“Salesforce incentive systems – an interdisciplinary review and research agenda”

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SECTION 2. Management in firms and organizations

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Salesforce incentive systems – an interdisciplinary review and research agenda

Abstract

Company salesforce compensation plays an essential role in management control systems. Although salesforce incentive systems (SIS) have been discussed in the literature for decades, many unanswered questions remain. In particular, the interdisciplinary character of this topic exacerbates the integration of existing knowledge. To provide a comprehensive overview of the existing literature on SIS, this review considers research published in major journals in the fields of accounting, management, organizational science, marketing, human resources, and psychology. In developing a theoretical framework, the authors categorize existing knowledge into three main areas, i.e., the determinants, design, and behavioral effects of SIS. The authors identify environmental uncertainty and customer structure as the most influential company-external determinants, and information asymmetry and individual risk preferences as the most influential internal determinants of SIS. Many controversies remain regarding the design of SIS in terms of the applied performance measures, types of incentives, and the structure of compensation. Various negative behavioral effects aggregated from the literature, like free riding, collusion, and sabotage underline the high relevance of design choices for SIS in companies.

Keywords: salesforce compensation, salesforce incentive system, performance measurement, performance evaluation, management control.
JEL Classification: M41, M12.

Introduction

This paper provides a systematic review of the literature on salesforce incentive systems (SIS). A particular emphasis is placed on evaluation and compensation mechanisms for salespeople and their behavioral effects.

Working conditions of salespeople considerably differ from those of other employees and managers. Salespeople working rather independently in their field (Gentry et al., 1991), face hard foreseeable obstacles, and must continuously adapt to changing customers, environments, and products (Bouwens and Abernethy, 2000; Lee, 2011). In the past, salespeople were confronted with several structural shifts that substantially changed their compensation systems. The enhanced importance of an individualized customer relationship as well as the use of new technologies and an extension of the selling environment must be considered by SIS (Christ and Anderson, 2011).

Differing working conditions and structures require specific mechanisms of management control in the selling sector. Incentive-based compensation is therefore intensively applied in companies, particularly for members of the salesforce. Joseph and Kalwani (1998) find that 95% of companies use incentive systems for their salespeople. According to Zoltners et al. (2008), the average company spends approximately 10% of its total revenues to motivate and direct the behavior of salespeople. In some industries this figure is as high as 40%.

The growing number of salespeople and the increasing financial impact of these employees require careful analysis. A considerable threat for companies is that compensation systems may have unintended effects and lead to opportunistic behavior by the salesforce (Zoltners et al., 2012). Compared with the high relevance of salesforce compensation, analysis of salesforce-specific components and structures is underrepresented in the literature (Zoltners et al., 2008). Further, the interdisciplinary character of this topic and the corresponding variety of relevant articles in such areas of research as accounting, organizational science, and human resources exacerbate the integration of existing knowledge on SIS. As a consequence, a plurality of empirical approaches and theoretical models has evolved in this area without their aggregation into a comprehensive state of the art. Therefore, many unanswered questions and controversies remain concerning the design and effects of compensation systems for salespeople.

Taking into account the importance of SIS, the aim of this paper is to present an integrative literature review to reveal the specific aspects of compensation systems for salespeople and to make the existing knowledge on SIS more useful, particularly for management research and practice. By reviewing the extant literature on SIS from different disciplines, we identify and analyze trends in the literature. In this context, the main objective of this paper is the aggregation and categorization of the scientific knowledge regarding SIS in an organizational context. Therefore, we develop a theoretical framework that provides a detailed overview of this field, which helps researchers and practitioners analyze and categorize additional issues related to this topic. Applying a contingency theory-based approach, we categorize existing knowledge into

three main areas of SIS: (1) determinants, (2) design, and (3) behavioral effects. In these areas, a particular emphasis is placed on shortcomings and controversies identified in the literature.

This paper proceeds as follows. In Section 1, the methodological approach of our review is described. In Section 2, we review company-external as well as company-internal determinants that influence the design and usage of SIS. We review the scientific findings regarding the design of SIS in Section 3. This section is followed by an analysis of the effects of certain alternative SIS designs (Section 4). Section 5 examines interdependences between the three main categories. We conclude our review with a discussion of our results with regard to gaps, controversies, and opportunities for future research.

1. Methodology

To provide a comprehensive overview of SIS literature, this review considers researches published in major, peer-reviewed journals in the fields of accounting, management/administration, organizational science, marketing, human resources, and psychology, including both US and international researches. First, we systematically searched for English keywords related to evaluation and compensation of salespeople in companies, and the behavioral effects of incentive systems and their determinants, in the scientific databases and search engines EBSCO, Emeraldinsight, Scopus, ScienceDirect and Web of Knowledge. Second, two authors independently reviewed all titles, abstracts, and introductions to assess the relevance of each article to the topic at hand, i.e., the primary subject of the article must focus on determinants, design, and/or behavioral effects of SIS. Only articles published in journals ranked in the ABS Academic Journal Quality Guide were considered. Applying this approach, we identified 222 articles in total that address the topic of SIS, over the period of 1960 to 2012. Our review considers articles that apply an analytical, empirical, or experimental approach to address issues of triangulation in terms of various methodological approaches (Scandura and Williams, 2000). Further, we differentiate between archival and field research.

To structure our analysis, we apply a contingency theory-based approach. Contingency theory is widely applied to research in the area of management control systems, examining evaluation and incentive structures and relating them to an organizational context (Chenhall, 2003; Otley, 1980). First, contingency theory explains the influence of different contingency factors on organizational design. Second, the outcome of organizational design choices and their match with environmental factors are analyzed (Donaldson, 2001). Within the accounting context, many studies examine the relation between environmental factors, accounting information systems and/or management control systems, and behavioral effects on individuals (e.g., Chenhall and Langfield-Smith, 2003; Sim and Killough, 1998; Sprinkle, 2000). We follow this approach to structure our literature review by first discussing the relevant contingency factors of SIS identified in the literature. Second, we review the literature regarding relevant design choices when implementing SIS, for example, with regard to applied performance measures, types of incentives, or the structure of compensation. Third, we combine both fields of research by reviewing and discussing behavioral effects of SIS with regard to the design choices and contingency factors identified before. A particular emphasis is placed on effort intensity/allocation, employee selection, and potential negative effects, for example, free riding, collusion, and sabotage. The general structure of our review is based on the integrated framework proposed in Figure 1.

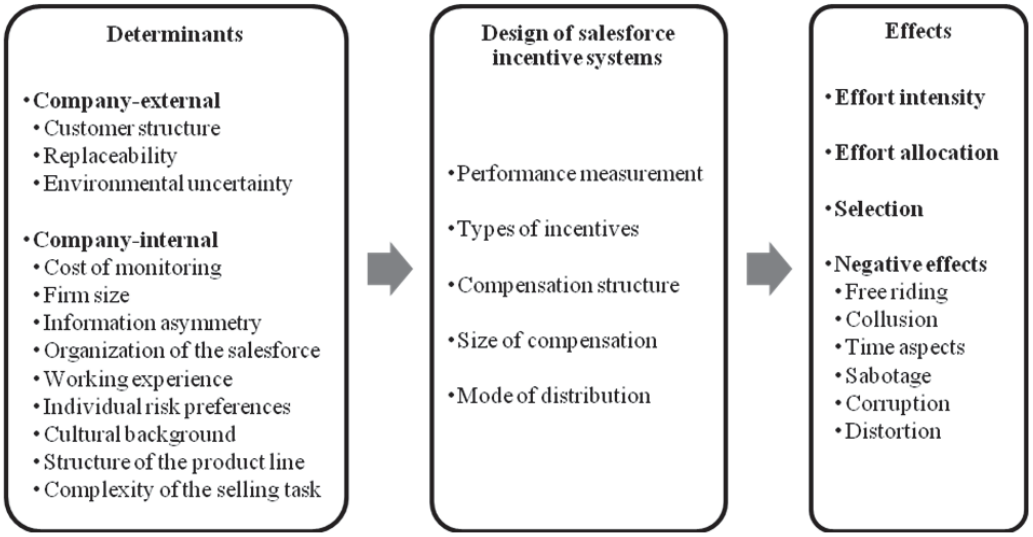

Fig. 1. Integrative framework of SIS literature

2. Determinants of SIS

2.1. Company-external determinants. *2.1.1. Customer structure*. Sales territories differ considerably according to their customer structure, which in turn influences the design and effects of SIS (Ryans and Weinberg, 1987). Caldieraro and Coughlan (2009), for example, conclude that application of a tournament-based incentive system yields positive behavioral effects when territories are positively correlated and/or when there is approximately the same selling potential. Under other conditions, a commission-based compensation scheme is preferable instead. For a setting with differing customer structures and potential, these authors recommend a group component. Raju and Srinivasan (1996) experimentally investigate application of quota-based compensation in a setting with heterogeneous territories. These authors find that it is advantageous for a company to implement quotas because it simplifies the exchange of salespeople between territories, as only the quota needs to be adapted to a territory's characteristics.

2.1.2. Environmental uncertainty. Basu et al. (1985), Lal et al. (1994), and Eisenhardt (1985, 1988) provide theoretical and empirical results showing that, in cases with greater uncertainty about a company's environment, the salary-to-total-compensation ratio should increase to keep salespeople motivated. However, this relationship is criticized in the literature. Umanath et al. (1993), conducting an experimental study, test the theoretical results of Basu et al. (1985) and reject them. Furthermore, Prendergast (2002) concludes that a higher degree of uncertainty generally leads to an increase in the variable-pay-to-total-compensation ratio.

Mantrala et al. (1997) show, based on their theoretical model, that a renegotiation of quotas may generate positive learning effects for the salesforce regarding appropriate behavior in an uncertain environment. Following Nalebuff and Stiglitz (1983) competitive schemes such as tournaments are an appropriate way to incentivize salespeople in uncertain environments and to exclude uncertainties from performance measurement.

2.1.3. Replaceability. Anderson and Oliver (1987) and John and Weitz (1989) generate evidence that when salespeople are easy to replace, an output indicator combined with a higher variable component leads to optimal results. Following Rouziès et al. (2009), employees are difficult to replace when they either have specialized knowledge or when the labor market does not provide sufficient alternatives. These authors generate evidence that companies pay higher compensation when a salesperson's employment is very know-how intensive. Basu et al. (1985) and Lal and Srinivasan (1993) draw the conclusion that the salary-to-total-compensation ratio increases with a higher number of job opportunities for employees, to retain high performers.

2.2. Company-internal determinants. *2.2.1. Cost of monitoring*. Krafft et al. (2004) show empirical evidence that the more difficult it is to evaluate a salesforce's performance, the less likely it is for a company to outsource the salesforce. Difficulties in performance quantification result in stronger application of subjective performance indicators that are used primarily to evaluate internal salespeople. Lazear (1986) shows that when the efforts required to measure output are high, a higher proportion of fixed salary is preferred to compensate salespeople. John and Weitz (1989) agree that the salary-to-total-compensation ratio increases if it becomes more costly to monitor output. Conversely, if monitoring input becomes more expensive, the salary-to-total-compensation ratio decreases.

2.2.2. Firm size. Larger firms, in general, pay higher total compensation than small firms (Milkovich et al., 2011). John and Weitz (1989) provide empirical evidence for decreasing use of incentive-based compensation as company size grows. For Frenzen et al. (2010), the size of a firm determines the level of delegation of pricing authority to salespeople as it becomes more complex for top management to fix prices and conditions. Oliver and Anderson (1994) state that the larger the size of the salesforce, the more likely the company will utilize an output-oriented performance evaluation because output control in large firms requires relatively less effort than in small firms.

2.2.3. Information asymmetry. Firm size and environmental uncertainty increase information asymmetry. Mishra and Prasad (2004), theoretically, and Frenzen et al. (2010), empirically, find that a high level of information asymmetry constitutes a reason to delegate pricing authority to salespeople. Chu and Sappington (2009) investigate based on agency theory the case where information asymmetry develops over time as employees obtain more experience with customers, products, and the environment. These authors recommend incremental rewards for exceptional performance. Lewis and Sappington (1997) demonstrate, in theoretical work, that a set of contracts and multiple performance measures can contribute to reducing this problem.

2.2.4. Working experience. Within the stream of literature examining the relationship between working experience and SIS design several controversies remain. Coughlan and Narashimhan (1992) generate evidence that fixed salary and total compensation are positively correlated with seniority. Kirchner et al. (1960) find that sales staff effectiveness peaks at age 40 and declines thereafter.

Lazear (1981), based on his theoretical model, comes to the conclusion that "wages grow with experience even if productivity does not." Kotlikoff and Gokhale (1992) provide contrary evidence.

Another controversy pertains to the variable components. Coughlan and Narashimhan (1992) generate empirical evidence that the proportion of variable compensation decreases with job tenure. These authors explain this result through lower information asymmetry between principal and agent. This explanation runs contrary to the theoretical investigations of Chu and Sappington (2009), who see experience as a reason for superior knowledge and increased information asymmetry. Tremblay et al. (2003) report findings that the variable component increases with extensive working experience. Because of their higher value, experienced salespeople are retained by a company, giving them the chance to participate in the company's success. Mayo and Mallin (2010) find that more job experience leads to a greater need for security as a result. These authors recommend a variable component linked with reassurance. Demographic developments indicate growing relevance for this stream of the literature.

2.2.5. Individual risk preferences. Following Joseph and Thevaranjan (1998), a more risk-tolerant sales employee should be compensated on the basis of a high variable proportion because this may foster entrepreneurial behavior. On the other hand, highly risk-averse salespeople will demand higher risk premiums if they must bear risks due to variable payments. Thus, it costs less to compensate highly risk-averse salespeople primarily based on a fixed payment (Lal and Staelin, 1986). Joseph and Thevaranjan (1998), based on agency theory, draw the conclusion that a salary with input monitoring is favorable for risk-averse salespeople. Incentive pay with output monitoring, on the other hand, is favorable for risk-tolerant salespeople. Nalebuff and Stiglitz (1983) conclude, based on their analytical model, that competition can help to increase the work efforts of highly risk-averse salespeople, because they are incentivized to take more risks. Caldieraro and Coughlan (2009) show that in a setting with heterogeneous territories and risk-averse agents, a reasonable approach is to incentivize employees based on the group's success in diversifying risk. This approach may lead to reduced risk premiums. Moreover, Holmstrom and Milgrom (1990) recognize a coinsurance effect of risk sharing among agents. Gaba and Kalra (1999) obtain experimental evidence that the level of risk aversion is not entirely determined ex ante. Instead, the salesperson chooses in the respective context when the salesperson knows about the incentives provided. Therefore, the level of risk aversion does not determine the incentive systems, but rather, the incentive system determines the level of risk aversion to some extent.

2.2.6. Cultural background. Rouziès et al. (2009) find that firms offer higher compensation when costs of living are higher. Moreover, Money and Graham (1999) show that in the US, monetary incentives create stronger behavioral effects than in Japan. In addition, Cable and Judge (1994) report different cultural preferences regarding SIS, such as preferences for group-based versus individualistic schemes.

2.2.7. Complexity of selling task. Godes (2003) finds that the more complex a selling task, the more important it is that the sales employee with the highest skills sells the best product. Basu et al. (1985) provide theoretical results that the variable-pay-to-total-compensation ratio decreases in more complex settings. Coughlan and Sen (1989) argue that when performing easy tasks, the variable component should represent a larger proportion of total compensation. This relationship is empirically proved by Coughlan and Narashimhan (1992), and Rouziès et al. (2009). The main argument for this relationship is that in easy tasks, additional effort is more productive than in complex settings, therefore leading to higher sales.

Table 1 provides an overview of the existing literature on determinants of SIS.

Table 1. Studies on the determinants of SIS

Author(s)	Year of publication	Methodology	Determinants of salesforce incentive systems											
			Company-external			Company-internal								
			Customer structure	Environmental uncertainty	Replaceability	Cost of monitoring	Firm size	Information asymmetry	Organization of salesforce	Working experience	Individual risk preference	Cultural background	Structure of the product line	Complexity of selling task
Kirchner, Wayne/McElwain, Carolyn/Dunnette, Marvin	1960	empirical – field study								•				
Weinberg, Charles B.	1975	theoretical									•			

Table 1 (cont.). Studies on the determinants of SIS

Author(s)	Year of publication	Methodology	Determinants of salesforce incentive systems											
			Company-external			Company-internal								
			Customer structure	Environmental uncertainty	Replaceability	Cost of monitoring	Firm size	Information asymmetry	Organization of salesforce	Working experience	Individual risk preference	Cultural background	Structure of the product line	Complexity of selling task
Stephenson, Ronald/Cron, William/Frazier, Gary	1979	empirical – survey							•					
Lazear, Edward P.	1981	theoretical								•				
Nalebuff, Baryy/Stiglitz, Joseph	1983	theoretical		•										
Anderson, Erin	1985	empirical – field study				•								
Eisenhardt, Kathleen M.	1985	empirical – field study		•		•								
Lal, Rajiv	1986	theoretical						•	•					
Lal, Rajiv/Staelin, Richard	1986	theoretical									•			
Lazear, Edward P.	1986	theoretical				•								
Ryans, Adrian B./Weinberg, Charles B.	1987	archival	•											
Eisenhardt, Kathleen M.	1988	empirical – field study		•		•								
John, George/Weitz, Barton	1989	empirical – survey			•	•	•							
Basu, Amiya K./Kalyanaram, Gurumurthy	1990	theoretical									•			
Dearden, James A./Lilien, Gary L.	1990	theoretical											•	
Gerhart, Barry/Milkovich, George T.	1990	empirical – survey					•							
Holmstrom, Bengt/Milgrom, Paul	1990	theoretical									•			
Varian, Hal R.	1990	theoretical									•			
Oliver, Richard/Weitz, Barton	1991	empirical – survey		•										
Coughlan, Anne/Narashimhan, Chakravarthi	1992	empirical – field study								•				•
Kotlikoff, Laurence J./Gokhale, Jagadeesh	1992	archival								•				
Lal, Rajiv/Srinivasan, Vivek	1993	theoretical			•								•	
Umanath, Narayan/Ray, Manash/Campbell, Terry	1993	experimental		•										
Cable, Daniel/Judge, Timothy	1994	experimental										•		
Lal, Rajiv/Outland, Donald/Staelin, Richard	1994	empirical – survey		•									•	
Oliver, Richard/Anderson, Erin	1994	empirical – survey					•							
Zhang, Changning/Mahajan, Vijay	1995	theoretical											•	
Raju, Jagmohan S./Srinivasan, Vivek	1996	experimental	•											
Lewis, Tracy/Sappington, David	1997	theoretical						•						
Mantrala, Murali/Raman Kalyan/Desiraju, Ramarao	1997	theoretical		•										
Joseph, Kissan/Thevaranjan, Alex	1998	theoretical									•			
Gaba, Anil/Kalra, Ajay	1999	experimental									•			
Jung, Maximilian/Riegler, Christian	1999	theoretical											•	
Krafft, Manfred	1999	empirical – field study					•							
Money, Bruce/Graham, John	1999	empirical – survey										•		
Boyd, Brian/Salamin, Alain	2001	empirical – field study							•					

Table 1 (cont.). Studies on the determinants of SIS

Author(s)	Year of publication	Methodology	Determinants of salesforce incentive systems											
			Company-external			Company-internal								
			Customer structure	Environmental uncertainty	Replaceability	Cost of monitoring	Firm size	Information asymmetry	Organization of salesforce	Working experience	Individual risk preference	Cultural background	Structure of the product line	Complexity of selling task
Joseph, Kissan	2001	theoretical							•					
Kalra, Ajay/Shi, Mengze	2001	theoretical		•										
Prendergast, Canice	2002	theoretical		•										
Godes, David	2003	theoretical												•
Tremblay, Michael/Côté, Jérôme/Balkin, David	2003	empirical – survey								•				
Krafft, Manfred et al.	2004	empirical – field study				•								
Mishra, Birendra K./Prasad, Ashutosh	2004	theoretical						•						
Finkle, Aaron	2005	theoretical						•						
Misra, Sanjong/Coughlan, Anne/Narashimhan, Chakravarthi	2005	archival			•		•							•
Zhao, Hao	2005	theoretical		•										
Segalla, Michael et al.	2006	empirical – survey										•		
Caldieraro, Fabio/Coughhlan, Anne	2009	theoretical	•								•			
Chu, Leon/Sappington, David	2009	theoretical						•		•				
Rpuziès, Dominique et al.	2009	empirical – field study			•							•		•
Frenzen, Heiko et al.	2010	empirical – survey		•			•	•	•		•			
Mayo, Michael/Mallin, Michael	2010	empirical – survey								•				

3. SIS design

3.1. Performance measurement. *3.1.1. Input versus output orientation*. Lazear (1986), Eisenhardt (1985, 1988), Anderson and Oliver (1987) and Prendergast (2002) recommend output indicators when evaluating whether input or output control is the most favorable instrument to control salespeople. Prior studies analyzing input and output control mechanisms report differing results. Rouziès et al. (2009) explain the relative prioritization of output-based indicators by noting the greater importance of output indicators to a company and the difficulties in measuring salesperson input. Nevertheless, according to Basu et al. (1985) many sales organizations apply a hybrid form to combine the advantages of both systems. However, this decision seems to be contingent on external factors like the cultural background (Merchant et al., 2011).

3.1.2. Absolute versus relative performance measures. Whereas absolute numbers are primarily used in individualistic compensation schemes, relative numbers are primarily applied in competitive incentive schemes (Schöttner and Thiele, 2010). Competitive incentive schemes, such as tournaments, have been found to have increased in importance in recent years. Lim et al. (2009) document a strong short-term incentivizing effect of sales contests. Murphy and Sohi (1995) report that between 75% and 91% of surveyed European firms use competitive schemes to compensate their salesforces.

3.1.3. Individual versus team-based performance measurement. Knowledge transfer and risk sharing are initial reasons for a team selling component (Caldieraro and Coughlan, 2009). Lambe et al. (2009) provide evidence that team selling simplifies performance evaluation because not every individual performance needs to be evaluated, due to a self-managing effect. Jackson et al. (1999) report that 76.4% of US companies surveyed use team components to compensate their salespeople. Jones et al. (2005a, b) also document the increasing importance of team-based performance measures in this context.

3.2. Types of incentives. Regarding the types of rewards for salespeople, the literature generally distinguishes between incentives with direct monetary value and non-monetary incentives.

Monetary incentives are found to have the strongest impact on salesperson behavior, followed by opportunities for internal promotion as an approach that combines both types of incentives (Lopez et al., 2006; Milkovich et al., 2011). However, recent studies document the growing importance of non-monetary types of incentives (Darrat et al., 2010). On the other hand, penalties such as a reduction in compensation (Inderst and Ottaviani, 2009) or the threat of dismissal (Inderst, 2010) must be mentioned as (negative) incentives.

3.3. Compensation structure. *3.3.1. Variable components*. Peck (1982) shows that 18% of salespeople received a straight salary and 9% received a straight commission at study time, while the majority received a mix of salary and variable pay. Basu and Kalyanaram (1990) report that 17.1% of companies use straight salary. Joseph and Kalwani (1998) find that 95% of firms use variable payment systems to compensate salespeople, 58% use commission rates, 72% use bonuses, and 35% use a mix of bonuses and commissions. Darmon (1997) documents ratios of 85% salary and 15% variable pay for salespeople in the pharmaceutical industry.

3.3.2. Compensation functions. O'Connell (1989) states that 52% of companies in the US use convex compensation schemes while 37% deploy linear systems. Quotas can be applied with every function. Douthit (1976) provides evidence that 80% of firms at that time used sales quotas. Joseph and Kalwani (1998) show that 72% of firms deploy quota-based bonuses to incentivize salespeople, while 35% use both commission and bonuses. Oyer (2000), the most recent study in this context, reports that 89% of companies in the US apply sales quotas.

3.3.3. Time cycles. Regarding the optimal distribution cycle of salesforce compensation, different viewpoints can be found in the literature. Joseph and Kalwani (1998) show that 43% of companies employ yearly time cycles, 11% employ half-yearly cycles, 32% use quarterly cycles, and 15% use monthly cycles. Jain (2012) introduces the approach of multi-period cycles to suppress negative effects. Table 2 below summarizes the research on the design of SIS.

Table 2. Studies on the design of SIS

Author(s)	Year of publication	Methodology	Design of salesforce incentive systems				
			Performance measurement	Types of incentives	Structure of compensation	Size of compensation	Mode of distribution
Douthit, James	1976	theoretical	•		•		
Lazear, Edward P.	1981	theoretical				•	
Lazear, Edward P./Rosen, Sherwin	1981	theoretical		•			
Dubinsky, Alan/Barry, Thomas	1982	empirical – survey	•				
Ingram, Thomas/Ballenger, Danny	1983	empirical – survey		•			
Jackson, Donald/Keith, Janet/Schlacter, John	1983	empirical – survey	•				
Eisenhardt, Kathleen M.	1985	empirical – field study	•				
Ford, Neil/Churchill, Gilbert/Walker, Orville	1985	empirical – field study		•			
Spekman, Robert/Johnson, Wealey	1986	theoretical	•				
Holmstrom, Bengt/Milgrom, Paul	1987	theoretical			•		
Cron, William/Dubinsky, Alan/Michaels, Ronald	1988	empirical – survey				•	
Eisenhardt, Kathleen M.	1988	empirical – field study	•				
Basu, Amiya K./Kalyanaram, Gurumurthy	1990	theoretical			•		
Rao, Ram C.	1990	theoretical			•		
Gentry, James/Mowen, John/Tasaki, Lori	1991	theoretical	•				
Good, David/Stone, Robert	1991	empirical – survey		•			
Morris, Michael et al.	1991	empirical – survey	•				
Chonko, Lawrence/Tanner, John/Weeks, William	1992	empirical – survey		•			
Kotlikoff, Laurence J./Gokhale, Jagadeesh	1992	archival				•	
Snell, Scott	1992	empirical – survey	•				
Jaworski, Bernard/Stathakopoulos, Vlasis/Krishnan, Shanker	1993	empirical – survey	•				
Lal, Rajiv/Srinivasan, Vivek	1993	theoretical			•		

Table 2 (cont.). Studies on the design of SIS

Author(s)	Year of publication	Methodology	Design of salesforce incentive systems				
			Performance measurement	Types of incentives	Structure of compensation	Size of compensation	Mode of distribution
Moon, Mark/Armstrong, Gary	1994	empirical – field study	•				
Murphy, William H./Sohi, Ravipreet S.	1995	empirical – field study/survey	•				
Albers, Sönke	1996	theoretical			•		
Darmon, René	1997	theoretical			•		
Joseph, Kissan/Kalwani, Manohar U.	1998	empirical – survey			•		•
Gompers, Paul/Lerner, Josh	1999	empirical – field study				•	
Jackson, Donald et al.	1999	empirical – survey	•				
Jung, Maximilian, Riegler, Christian	1999	theoretical	•				
Oyer, Paul	2000	theoretical			•		
Prendergast, Canice	2002	theoretical	•				
Bertrand, Marianne	2004	empirical – field study				•	
Jones, Eli et al.	2005	theoretical	•				
Lopez, Tará B. et al.	2006	empirical – survey		•			
Caldieraro, Fabio/Coughlan, Anne	2009	theoretical	•				
Inderst, Roman/Ottaviani, Marco	2009	theoretical		•			
Lambe, Jay/Webb, Kevin/Ishida, Chiharu	2009	empirical – survey	•				
Lim, Noah/Ahearne, Michael/Ham, Sung	2009	experimental	•				
Miao, Fred/Lund, Donald/Evans, Kenneth	2009	empirical – survey		•		•	
Onyemah, Vincent/Anderson, Erin	2009	empirical – survey	•				
Rouziès, Dominique et al.	2009	empirical – field study	•				
Inderst, Roman	2010	theoretical		•			
Jain, Sanjay	2012	theoretical					•

4. Effects of SIS

4.1. Effort. *4.1.1. Revenue*. An instrument that may assist in directing salesperson effort toward revenue maximization is a convex compensation function (Basu et al., 1985; O'Connell, 1989). Working efforts of internally employed salespeople can further be focused on revenue by applying revenue as an important performance indicator. Concrete levels of revenue-to-be-achieved can be incentivized by using quota-based compensation (Dalrymple and Cron, 1998). In general, the literature finds that quota-based compensation has positive effects on salesforce behavior as long as the quotas are not set too high. Raju and Srinivasan (1996), Oyer (2000), and Jain (2012) highlight the positive effects of quotas.

Anderson et al. (2010) provide evidence that goal accuracy increases and goal levels decrease when the sales manager participates in the negotiation process for quotas. Fu et al. (2009) argue that higher quota levels do not always lead to improved effort. Effort may decrease when the quota is set unattainably high within a particular cycle. Oyer (1995) and Misra and Nair (2011) further examine the negative aspects of long bonus cycles.

4.1.2. Efficiency. Wotruba (1990) notably finds that half-time salespeople exhibit higher job satisfaction, lower turnover, and higher efficiency. High turnover rates of full-time salespeople are found to have negative efficiency effects, while part-timers should exhibit a minimum turnover rate to replace bad performers (Siebert and Zubanov, 2009). However, the conclusion regarding the positive consequences of turnover is questioned by other studies (Dess and Shaw, 2001). Bental and Demougin (2006) find that it is necessary to exert pressure on employees by monitoring input or by tournaments to achieve greater efficiency. Plouffe et al. (2009) find that high selling skills and adaptive selling enhance efficiency. These authors recommend that firms additionally incentivize a long-term-oriented interactive relationship with customers.

4.1.3. Customer satisfaction. Bettencourt et al. (2002) postulate a tendency toward knowledge-based selling to satisfy customer needs for complex products. Knowledge-based selling implies a detailed understanding of the product by the salesperson. Hauser et al. (1994) use a theoretical framework to conclude that incentive systems that include a compensation component based on customer satisfaction lead to higher long-term profits. Menguc and Barker (2003) generate empirical results showing that it is more effective to employ a combination of qualitative and quantitative performance indicators. Boedecker et al. (1991) recommend a compensation scheme based on input and output performance indicators to enhance customer satisfaction. Further, these authors suggest offering a bonus if a certain number of complaints is not exceeded.

4.1.4. Knowledge transfer. If SIS contains a competitive scheme, such as a promotion tournament, knowledge transfer can be suppressed (Lazear, 1989). However, Jones et al. (2005a) analytically underscore the learning effect that results from team selling. Itoh (1991) argues from a theoretical perspective that only when team selling implies knowledge transfer does it have a positive impact on firm profits. Even if the negative effects of free riding occur, knowledge transfer should be encouraged because the positive effects outweigh the negative. McAfee and McMillan (1991) do not report negative effects from transferring knowledge, because team members monitor the efforts of their colleagues.

4.2. Selection. *4.2.1. Performance evaluation*. The Schöttner and Thiele (2010) model reveals that a tournament in a setting with heterogeneous employees can be used to retain high performers. Conversely, a tournament with homogeneous employees seems less appropriate, because theoretically all employees are able to generate the same output. Chan (1996) addresses this problem from a theoretical perspective by opening the tournament to external employees but reports decreasing efforts, because the individual likelihood of winning the competitive scheme decreases. Internal salespeople might therefore discriminate against external candidates to artificially increase their likelihood of winning the tournament. Ganesan et al. (1993) provide evidence that salespeople who are promoted within their company have fewer tendencies to show opportunistic behavior, due to a higher level of trust in their employer.

4.2.2. Structure of compensation. Lazear (1986) analytically shows that with a higher variable component, companies attract and retain salespeople with high selling abilities. Lazear (2000), Banker et al. (2000) and Lo et al. (2011) generate empirical evidence that a higher variable-pay-to-total-compensation ratio leads to an increase in effective work efforts. Following Joseph and Thevaranjan (1998), compensation schemes with more variable components attract salespeople with a higher level of risk friendliness. The experimental findings of Holt and Laury (2002) show that a higher ratio of variable payment enhances the absolute level of risk friendliness. Mishina et al. (2010) conclude that the relative pressure to meet or exceed expectations is the main reason for excessive risk friendliness.

4.3. Negative effects. *4.3.1. Free riding*. Free riding primarily appears when a team component is integrated in salespeople's variable compensation (Caldieraro and Coughlan, 2009; Holmstrom, 1982; Itoh, 1991). Marino and Zábojnik (2004) suggest introducing competition between teams to solve this problem.

4.3.2. Collusion. Potters et al. (2004) experimentally demonstrate the existence and effects of collusion in SIS. Holmstrom (1982) introduces collusion in schemes with relative performance evaluation. Ishiguro (2004) argues that considering external candidates can solve the problem of collusion. Ganesan et al. (1993) report negative correlations between level of collusion and level of replaceability of current employees.

4.3.3. Timing aspects. Some authors, including Oyer (1995) and Misra and Nair (2011), describe the negative aspects of long bonus cycles. Oyer (1995) empirically shows that sales regularly reach their peak at the end of the fiscal year. Murphy (2001) reports empirical findings that, under incentive plans in which quotas are set based on internal standards, bonus variability is smoothed out compared with incentive plans in which quotas are based on external standards. This suggests that employees intend to fulfill their quota but do not want to harm themselves in future periods.

4.3.4. Sabotage. In the context of SIS, the literature regularly describes a situation in which the best employee represents a target for sabotage (Chen, 2003). Sabotage can be counteracted to some extent by a compensation component based on individual behavior or by a group component. Additionally, the use of external candidates in promotion tournaments may reduce sabotage (Chen, 2005). Another form of sabotage is "wildering" in the form of territory violations among salespeople (Dutta et al., 1999). In general, two forms of "wildering" exist. In the first case, segments with new customers are satisfied through unauthorized sales (Bucklin, 1993). In the second case, unauthorized salespeople take over existing customers. Following the empirical results of Iqbal and Feick (2002), "wildering" occurs

particularly in settings with outcome-based compensation and can be reduced by using input-based compensation.

4.3.5. Corruption. Mauro (1997) describes a low level of salesforce compensation as one important reason for corruption. Hauser and Simester (1997) conclude that through peer pressure, cultural norms, or considerable penalties, corruption can be factored out. Mishina et al. (2010) conclude based on empirical results that the likelihood of corruption even in prominent high-performing companies increases if expectations relative to a peer group are not satisfied, or if the pressure to meet expectations is extremely high. The question of appropriate goal levels is of great relevance in quota-based compensation systems (Darmon, 1997). Fu et al. (2009) argue that higher quota levels do not always lead to improved effort. Higher quota levels might even decrease effort and simultaneously enhance willingness to operate corruptly when a quota is set unattainably high within a bonus cycle.

4.3.6. Distortion. In addition to company-external consequences of distortion, such as the creation of unintended warranties through misselling, dilution of waning effectiveness, disparagement of competitive offerings, misreporting of own offerings, and tortuous interference, distortion can also lead to company-internal tensions, frustration, and anxiety among salespeople (Boedecker et al., 1991). Inderst and Ottaviani (2009) introduce the possibility of retracting commissions to reduce misselling. Kalra et al. (2003) solve this problem through a theory-based approach: transparent commission payments to provide a signal of quality. Straight salary with behavior controls might also reduce the practice of distortion. Further, long-term relationships based on trust are recommended (Anderson and Naurus, 1990). Boedecker et al. (1991) suggest a strict input review system. In addition, long-term-oriented performance indicators should help to reduce intentional distortion (Kalra et al. 2003). Table 3 (see Appendix) provides an overview of the research on the effects of SIS.

Conclusion and directions for future research

In this paper, we highlight and categorize the relevant literature and provide an integrative, contingency theory-based framework for the SIS literature. Our framework is based on over 200 sources, of which 54% apply empirical, 39% theoretical, and 7% experimental methodologies. Regarding the methodical approaches applied, the practice has developed from a primarily theoretical research in the past toward more empirical and experimental approaches in recent studies. However, our review also reveals many areas of research that need to be extended. In this section, we comment on a few of the most promising streams.

Determinants: In Section 2, we reviewed the research on the determinants of SIS. The majority of the reviewed articles focus on the question of how SIS should be designed with regard to relevant contingency factors. Based on our review, we therefore recommend the following avenues for future research. First, it must be questioned whether the determinants of SIS are entirely identified. In a fast-changing, globalized economy, already detected determinants may lose their importance, while new determinants (e.g., the Internet as a selling platform) may gain in importance. Second, an evaluation of the relative relevance of determinants would be valuable and should be the focus of future research (e.g., the influence of individual risk preferences in relation to the influence of work experience). Moreover, several interdependencies between determinants are presented in our review (e.g., environmental uncertainty and information asymmetry), but there is a need for more detailed evidence on the relationships between those factors and their simultaneous influence on the design and behavioral effects of SIS. Structural equation models might represent an appropriate statistical tool to further investigate these research questions. Third, there remain unresolved issues within the literature concerning company-external determinants. Further research is needed to resolve the controversy concerning the impact of environmental uncertainty on the variable-pay-to-total-compensation ratio. Further, the growing importance of cultural differences on SIS should be taken into consideration. In a globalized world, studies on management accounting change appear interesting in this stream of research.

Design: Section 3 refers to research that addresses the design of SIS in companies. In this context, we detect a strong focus on research concerning performance evaluation, whereas articles on the size of compensation and the mode of distribution in particular are relatively underrepresented. Further, we identify several avenues for future research in this area. First, to assess the relevance of instruments a more recent and differentiated investigation on differing designs of SIS in different branches of the literature would be highly beneficial. In addition, international comparative studies concerning SIS practices in emerging economies have not yet been conducted. Second, a tendency toward such incentives as an adequate work-life balance has become obvious in practice but has not been addressed in the scientific literature. Further, prior studies focus primarily on positive incentives. Therefore, negative incentives such as penalties should be taken into greater consideration. Third, the

approaches of efficiency wages and deferred compensation show significant potential to suppress negative effects and to select or retain high performers. Quantitative empirical evidence on these topics is still absent.

Behavioral effects: In the stream of research we evaluated in Section 3, publications mainly investigate which structure of SIS enhances or decreases performance or selection of salespeople. The largest number of identified articles concerning the effects of SIS address the question of how to allocate salesperson effort, followed by articles on negative effects of SIS. Future research should first focus on how the behavioral effects of SIS change over time. Does effort change if the same SIS is used over a long period of time? Should the structure of an implemented SIS change over time to keep sales effectiveness constantly high? An additional area for future research involves optimal turnover rates and part-time contracts. Is there an optimal turnover rate for better selection of salespeople? Do part-timers in fact exhibit greater efficiency than full-timers, considering turnover costs? More data are necessary to investigate this topic. Third, dysfunctional effects caused by opportunistic employees occur in various forms. However, publications addressing free riding, for example, only exist in the form of theoretical research. Empirical or experimental ratification is absent. While we detect a thorough scientific discussion concerning corruption and distortion, theoretical and empirical research for time aspects, collusion, and sabotage is scarce. It seems that quantitative data on the last two points would be particularly valuable.

While, mainly in the 1990s, dysfunctional effects were already identified in the scientific literature, relatively scarce evidence exists with regard to mechanisms appropriate for solving them. We therefore recommend a more detailed linkage between certain instruments of SIS and dysfunctional effects in salesforce settings. Experimental approaches might generate interesting findings to examine the behavioral effects of these instruments. In summary, the body of knowledge on SIS continues to grow. At the same time, new and innovative practices of SIS are applied in companies. As business becomes increasingly global and demographic developments intensify the war for talent, the optimal SIS becomes increasingly important for success in business. The challenge for research is to keep these developments in sight and to continue to address the existing research gaps.

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Appendix

Table 3. Studies on the effects of SIS

Author(s)	Year of publication	Methodology	Effects of salesforce incentive systems																	
			Effort intensity			Effort allocation						Selection			Negative effects					
			Performance evaluation	Structure of compensation	Size of compensation	Revenue	Profit	Efficiency	Introduction of new products	Customer satisfaction	Knowledge transfer	Attraction	Performance evaluation	Strusture of compensation	Free riding	Collusion	Time aspects	Sabotage	Corruption	Distortion
Farley, John U.	1964	theoretical					•													
Alcian, Armen/Demsetz, Harold	1972	theoretical													•					
Kerr, Steven	1975	empirical – case study																		•
Weinberg, Charles B.	1975	theoretical					•													
Williamson, Oliver/Wachter, Michael/Harris, Jeffrey	1975	theoretical											•							
Kerr, Steven	1975	empirical – case study																		•
Weinberg, Charles B.	1975	theoretical					•													
Williamson, Oliver/Wachter, Michael/Harris, Jeffrey	1975	theoretical											•							
Wachter, Michael/Wil-liamson, Oliver	1978	theoretical											•							
Wachter, Michael/Wil-liamson, Oliver	1978	theoretical											•							
Holmstrom, Bengt	1982	theoretical													•	•				
Tyagi, Pradeep	1982	empirical – survey											•							
Tyagi, Pradeep	1982	empirical – survey											•							
Nalebuff, Burry/Stiglitz, Joseph	1983	theoretical	•																	
Nalebuff, Burry/Stiglitz, Joseph	1983	theoretical	•																	
Pfeffer, Jeffrey/Cohen, Yinon	1984	empirical – field study														•				
Thurik, Roy/van der Wijst, Nico	1984	empirical – field study						•												
Pfeffer, Jeffrey/Cohen, Yinon	1984	empirical – field study														•				
Thurik, Roy/van der Wijst, Nico	1984	empirical – field study						•												
Anderson, Erin	1985	empirical – field study				•														
Caywood, Clark/Laczniak, Gene	1986	theoretical																		•
Lal, Rajiv	1986	theoretical					•													
Lazear, Edward P.	1986	theoretical												•						

Table 3 (cont.). Studies on the effects of SIS

Author(s)	Year of publication	Methodology	Effects of salesforce incentive systems																		
			Effort intensity			Effort allocation						Selection			Negative effects						
			Performance evauation	Structure of compensation	Size of compensation	Revenue	Profit	Efficiency	Introduction of new products	Customer satisfaction	Knowledge transfer	Attraction	Performance evaluation	Strusture of compensation	Free riding	Collusion	Time aspects	Sabotage	Corruption	Distortion
Lal, Rajiv	1986	theoretical					•														
Lazear, Edward P.	1986	theoretical												•							
Kerber, Kenneth/Campbell, James	1987	empirical – field study												•							
Kerber, Kenneth/Campbell, James	1987	empirical – field study												•							
Bellizini, Joseph/Hite, Robert	1989	experimental																			•
Lazear, Edward P.	1989	theoretical									•										
Lazear, Edward P.	1989	theoretical									•										
Anderson, James/Naurus, James	1990	empirical – field study																			•
Basu, Amiya K./Kalyanaram, Gurunurthy	1990	theoretical		•		•															
Dearden, James A./Lilien, Gary L.	1990	theoretical							•												
Wood, Robert/Bandura, Albert/Bailey, Trevor	1990	experimental				•															
Wotruba, Thomas	1990	empirical – survey						•													
Wood, Robert/Bandura, Albert/Bailey, Trevor	1990	experimental				•															
Wotruba, Thomas	1990	empirical – survey						•													
Barney, Jay	1991	theoretical										•									
Baucus, Melissa/Near, Janet	1991	archival																		•	
Itoh, Hideshi	1991	theoretical									•				•						
Lusch, Robert/Jaworski, Bernard	1991	empirical – survey	•																		
McAfee, Preston R./McMillan, John	1991	theoretical									•										
Ross, William	1991	experimental																		•	
Lusch, Robert/Jaworski, Bernard	1991	empirical – survey	•																		
McAfee, Preston R./McMillan, John	1991	theoretical									•										
Ross, William	1991	experimental																		•	
Henderson, John/Lee, Soonchul	1992	empirical – survey	•																		
Kachelmeier, Stephen/Shehata, Mohammed	1992	experimental												•							

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Kachelmeier, Stephen/Shehata, Mohammed	1992	experimental												•							
Bucklin, Louis	1993	theoretical																•			
Calfee, John/Rubin, Paul	1993	theoretical													•						
Chowdhury, Jhinhuk	1993	theoretical				•															
Cravens, David W. et al.	1993	empirical – survey						•													
Ganesan, Shankar/Weitz, Barton/John, George	1993	empirical – survey											•			•					
Jaworski, Bernard/Stathakopoulos, Vlasis/Krishnan, Shanker	1993	empirical – survey	•																		
Robertson, Diane/Anderson, Erin	1993	empirical – survey																			•
Jaworski, Bernard/Stathakopoulos, Vlasis/Krishnan, Shanker	1993	empirical – survey	•																		
Robertson, Diane/Anderson, Erin	1993	empirical – survey																			•
Ableson, Michael/Baysinger, Barry	1994	theoretical						•													
Brown, Steven/Peterson, Robert	1994	empirical – field study			•																
Cohen, Susan/Ledford, Gerald	1994	experimental									•										
Hauser, John/Simester, Duncan/Wernerfelt, Birger	1994	theoretical								•									•		
Lal, Rajiv/Outland, Donald/Staelin, Richard	1994	empirical – survey			•																
Oliver, Richard/Anderson, Erin	1994	empirical – survey	•																		
Lal, Rajiv/Outland, Donald/Staelin, Richard	1994	empirical – survey			•																
Oliver, Richard/Ander-son, Erin	1994	empirical – survey	•																		
Oyer, Paul	1995	archival				•											•				
Oyer, Paul	1995	archival				•											•				
Anderson, Rolph	1996	theoretical										•									
Banker, Rajiv et al.	1996	empirical – field study										•									
Chagalla, Goutam/Shervani, Tasaddug	1996	empirical – field study	•																		
Chan, William	1996	theoretical											•								
Horsky, Dan/Nelson, Paul	1996	empirical – survey						•													

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			Effort intensity			Effort allocation						Selection			Negative effects						
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Raju, Jagmohan S./Srinivasan, Vivek	1996	theoretical/numerical experiments				•															
Raju, Jagmohan S./Srinivasan, Vivek	1996	theoretical/numerical experiments				•															
Atuahene-Gima, Kwaku	1997	theoretical							•												
Chagalla, Goutam/Shervani, Tasaddug	1997	empirical – field study	•																		
Darmon, René	1997	theoretical																	•		
Drago, Robert/Gravey, Gerald T.	1998	empirical – field study									•										
Joseph, Kissan/Kalwani, Manohar U.	1998	empirical – survey		•										•							
Joseph, Kissan/Theva-ranjan, Alex	1998	theoretical												•							
Lee, Dong Hwang	1998	experimental		•																	
Joseph, Kissan/Kalwani, Manohar U.	1998	empirical – survey		•										•							
Joseph, Kissan/Thevaranjan, Alex	1998	theoretical												•							
Lee, Dong Hwang	1998	experimental		•																	
Baldauf, Artur/Cravens, David	1999	empirical – field study										•									
Bartol, Kathryn	1999	theoretical										•									
Dutta, Shantu/Heide, Jan/Bergen, Mark	1999	empirical – field study																•			
MacKenzie, Scott B./Podsakoff, Phillip M./Paine, Julie B.	1999	empirical – field study										•									
MacKenzie, Scott B./Podsakoff, Phillip M./Paine, Julie B.	1999	empirical – field study										•									
Banker, Rajiv et al.	2000	archival												•							
Hultink, Erik/Atuahene-Gima, Kwaku	2000	empirical – field study							•												
Langfred, Claus	2000	empirical – field study									•										
Lazear, Edward P.	2000	empirical – case study												•							
Oyer, Paul	2000	theoretical				•															
Wathne, Kenneth/Heide, Jan	2000	theoretical													•						
Langfred, Claus	2000	empirical – field study									•										
Lazear, Edward P.	2000	empirical – case study												•							

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Oyer, Paul	2000	theoretical				•															
Wathne, Kenneth/Heide, Jan	2000	theoretical													•						
Boyd, Brian/Salamin, Alain	2001	empirical – field study										•									
Demougin, Dominique/Fluet, Claude	2001	theoretical	•	•																	
Dess, G./Shaw, J.	2001	theoretical						•													
Kalra, Ajay/Shi, Mengze	2001	theoretical	•																		
Leigh, Thomas/Marshall, Greg	2001	theoretical										•									
Murphy, Kevin	2001	empirical – survey															•				
Kalra, Ajay/Shi, Mengze	2001	theoretical	•																		
Leigh, Thomas/Marshall, Greg	2001	theoretical										•									
Murphy, Kevin	2001	empirical – survey															•				
Bettencourt, Lance et al.	2002	empirical – field study								•											
Holt, Charles/Laury, Susan	2002	theoretical												•							
Iqbal, Zafar/Feick, Lawrence	2002	experimental																•			
Chen, Kong-Pin	2003	theoretical																•			
Kalra, Ajay/Shi, Mengze/Srivasan, Kannan	2003	theoretical																		•	
Marshall, Greg et al.	2003	empirical – survey										•									
Lim, Noah/Ahearne, Michael/Ham, Sung	2009	experimental	•																		
Plouffe, Christopher/Hulland, John/Wachner, Trent	2009	empirical – survey						•													
Siebert, Stanley/Zuba-nov, Nikolay	2009	archival						•													
Wei, Yinghong/Atuahene-Gima, Kwaku	2009	empirical – field study/survey							•												
Lim, Noah/Ahearne, Michael/Ham, Sung	2009	experimental	•																		
Plouffe, Christopher/Hulland, John/Wachner, Trent	2009	empirical – survey						•													
Siebert, Stanley/Zubanov, Nikolay	2009	archival						•													
Wei,Yinghong/Atuahene-Gima, Kwaku	2009	empirical – field study/survey							•												

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Ahearne, Michael et al.	2010	empirical – field study							•												
Anderson, Shannon/Dekker, Henri/Sedatore, K.	2010	empirical – field study				•															
Frenzen, Heiko et al.	2010	empirical – survey					•														
Fu, Frank et al.	2010	empirical – survey							•												
Haas, Martine	2010	empirical – survey									•										
Lim, Noah	2010	experimental	•																		
Mishina, Yuri et al.	2010	empirical – field study												•						•	
Schöttner, Anja/Thiele, Veikko	2010	theoretical											•								
Siebert, Stanley/Zubanov, Nikolay	2010	empirical – field study										•									
Lim, Noah	2010	experimental	•																		
Mishina, Yuri et al.	2010	empirical – field study												•						•	
Schöttner, Anja/Thiele, Veikko	2010	theoretical											•								
Siebert, Stanley/Zubanov, Nikolay	2010	empirical – field study										•									
Lo, Desmond et al.	2011	empirical – field study/survey												•							
Misra, Sanjog/Nair, Harikesh S.	2011	empirical – case study															•				
Lo, Desmond et al.	2011	empirical – field study/survey												•							
Misra, Sanjog/Nair, Harikesh S.	2011	empirical – case study															•				
Jain, Sanjay	2012	theoretical			•	•															