *Council of Supply Chain Management Professionals Research Series Monograph*, 1-31.
- Tang, C. S. (2006). Perspectives in supply chain risk management. *International Journal of Production Economics*, 103 (2), 451-488.
- Thong, J. Y., Yap, C.-S., & Raman, K. (1996). Top management support, external expertise and information systems implementation in small businesses. *Information Systems Research*, 7 (2), 248-267.
- Thornton, L. M., Esper, T. L., & Autry, C. W. (2016). Leader or lobbyist? How organizational politics and top supply chain manager political skill impacts supply chain orientation and internal integration. *Journal of Supply Chain Management*, 52 (4), 42-62.
- Touboulic, A., Chicksand, D., & Walker, H. (2014). Managing imbalanced supply chain relationships for sustainability: A power perspective. *Decision Sciences*, 45 (4), 577-619.
- Troy, L. C., Hirunyawipada, T., & Paswan, A. K. (2008). Cross-functional integration and new product success: An empirical investigation of the findings. *Journal of Marketing*, 72 (6), 132-146.
- Tushman, M. L., & Nadler, D. A. (1978). Information processing as an integrating concept in organizational design. *Academy of Management Review*, 3 (3), 613-624.
- Ulrich, D., & Barney, J. B. (1984). Perspectives in organizations: Resource dependence, efficiency, and population. *Academy of Management Review*, 9 (3), 471-481.
- van der Vaart, T., & van Donk, D. P. (2008). A critical review of survey-based research in supply chain integration. *International Journal of Production Economics*, 111 (1), 42-55.
- Vera, D., & Crossan, M. (2004). Strategic leadership and organizational learning. *Academy of Management Review*, 29 (2), 222-240.
- Verhoef, P. C., & Leeflang, P. S. H. (2009). Understanding the marketing department's influence within the firm. *Journal of Marketing*, 73 (2), 14-37.
- Villena, V. H., Gomez-Mejia, L. R., & Revilla, E. (2009). The decision of the supply chain executive to support or impede supply chain integration: A multidisciplinary behavioral agency perspective. *Decision Sciences*, 40 (4), 635-665.
- Wagner, S. M., & Hoegl, M. (2006). Involving suppliers in product development: Insights from R&D directors and project managers. *Industrial Marketing Management*, 35 (8), 936-943.
- Wagner, S. M., & Kemmerling, R. (2010). Handling nonresponse in logistics research. *Journal of Business Logistics*, 31 (2), 357-381.
- Wagner, S. M., & Kemmerling, R. (2014). Supply chain management executives in corporate upper echelons. *Journal of Purchasing and Supply Management*, 20 (3), 156-166.
- Waldman, D. A., Bass, B. M., & Yammarino, F. J. (1990). Adding to contingent-reward behavior the augmenting effect of charismatic leadership. *Group & Organization Management*, 15 (4), 381-394.

- Waldman, D. A., Ramirez, G. G., House, R. J., & Puranam, P. (2001). Does leadership matter? CEO leadership attributes and profitability under conditions of perceived environmental uncertainty. *Academy of Management Journal*, 44 (1), 134-143.
- Wang, Q., Zhao, X., & Voss, C. (2016). Customer orientation and innovation: A comparative study of manufacturing and service firms. *International Journal of Production Economics*, 171, 221-230.
- Wichmann, B. K., Carter, C. R., Kaufmann, L., & Wilson, J. R. (2016). Making environmental SCM initiatives work—moving beyond the dyad to gain affective commitment. *Journal of Supply Chain Management*, 52 (1), 21-40.
- Williams, B. D., Roh, J., Tokar, T., & Swink, M. (2013). Leveraging supply chain visibility for responsiveness: The moderating role of internal integration. *Journal of Operations Management*, 31 (7), 543-554.
- Winkler, J., Kuklinski, C. P. J.-W., & Moser, R. (2015). Decision making in emerging markets: The delphi approach's contribution to coping with uncertainty and equivocality. *Journal of Business Research*, 68 (5), 1118-1126.
- Wong, C. W., Lai, K.-h., Cheng, T., & Lun, Y. V. (2015). The role of IT-enabled collaborative decision making in inter-organizational information integration to improve customer service performance. *International Journal of Production Economics*, 159, 56-65.
- Wong, C. Y., Boon-itt, S., & Wong, C. W. Y. (2011). The contingency effects of environmental uncertainty on the relationship between supply chain integration and operational performance. *Journal of Operations Management*, 29 (6), 604-615.
- Wu, Y., Wen, Z., Marsh, H. W., & Hau, K.-T. (2013). A comparison of strategies for forming product indicators for unequal numbers of items in structural equation models of latent interactions. *Structural Equation Modeling: A Multidisciplinary Journal*, 20 (4), 551-567.
- Wynstra, F., Von Corswant, F., & Wetzels, M. (2010). In chains? An empirical study of antecedents of supplier product development activity in the automotive industry. *Journal of Product Innovation Management*, 27 (5), 625-639.
- Yukl, G. A. (2013). *Leadership in organizations* (8 ed.). Harlow, Essex: Pearson.
- Zacharia, Z. G., & Mentzer, J. T. (2004). Logistics salience in a changing environment. *Journal of Business Logistics*, 25 (1), 187-210.
- Zacharia, Z. G., & Mentzer, J. T. (2007). The role of logistics in new product development. *Journal of Business Logistics*, 28 (1), 83-110.
- Zacharia, Z. G., Sanders, N. R., & Fugate, B. S. (2014). Evolving functional perspectives within supply chain management. *Journal of Supply Chain Management*, 50 (1), 73-88.

Affirmation – statutory declaration

Last Name: Patschke

First Name: Niels

Affirmation – Statutory Declaration
According to § 10 part 1 no. 6 of the Doctoral Program Regulations
(dated 5th March 2008 as amended on the 8th March 2012)

I hereby declare, that the

Dissertation

submitted to Wissenschaftliche Hochschule für Unternehmensführung (WHU) -Otto-Beisheim-Hochschule- was produced independently and without the aid of sources other than those which have been indicated. All ideas and thoughts coming both directly and indirectly from outside sources have been noted as such.

This work has previously not been presented in any similar form to any other board of examiners.

Sentences or text phrases, taken out of other sources either literally or as regards contents, have been marked accordingly. Without notion of its origin, including sources which are available via internet, those phrases or sentences are to be considered as plagiarisms. It is the WHU's right to check submitted dissertations with the aid of software that is able to identify plagiarisms in order to make sure that those dissertations have been rightfully composed. I agree to that kind of checking, and I will upload an electronic version of my dissertation on the according website to enable the automatic identification of plagiarisms.

The following persons helped me gratuitous / non-gratuitous in the indicated way in selecting and evaluating the used materials:

Last Name	First Name	Kind of Support	gratuitous / non-gratuitous
Wallenburg, Prof. Dr.	Carl Marcus	Co-author of Paper A, B, and C	gratuitous
Hoberg, Prof. Dr.	Kai	Co-author of Paper A and B	gratuitous

Further persons have not been involved in the preparation of the presented dissertation as regards contents or in substance. In particular, I have not drawn on the non-gratuitous help of placement or advisory services (doctoral counsels / PhD advisors or other persons). Nobody has received direct or indirect monetary benefits for services that are in connection with the contents of the presented dissertation.

The dissertation does not contain texts or (parts of) chapters that are subject of current or completed dissertation projects.

Place and date of issue _____ Signature _____