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The value of the sales function: A multilevel examination of the effect of strategic marketing ambidexterity and industry contingencies

Ali Reza Keshavarz [a], Ismail Gölgeci [b,*]

[a] Maynooth University Business School, Maynooth University, Maynooth, Co Kildare, Ireland
[b] School of Business and Social Sciences, Department of Business Development and Technology, Aarhus University, Herning, Denmark

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ABSTRACT

This paper investigates the effect of firm strategic marketing ambidexterity (SMA) and industry contingencies on the sales function's relative compensation level within organizations. It draws on longitudinal secondary panel data from two different sources, based on a sample of all business-to-business manufacturing firms with more than 100 salespeople in France across several years, and perform a hierarchical linear model (HLM) analysis. The model, tested on multilevel data, shows that SMA and its interaction with industry munificence and dynamism are significant determinants of the relative compensation of the sales function (RCSF). Results show that innovativeness and marketing resource endowment (two dimensions of SMA) have opposite effects on RCSF. Additionally, different industry contingencies—industry munificence, dynamism, and competitiveness—interact differently with SMA when explaining RCSF. This study highlights the relevance of the sales function in firms' pay practices and advances the understanding of variations in RCSF.

1. Introduction

Extant literature on sales forces covers a wide variety of factors that affect the level of sales force compensation. Individual factors such as salespeople's effort and motivation (Coughlan & Joseph, 2012), recruitment and mobility (Lo, Ghosh, & Lafontaine, 2011), the taxation burden, and job challenge (Rouziès, Coughlan, Anderson, & Iacobucci, 2009), as well as organizational and structural factors such as the programmability of a task, the span of control, uncertainty, and merchandise type (Eisenhardt, 1988), are some of the widely studied predictors of sales force compensation level. Yet, the sales function's value relative to other functions within a firm is absent from the compensation equations. The fact that salespeople constantly switch firms in search of better pay (Charles & Kelly, 2017) and the wide disparities in compensation levels of salespeople who perform similar tasks in different firms imply that firms do not value their sales functions in the same way. For example, in the tech industry, salespeople who performed similar jobs in similar functions at different firms such as Adobe Systems and Zendesk were being compensated substantially differently (Ferguson, 2019; Smith, 2011). Naturally, the importance of a function to a firm's strategic outlook and its contribution to that firm's performance drives the value of the function within the organization (Slater & Olson, 2000). Highly valued sales functions will be staffed by better performing, highly skilled, and motivated salespeople and compensated better than other functions. Hence, the relative compensation of the sales function (RCSF) is used as an indicator of the function's value in a firm (Yanadori & Marler, 2006).

While the dynamics of firms' strategic outlook and the compensation of functions such as R&D and management have been the subject of extensive attention from organizational scholars (e.g., Van Essen, Heugens, Otten, & Van Oosterhout, 2012; Veliyath, George, Ye, Hermanson, & Tompkins, 2016; Yan, Chong, & Mak, 2010), little scrutiny is afforded to the compensation of the sales function in relation to firm strategy (see, e.g., Slater & Olson, 2000 for an exception). Specifically, given the very close and intricate relationship between the marketing and sales functions (Rouziès & Hulland, 2014), business-to-business (B2B) firms' marketing strategy and its influence on sales compensation is worthy of greater attention.

Strategic marketing ambidexterity (SMA), which refers to "the blend of a firm's exploitation of existing competencies and exploration of future capabilities in strategic marketing activities" (Josephson, Johnson, & Mariadoss, 2016, p. 539), is argued to be an important and dynamic capability for firms' marketing strategy. However, its potential influence on the value of the sales function is not understood. Similarly,

* Corresponding author.
E-mail addresses: Alireza.Keshavarz@mu.ie (A.R. Keshavarz), i.golgeci@btech.au.dk (I. Gölgeci).

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in a world where the external environment exerts a profound influence on the way firms strategize and perform (Donaldson, 2001; Hoffer, 1975; Tangpong, Hung, & Li, 2019), the question of how industry contingencies (i.e., industry munificence, dynamism, and competitiveness) influence the role of SMA remains unanswered.

Considering the identified research gap and the profound implications of wage and income inequality for marketing (Bamberger, Homburg, & Wielgos, 2021), it is increasingly important to understand the sources of differences in RCSF. Accordingly, adding the relative value of the sales function into the equation of firms' pay practices and examining the firm-level and industry-level antecedents of RCSF can complement the understanding of compensation policies for salespeople beyond the existing literature (for a recent review, see Rouziès & Onyemah, 2018). Additionally, this study contributes to the literature that investigates the role and influence of different functions within organizations (Homburg, Workman, & Krohmer, 1999; Pfeffer & Salancik, 1978; Verhoef & Leeflang, 2009) by considering the hitherto neglected sales function.

This paper addresses the following research questions: 1) "What is the impact of SMA on RCSF?" and 2) "What role do industry contingencies play in the link between SMA and RCSF?" In answering those questions, contingency theory (Donaldson, 2001; Hoffer, 1975; Tangpong et al., 2019) and ambidexterity literature (Cenamor, Parida, & Wincent, 2019; Menguc & Auh, 2008; Raisch & Birkinshaw, 2008; Strese, Meuer, Flatten, & Brettel, 2016) were used to build and test hypotheses. Three different industrial and two organizational factors over four years were considered as the determinants of RCSF, leading to a multilevel analysis of its antecedents, which responds to recent calls for more multilevel research in marketing (Friend, Johnson, & Sohi, 2018; Magnotta, Murtha, & Challagalla, 2020). In that regard, the study tested the effect of a firm's marketing resource endowment (MRE) and innovativeness as SMA dimensions relating to RCFS, together with industry munificence, dynamism, and competitiveness as industry contingencies.

Panel data for the study came from two different sources. Compensation data obtained from the employee-employer via France's National Institute of Statistics and Economic Studies (INSEE) was matched with firm and industry data collected from Bureau Van Dijk's Orbis database. The final dataset consisted of 3621 observations from 911 B2B firms in 79 industries from 2006 to 2010.

The rest of the paper is structured as follows. First, the theoretical background on SMA, sales function and compensation, and contingency theory is provided, followed by different hypotheses. Then, data sources, measures, and analytical approaches to test hypotheses are detailed, and the results are reported and discussed. Next, the paper's conclusions and contributions are presented, and it is subsequently completed with a breakdown of the practical implications, limitations, and future research opportunities.

2. Theoretical background and hypotheses

2.1. Strategic marketing ambidexterity and the sales function

Ambidexterity embodies an organization's configuration of its existing capabilities in terms of its current resources and competencies (i.e., exploitation) and the development of its future capabilities (i.e., exploration) (Cenamor et al., 2019; Tushman and O'Reilly, 1996). In the marketing domain, exploitation denotes value extraction from existing possibilities and solutions found in current marketing opportunities, and marketing-based exploitation typically entails advertising/promotional strategies and is often resource-intensive (Reinartz, Thomas, & Kumar, 2005). Meanwhile, exploration is concerned with predicting prospective market needs and formulating offerings and solutions to meet them (Menguc & Auh, 2008; Vorhies, Orr, & Bush, 2011; Yalcinkaya, Calantone, & Griffith, 2007). It involves market search, experimentation, and developing new opportunities and knowledge through activities associated with innovation (Vorhies et al., 2011). The concurrent quest for market exploitation and exploration is called SMA (Josephson et al., 2016).

Ambidexterity in marketing can be manifested in several ways. For example, as the combination of collaboration and competition across functions as coopetition (Strese et al., 2016). Likewise, it can be understood as the reconciliation of knowledge exchange and knowledge protection in inter-organizational learning, along with consistency and innovation (Beverland, Wilner, & Micheli, 2015). Accordingly, while the most common understanding of ambidexterity in marketing focuses on exploitation and exploration (Menguc & Auh, 2008; Vorhies et al., 2011; Yalcinkaya et al., 2007), there are many other interpretations as to how marketing organizations can achieve ambidexterity.

In this research, SMA is conceptualized in terms of two factors that signify exploration (firm innovativeness) on the one hand and exploitation (MRE) on the other. *Firm innovativeness* refers to firms' openness and capacity to introduce innovation by engaging in and supporting new ideas, novelty, experimentation, and creative processes (Hult, Hurley, & Knight, 2004). Innovative firms are good at exploring new ideas and approaches, and crafting innovations in products, processes, systems, technologies, and structures. As such, firm innovativeness is experimental in nature, with typically unclear long-term returns, and involves explorative approaches to processes in marketing.

MRE refers to a firm's resource availability for marketing and sales activities (Fang, Lim, Qian, & Feng, 2018). It denotes the accessibility of tangible and intangible resources deployed for undertaking marketing initiatives and helps improve the firm's marketing capability, develop its customer base, and retain its existing customers (Fang et al., 2018). As such, it is a key indicator of strong short-term growth. As MRE relates to available resources for existing marketing activities, it entails a short-term perspective and involves exploiting what is at hand.

Given the sales function's position at the forefront of the firm's marketing strategy and its pivotal role in customers' moment of truth (i.e., the decision to engage in marketing exchange or not) (Rouziès & Hulland, 2014; Wang & Miao, 2015), there may be significant interplay between SMA and the firm's sales function. Sales functions account for a "substantial amount of marketing expenditures and revenues in many organizations" (Baldauf & Cravens, 2002, p. 1367). However, as noted above, relevant industry contingencies will likely condition how SMA influences RCSF. Thus, contingency theory and relevant industry contingencies are explored below.

2.2. Contingency theory, sales force compensation, and industry contingencies

The key tenet of contingency theory is that "organizational effectiveness results from fitting characteristics of the organization, such as structure, to contingencies that reflect the situation of the organization" (Donaldson, 2001, p. 1). As such, contingency theory posits that organizations are open systems that need careful management to satisfy and balance internal needs and adapt to environmental uncertainties, as the optimal course of action depends upon the mix of internal and external factors (Thompson, 1967). Contingency theory scholars have been pioneers in investigating the value of subunits (i.e., functions) in organizations (Hickson, Hinings, Lee, Schneck, & Pennings, 1971). Hickson et al. (1971) were among the first to adopt that theory to explain the differences in power between subunits of organizations. They argued that organizations are composed of interdependent subunits, and their most significant task is to adapt to environmental uncertainty. In their view, the power of a subunit derives from its ability to help the organization cope with environmental uncertainty. Thus, a subunit's ability to help the organization cope with environmental uncertainty will define its value.

Balkin and Gomez-Mejia (1987) were among the earliest adopters of a contingency perspective to investigate compensation practices in organizations. They argued that compensation practices at the functional

level would not be successful over the long term unless they were devised in alignment with the strategy of the entire organization. Using that framework, they investigated several contingency factors that affected the compensation practices of scientists and engineers in research and development functions. Based on this perspective, compensation practices at sales functions are related to contingency factors and are therefore worthy of greater attention. Sales jobs have several distinctive features: high levels of authority (Wang & Netemeyer, 2002), generation of more visible outcomes (Verbeke, Dietz, & Verwaal, 2011), boundary-spanning roles (Kusari, Cohen, Singh, & Marinova, 2005), and closeness to the customers (Palmatier, Scheer, & Steenkamp, 2007) as the main source of revenue. That makes them unique in an organization. Hence, compensation practices for sales functions are likely to differ from those of R&D units.

This study investigates the effect of industry munificence, dynamism, and competitiveness as the main dimensions of environmental uncertainty (Pennings, 1975). As the sales function is the closest function to customers and is greatly dependent on contextual changes in the environment, market uncertainty is likely to profoundly affect the value of this function. Also, organizations' MRE may affect the type of strategies that firms may follow (Karim & Mitchell, 2000) and strategic behavior may affect the value firms assign to one function or another (Slater & Olson, 2000). The marketing unit is one of the functions that is closely related to sales and it may perform overlapping tasks that can affect the value of the sales function within the organization (Rouziès & Hulland, 2014). Variations in value propositions, in turn, will affect the task and consequently the value of the sales function.

Personal selling via a sales force is one of the most important marketingtools. According to Zoltners, Sinha, and Lorimer (2008), US firms spend approximately $800 billion on their sales forces every year, which is almost three times as much as they spent on advertising in 2006. However, sales force compensation plans differ within and across firms based on industry contingencies. Overall, the literature on sales force compensation mainly focuses on finding optimal compensation plans to motivate salespeople using agency theory (Coughlan & Joseph, 2012). According to that theoretical framework, risk-averse salespeople (i.e., agents) are hired by risk-neutral firms (i.e., principals). To reconcile their conflicting objectives, an optimal combination of fixed and performance-based variable pay drives sales effort (through financial incentives) and compensates for salespeople's risk aversion (through fixed salary) (Coughlan & Joseph, 2012; Rouziès et al., 2009).

Several studies have applied resource dependence theory (Pfeffer & Salancik, 1978) to investigate the drivers and outcomes of the relative influence/importance of the marketing function within firms (Shah & Murthi, 2021; Verhoef & Leeflang, 2009). However, less is known about the influence/importance of the sales function. Accordingly, this papers posits that it is possible to understand how the dimensions of industry munificence, dynamism, and competitiveness, which are related to environmental uncertainty, may shape the connection between SMA and RCSF.

2.3. Hypotheses

Drawing on sales-force management, compensation, and resource dependence theory, this section outlines several hypotheses about the effect of firm innovativeness, MRE and industry munificence, dynamism, and competitiveness on RCSF.

2.3.1. Direct hypotheses

Firm innovativeness enables firms to reinvigorate their products, processes, and structures and differentiate themselves in their markets (Gölgeci, Assadinia, Kuivalainen, and Larimo, 2019). Accordingly, innovative firms are likely to have competency levels that allow them to devise better routines, adopt an experimental approach to learning and innovation, and create superior future value. At higher levels of innovativeness, firms need to focus on responding to customers' needs (Hult et al., 2004). Therefore, in addition to *direct selling activities* such as conducting sales presentations, closing deals, and processing orders, salespeople need to engage in *indirect selling activities* and become involved with the firm's innovation processes. Activities such as staying up to date with changing trends, customer needs, and competitive offerings to provide timely information about product alterations are essential (Hughes, Le Bon, & Rapp, 2013; Tuli, Kohli, & Bharadwaj, 2007). As such, salespeople need to build customer awareness, stimulate product trials, develop primary product demand, make new product demonstrations, and disseminate information about the new product idea back to the R&D and design department (Homburg, Alavi, Rajab, & Wieseke, 2017; Likoum, Shamout, Harazneh, & Abubakar, 2020).

Functions that are close to customers will play a significant role in innovative firms, with the sales function in particular providing *market intelligence* by keeping well-informed of customer needs, obtaining new ideas from lead customers, and evaluating new product ideas with customers (Ahearne, Rapp, Hughes, & Jindal, 2010; Slater & Olson, 2000). In addition to *closeness to the marketplace*, to ensure their voices are heard, salespeople need to have influential power within innovative organizations. That means they need to have "expert power" in order to appear rational and trustworthy, thus giving them an influential voice within the organization's innovation process. Without that, salespeople's voices within the innovation process will fall flat and undermine the performance of the innovative offerings in the marketplace (Joshi, 2010). Hence, innovative firms will need to hire highly skilled salespeople to satisfy their intraorganizational and marketplace skill requirements and that comes at a greater cost. As such, a sales force is likely to be more valued when there are higher levels of innovativeness, and RCSF is likely to be higher.

Firms with low levels of innovativeness, on the other hand, are usually in the exploitation phase (Rothaermel & Deeds, 2004). In such conditions, competition between firms is usually based on operational efficiency and therefore tends to focus on low costs. When that is the case, a comparatively low expenditure of resources on the sales force is appropriate (Yalcinkaya et al., 2007). Indeed, the primary focus is typically on direct selling activities, with little, if any, emphasis on non-sales activities. Building customer awareness and customization, adapting to customer needs, knowledge about trends in the marketplace, and changing technologies will have lower priority (Alavi et al., 2021; Tuli et al., 2007), and closing deals and processing orders in such conditions become the main determinant for firms' success (Vorhies et al., 2011). Those selling activities are, by nature, less complex than relationship management and market sensing, where complex solutions entail complex relational processes (Tuli et al., 2007). Indeed, salespeople in less innovative firms may not always require sophisticated behavioral and technical skills (Baldauf & Cravens, 2002). Thus, when there are lower levels of innovativeness, the sales force is likely to be less valued and RCSF is likely to be lower. Consequently, the following hypothesis is proposed:

H1: Firms with higher levels of firm innovativeness will have a higher RCSF.

Resource endowments play a central role when investigating compensation estimates based on firms' capabilities. Two aspects of resource endowments are pertinent for this research. First, firms with greater MRE may exhibit a greater ability to develop greater marketing capabilities (Dutta, Narasimhan, & Rajiv, 1999). Second, firms with greater MRE may generate superior outcomes such as increased market effectiveness because of their marketing intelligence capability, efficient promotion, and greater channel support (DeSarbo, Di Benedetto, Song, & Sinha, 2005).

It has been well documented that salespeople perform critical boundary-spanning roles (McDonald, Millman, & Rogers, 1997) and increase the flow of valuable information from customers and competitors to the firm. According to Festervand, Grove, and Eric Reidenbach

(1988), firms may greatly benefit from involving the sales force in the design and operation of market intelligence systems, considering their close relationship with customers and the low costs of exploiting that type of market information. In addition, salespeople can provide early insights into competitors' activities and other marketplace changes (Walker, Kapelianis, & Hutt, 2005). Despite that, organizations with high levels of MRE may fail to analyze competitive information collected from or by salespeople or integrate those data into the general marketing intelligence system (Festervand et al., 1988). Moreover, in relative terms, they may be less dependent on salespeople due to a greater abundance of marketing resources. In other words, when firms can afford costly yet effective marketing initiatives and develop superior products and services (Fang et al., 2018), customers may demand their products and services more readily and the firm may be less dependent on the sales force to promote or sell their products and services. In such situations, as they are less valued, salespeople may be reluctant to engage in marketing intelligence activities (Nowlin, Anaza, & Anaza, 2015) because it will not generate a visible outcome for them in terms of their compensation. In such situations, many marketing intelligence tasks may often be delegated to non-sales marketing employees (Hattula, Schmitz, Schmidt, & Reinecke, 2015), which, in turn, would undermine the importance of salespeople, leading to lower relative compensation for the sales function.

In addition, firms with high levels of MRE are likely to have less incentive to become market pioneers (Rodríguez-Pinto, Gutiérrez-Cillán, and Rodríguez-Escudero, 2007), reducing their reliance on sales forces and hindering RCSF. The abundance of their marketing resources (Fang et al., 2018) may lead to complacency, which will mean they overlook the critical role of salespeople in gathering market and competitive intelligence. Indeed, Debruyne, Frambach, and Moenaert (2010) found that large marketing or financial resources stocks may make managers complacent, which can lead to inaccurate competitive and market intelligence and misprediction of the success of competitive offerings in the marketplace. As such, MRE may function as a substitute for salespeople performing market intelligence tasks, which may hurt those salespeople's standing in the organization and curb their compensation levels. Thus, as greater MRE might undermine the importance of sales jobs in organizations, the following hypothesis is proposed:

H2: Firms with higher levels of MRE will feature a lower RCSF.

2.3.2. *The moderating role of industry contingencies*

One of the most widely studied environmental variables is market uncertainty. Market uncertainty refers to the degree to which a firm operates in unstable and unpredictable markets and has short product cycles, fierce competition, and volatile sales responses (Li, Poppo, & Zhou, 2008). Uncertainty is a central construct in the formulation of Thompson (1967) theory of organizational structure, and he argued that boundary-spanning units help buffer the organization from the sources of uncertainty. Hickson et al. (1971) argued that coping with important sources of uncertainty for the organization confers power to a group. In a marketing context, meanwhile, Spekman and Stern (1979) studied the structure of the buying group and argued:

> By adapting its structural configuration to match the level of uncertainty in its environment, a firm can facilitate the gathering and processing of information crucial to its decision making; thereby reducing uncertainty to a manageable level. (p. 55)

At an overall level, when market-related uncertainty is high, boundary-spanning individuals (e.g., salespeople) are expected to make a more important strategic contribution to the firm because there is a greater need to gather and process market-related information. That contribution's greater value can increase the power and influence of those individuals within organizations, and greater influence and power are likely to lead to greater compensation levels (Pfeffer & Salancik, 1978).

That said, as market uncertainty is a multidimensional construct consisting of industry munificence, dynamism, and competitiveness (Dess & Beard, 1984; Gligor, Esmark, & Holcomb, 2015), different dimensions may play different moderating roles in the links between SMA and RCSF. The first dimension, *industry munificence,* refers to an industry's capacity to support growth through an abundance of resources (Dess & Beard, 1984). In munificent industries, firms tend to follow strategies and structures that can assist them in capturing growth opportunities (Gligor et al., 2015). Thus, industry munificence can be positively related to greater sales, as competition tends to be more relaxed in high-growth industries than in slow-growth or more mature ones (Porter, 1980). The second dimension, *industry dynamism,* refers to the instability or volatility present in the industry environment (Dess & Beard, 1984). It encompasses the volatility and unpredictability of industry dynamics that stem from technological changes, variations in customer preference, and fluctuations in product demand and supply of materials (Gligor et al., 2015). The third dimension, *industry competitiveness,* refers to the intensity of competition in an industry where firms operate (Chang, Hughes, & Hotho, 2011). Competitiveness and lower barriers to entry in an industry are associated with increased competition and a lower bottom line (Porter, 1980). The higher the number of competitors a firm has to contend with in an industry and the greater their strength, the more complex and challenging that industry becomes (Donaldson, 2001; Gligor et al., 2015). Accordingly, while industry munificence is typically perceived positively, industry dynamism and industry competitiveness may exacerbate the challenges faced by firms.

Extant research offers few insights into the interplay between SMA dimensions and market uncertainty dimensions in explaining RCSF. In particular, it is not completely clear how industry munificence, dynamism, and competitiveness would moderate the relationship between firm innovativeness and RCSF, on the one hand, and MRE and RCSF, on the other. Thus, this study empirically investigated whether the strength of the link between SMA and RCSF does indeed vary across levels of industry munificence, dynamism, and competitiveness.

In specific terms, salespeople working in highly innovative firms may not find industry munificence particularly advantageous since industry munificence and its supporting role in firms' capacity to grow may undermine those salespeople's relative value to their organizations (Gölgeci, Arslan, Dikova, and Gligor, 2019). As argued previously, salespeople perform both direct selling activities- sales presentations, closing deals, and processing orders- and indirect selling activities such as – competitive and market intelligence gathering and dissemination. Moreover, both activity types drive the value of the sales function within the firm. When firms operate in highly munificent environments with strong demand and high profit and growth (Goyal & Mishra, 2019), the value of indirect selling activities in innovative firms may be diminished. In munificent industries, as the market grows and the firm's innovative offerings gain greater traction with less effort, the firm's focus shifts toward capturing a greater share of the growing market. When there is strong demand, direct selling activities take a front seat relative to other salespeople's activities. In fact, in an environment with excessive demand, salespeople will perform more of the lucrative order-taking and deal-closing work and less of the difficult market and competitive intelligence tasks. In those situations, the size of the sales force rather than the skills and competence of each salesperson becomes the defining factor (Zoltners, Sinha, & Lorimer, 2006). Moreover, as direct selling activities can be effectively supported by standardized sales processes and lower-skilled salespeople, the relative value and compensation of the sales function will diminish.

Unlike in munificent industries, in dynamic and competitive industries, salespeople's contribution to the innovation processes of the firm becomes particularly critical. Industry dynamism represents instability and volatility (Dess & Beard, 1984), and industry competitiveness represents the intensity of competition (Chang et al., 2011). Firms become compelled to innovate in order to navigate market dynamics

(Likoum et al., 2020) and may rely more on salespeople's indirect selling activities to build customer awareness, stimulate product trials, develop primary product demand and disseminate new product ideas back to design and R&D (Homburg et al., 2017). Additionally, salespeople need to have the expert appeal to be trusted to influence the firm's innovative processes (Joshi, 2010). Similarly, industry competitiveness puts a premium on indirect selling activities, with timely *competitive intelligence* about competitors' offerings, in addition to market intelligence, potentially becoming an invaluable source of information for the firm's innovative processes (Ahearne, Lam, Hayati, & Kraus, 2013). Thus, when an industry is characterized by high levels of dynamism and competitiveness, innovative firms may have to rely more on salespeople to utilize the innovativeness of their products and services in the marketplace and achieve financial returns on their potential. The increased relative value of salespeople in conditions of significant industry dynamism and competitiveness will therefore likely translate into increased RCSF. Thus, the following hypotheses are proposed:

H3a: Industry munificence negatively moderates the link between firm innovativeness and RCSF, such that higher (lower) levels of industry munificence weaken (strengthen) the positive influence of firm innovativeness on RCSF.

H3b: Industry dynamism positively moderates the link between firm innovativeness and RCSF, such that higher (lower) levels of industry dynamism strengthen (weaken) the positive influence of firm innovativeness on RCSF.

H3c: Industry competitiveness positively moderates the link between firm innovativeness and RCSF, such that higher (lower) levels of industry competitiveness strengthen (weaken) the positive influence of firm innovativeness on RCSF.

Given the potential parallels and related redundancy between MRE, as the munificence of the firm's internal resources (Fang et al., 2018), and industry munificence, as the munificence of the external resources in the industry context (Dess & Beard, 1984), industry munificence is expected to negatively moderate the negative link between MRE and RCSF. In other words, although firms with high levels of MRE may experience redundancy due to the availability of internal resources, operating in munificent and growing industries may also help them utilize those abundant resources more efficiently, which can alleviate MRE's negative role in RCSF, as hypothesized in H2. That means that firms that concentrate on exploiting the munificent marketplace may look to make greater and more meaningful use of their salespeople. As both MRE and industry munificence consider the munificence of internal and external resources, firms with high levels of MRE operating in munificent industries will likely have even more resources to dedicate to their sales forces (Boudreaux, 2021), even if they are less dependent on them. When internal MRE is combined with high industry munificence, firms may be better positioned to increase RCSF compared to when internal MRE is combined with low industry munificence. As such, the combination of high levels of both MRE and industry munificence may attenuate the negative role of MRE in RCSF.

One of the central characteristics of industry dynamism is unpredictability (Dess & Beard, 1984). As such, under high levels of industry dynamism, firms may face a greater challenge in predicting and planning for future market trends (Gligor et al., 2015) and allocating their MRE. When firms with high levels of MRE face high levels of industry dynamism as a harbinger of rapidly changing business environments and a competitive landscape, more of the marketing resources at their disposal are likely to be dedicated to strategizing business activities and coping with market dynamics (Gligor et al., 2015; Josephson et al., 2016; Teece, 2007). In particular, as marketing intelligence and planning become more challenging in highly dynamic contexts (Gölgeci, Arslan, et al., 2019), firms may have to dedicate even greater effort to immediate market sensing and market intelligence, which will add to the importance of salespeople's indirect selling activities. As argued, performing indirect selling tasks in addition to direct ones requires highly skilled salespeople who come at a premium. Accordingly, the combination of high levels of both MRE and industry dynamism may mitigate the negative role of MRE in RCSF.

In a similar vein, as MRE concentrates on exploiting firms' existing marketing resources, ideally under relatively munificent and amicable conditions (DeSarbo et al., 2005), industry competitiveness may curb the negative impact of MRE on RCSF. In other words, firms operating under high levels of industry competitiveness may have to rely more on their salespeople for customer acquisition, retention, and market and competitive intelligence (Hughes et al., 2013), thus weakening the negative role of MRE in RCSF. Market competition is a key indicator of the prominence of marketing and sales functions (Hughes et al., 2013; Likoum et al., 2020), and when industry competitiveness is coupled with high levels of MRE, firms may be compelled to pay greater attention to properly compensating their sales forces. As such, industry competitiveness is likely to lead to greater reliance on salespeople and, accordingly, better compensation. When firms are endowed with greater marketing resources, they may be in a better position to prioritize their sales force when there are high levels of industry competitiveness. While high levels of MRE may indicate a weaker position and compensation of salespeople (Rodríguez-Pinto et al., 2007), industry competitiveness may change that dynamic, bringing the sales function to the forefront of marketing and facilitating a better RCSF. Thus, the following hypotheses are proposed:

H4a: Industry munificence negatively moderates the link between MRE and RCSF, such that higher (lower) levels of industry munificence weaken (strengthen) the negative influence of MRE on RCSF.

H4b: Industry dynamism negatively moderates the link between MRE and RCSF, such that higher (lower) levels of industry dynamism weaken (strengthen) the negative influence of MRE on RCSF.

H4c: Industry competitiveness negatively moderates the link between MRE and RCSF, such that higher (lower) levels of industry competitiveness weaken (strengthen) the negative influence of MRE on RCSF.

The conceptual model depicted in Fig. 1 below summarizes the proposed relationships.

3. Method

3.1. Data

The data for this study was collected from two different sources. First, compensation data was compiled from the data sets of DADS (Déclaration Annuelle de Données Sociales or Annual Declaration of Social Data), which contain exhaustive annual records of all employee-employer dyads in France and is provided by INSEE. DADS is an annual declaration of compensation-related data by all firms that recruit employees in French territory. The data is based on mandatory employer reports of each employee's total gross earnings subject to French payroll taxes. The data include employee characteristics, firm characteristics, employee earnings, and their start date at the firm. For this research, matched employee-employer data were extracted for all the sales functions in France between 2006 and 2010, inclusive. First, the entire population of salespeople in France was sampled in the respective years through the PCS code of occupations, which is a nomenclature of occupations developed by INSEE in 2003 (Desrosières & Thévenot, 1988). Each individual-establishment observation included an occupation code. Then, all manufacturing (non-retail) B2B firms with more than 100 salespeople on their payroll were sampled, resulting in 1179 firms. Then, the national firm identifiers in France (SIREN) were matched with Orbis's financial databases. The final dataset included 911 B2B firms covering 79 three-digit industry codes (NAF/NACE). Hence, the unit of the analysis is the firm.

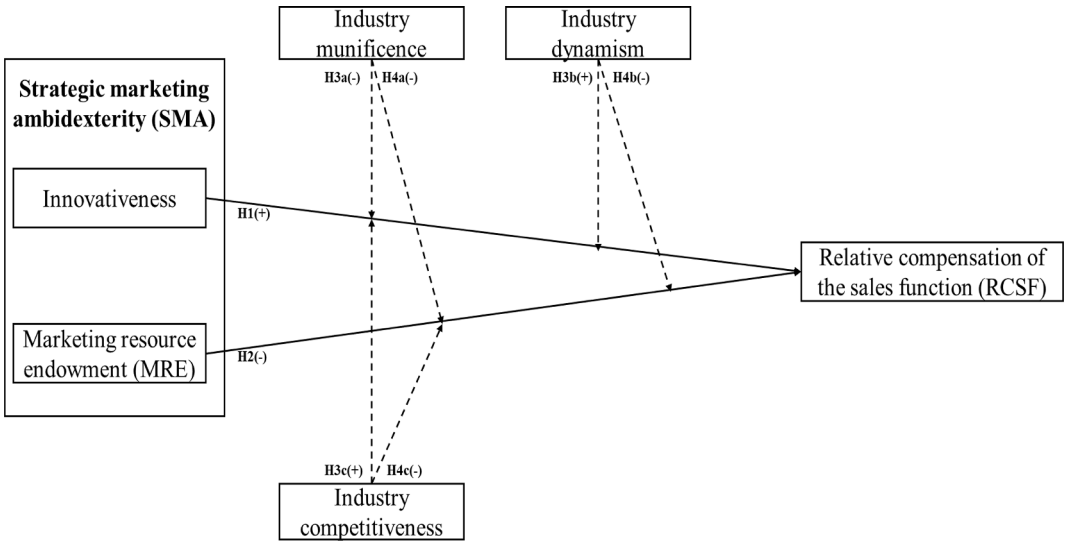

Fig. 1. Conceptual framework.

To ensure that the sample was consistent with the study framework, a limit of (non-retail) manufacturing industries was imposed. For the rest of the firms in the data, either the SIREN code did not match any firm on Orbis, or the data on the variables of interest in the given years were missing. Despite losing 268 firms to matching, the sample retained around 80 % of the entire population of firms in France's manufacturing sector that are large enough to have a notable sales organization, i.e., more than 100 salespeople. To a great extent, that addresses any concerns around selection bias.

3.2. Measures

3.2.1. Dependent variable

To construct *the relative compensation level of the sales function* (RCSF), total net compensation (after tax), including fixed and all variable pay received by the individual during the year, was divided by the number of hours worked to yield an hourly compensation measure. Then, salespeople's average hourly compensation was divided by that of the rest of the firm. Since both measures have highly skewed distributions, the natural logarithm was taken to fit the normality assumption from estimates produced through ordinary least squares.

3.2.2. Independent variables

Firm innovativeness was measured by the firm's patenting intensity. Patenting intensity is measured by the patents assigned to the firms divided by the firm size, measured by the number of employees. Innovativeness input measures such as R&D expenditure do not necessarily turn into innovations and actual products, but patents represent codified knowledge as intermediate outputs of innovation processes (Rubera & Kirca, 2012). Indeed, the number of patents has often been used as a proxy for innovativeness in past research (Archibugi & Coco, 2005; Tellis, Prabhu, & Chandy, 2009).

The most common measure of *marketing resource endowment* (MRE) in the literature is marketing expenditures divided by total revenue. However, marketing expenditure is not reported in public reports for most of the firms registered in DADS. The next alternative is the number of marketing personnel divided by the total number of employees (Dutta et al., 1999; Vorhies, Morgan, & Autry, 2009). The latter measure was employed as each firm's exact number of employees and their job categories are accessible through PCS codes. However, as the measure was extremely skewed, the log transformation of the variable was used. The number of trademarks owned by a firm as an alternative measure for MRE was available for a subsample of 40 %. The analysis of that subsample using said measure yielded results that were widely consistent with the reported tables that used the original measure of ratio of marketing personnel.

To represent industry contingencies, *munificence, dynamism, and competitiveness* were all measured. Industry munificence denotes an industry's capacity to support growth given abundant resources (Dess & Beard, 1984). To construct that measure, average annual three-digit NACE industry sales over the encompassing five years ($t-2$ to $t+2$), which contained the focal year as a midpoint (e.g., the value for 2009 is the average industry sales over the years 2007–2011), were regressed onto a measure of time for the panel. The coefficient obtained from that regression was used to measure munificence (Dess & Beard, 1984).

Industry dynamism reflects the instability or volatility present in the industry environment (Dess & Beard, 1984). The standard error of the slope regression coefficient that was described above was used as the measure of industry dynamism (Dess & Beard, 1984). Industry competitiveness denotes the extent to which a focal industry is characterized by intense competition (Chang et al., 2011) and, consistent with previous research (Nauenberg, Basu, & Chand, 1997), the Herfindahl index indicates industry competitiveness. For this study, the top 100 firms with the highest revenues in each industry were selected. The value of the Herfindahl index here was the sum of the squares of the market shares held by the top 100 firms in the industry. As higher index values indicate that firms could engage in anticompetitive behavior, in this study, the value was subtracted from one to ensure that the higher values reflected higher industry competitiveness (Hay & Morris, 1979).

3.2.3. Control variables

We controlled for *firm size* as it might have correlated with the firm's resource endowment. Size was measured by the total number of the firm's employees.

In terms of the *relative size of the sales function*, a larger sales function may features greater skills diversity among salespeople, which, in turn, may affect the heterogeneity of performance and the associated compensation level in sales functions (Lo et al., 2011). The relative size of the sales function was measured by the number of salespeople divided by the number of employees in other functions.

As regards *average tenure among salespeople*, firms may employ salespeople with different experience levels, depending on human resource requirements. Therefore, firms that employ more experienced salespeople may compensate them at a higher rate. That measure was constructed by averaging the tenure of all salespeople within the firm in a given year, which was, in turn, calculated by subtracting the year of

the observation from the year the salesperson entered the firm.

On *gender imbalance*, Arulampalam, Booth, and Bryan (2007) found consistent evidence of a gender pay gap across European countries. To account for that effect, we controlled for the ratio of male workers in a sales function.

Firm diversification, in terms of their products and processes, may be reflected in the types of individuals firms employ and the financial incentives firms award them. Furthermore, diversification may provide better internal career opportunities for individuals and that, in turn, can affect pay levels (Gomez-Mejia, 1992). Diversification was measured by the relative number of employees in the firm's main industry. That measure, also known as the *relatedness ratio*, describes the dominant proportion of a firm's assets that is invested in a single line of business or group of businesses within a firm (Cardinal & Opler, 1995).

Finally, *regional concentration of sales force* was adopted to reflect how the availability of suitable salespeople in the firm's proximity can influence the value of those individuals in the labor market, which in turn may affect their value for the firm. That variable was measured as the ratio of the number of salespeople in a region to the total number of salespeople in the country, divided by the region's surface area (Andersson, Burgess, & Lane, 2007).

4. Analysis and discussion

4.1. Econometric model

A multilevel approach using Longitudinal Hierarchical Linear Model (HLM) analysis via Stata 16 and the mixed command (StataCorp, 2013) was employed to test the hypotheses. Multilevel analysis is important for understanding how firm-level factors interact with industry-level factors in explaining focal phenomena (Hofmann, Griffin, & Gavin, 2000). HLM was particularly suitable for this study as it analyzes nested data, where observations (over time) are nested within firms, and firms are nested within industries. When estimating the effect of firm-level variables, researchers often control for industry heterogeneity using industry fixed-effect models. The drawback of those models is that they do not allow for simultaneous estimation of firm and industry-level variables. Similarly, estimating transient (time-variant) firm variables with fixed firm effects does not allow for intransient (time-invariant) variables. HLM gave the flexibility for simultaneous estimation of transient, intransient, and higher-level (i.e., industry level) variables without over-compromising the effect of lower-level variables (i.e., firm level) (Garson, 2013). To account for heteroskedasticity, the models were estimated using robust standard errors.

Compensation policies within organizations are decisions made in a shorter period than changes to the firm's MRE or innovativeness and industry contingencies. Hence, the likelihood of reverse causality is fairly low. However, lagged IVs were used to accommodate the potential bias, which led to the loss of one year's worth of data.

4.1.1. Unconditional model

The HLM analysis included the estimation of equations that nest observations over time, and within firms and industries. The first step estimated an unconditional (no independent variables) three-level model. The model divided the variation in RCSF as it is allocated time, and between firms and industries.

At the first level of analysis, RCSF at each period is modeled as a function of RCSF mean and a random error:

$$RCSF_{tij} = \pi_{0ij} + e_{tij} \tag{1a}$$

where *t, I,* and *j* denoted time, firms, and industries, respectively, and there were

$t = 1, 2, \ldots, Tij$ time periods within firms i in industry j;
$i = 1, 2, \ldots, Ij$ firms within industry j; and
$j = 1, 2, \ldots, J$ industries.

Y_{tij} was the RCSF at time t in firm i in industry j; π_{0ij} was the mean RCSF (over time) of firm i in industry j; and the time-level random error, which represented variance *over time*, was denoted by e_{tij}. The model assumed that e_{tij} was normally distributed (0, σ^2); thus, variance over time was σ^2.

At the second level of analysis, the mean RCSF of each firm, π_{0ij}, is modeled as an outcome varying randomly around some industry mean:

$$\pi_{0ij} = \beta_{00j} + r_{ij} \tag{1b}$$

β_{00j} was the mean RCSF of firms in industry j; and r_{ij} was the random *between-firm* residual in industry j (between-Firm variance). It was assumed that r_{ij} was normally distributed (0, τ_π), so τ_π was the variance between firms. The model only assumed that variability was common across firms within each of the j industries.

At the third level of analysis, the intercept of the firm-level model, β_{00j}, is modeled as an outcome varying randomly around a grand mean:

$$\beta_{00j} = \gamma_{000} + \mu_j \tag{1c}$$

That level examined *between-industry* variance, where γ_{000} represented the grand mean of RCSF. That level also had its own random *between-industry* residual, μ_j, which was normally distributed (0, τ_β).

Year effects could also be estimated by the inclusion of year dummies at the first level of analysis, as displayed in Equation (2), where π_{1ij} represented year effects (i.e., the impact of cyclical variations in compensation practices); where year was a series of dummies coded for each year; and π0ij now represented the mean of RCSF (over time) for firm i in industry j adjusted for year effects.

$$RCSF_{tij} = \pi_{0ij} + \pi_{1ij}(Year)_{tij} + e_{tij} \tag{2}$$

$$\pi_{0ij} = \beta_{00j} + r_{ij}$$
$$\beta_{00j} = \gamma_{000} + \mu_j$$

Equations (1a)–(1c) and Equation (2) were used to estimate the amount of variance attributable to each type of effect.

First, the unconditional modeling partitioned the total variance in RCSF into three components: over time, σ^2; between firms, τ_π; and between industries, τ_β. The amount of total variance attributable to each level was calculated as follows:

$\sigma^2/(\sigma^2 + \tau_\pi + \tau_\beta)$ was the proportion of variance over time;
$\tau_\pi/(\sigma^2 + \tau_\pi + \tau_\beta)$ was the proportion of variance between firms;
and $\tau_\beta/(\sigma^2 + \tau^\pi + \tau^\beta)$ was the proportion of variance between industries.

The unconditional model's results are reported in Table 1. The proportion of total variance in RCSF, which occurs over time, was 19.5 ($p < 0.001$) percent, the variance between firms was 59.5 percent ($p < 0.001$), and the variance between industries was 21.1 percent ($p < 0.001$).

Second, the total variance explained by year effects was calculated by first entering those effects at the time level in Equation (2) (i.e., a reduced Equation (2) and comparing the time-level variance estimated in that reduced model of Equation (2) with that estimated in the unconditional model. As reported in Table 1, year effects accounted for 0.3 percent of the total variance in RCSF (calculated as [σ^2 unconditional model–– σ^2 reduced model of Equation (2)]/[$\sigma^2 + \tau\pi + \tau\beta$] unconditional model).

Table 1 shows that heterogeneity among firms accounted for most of the variance in RCSF as compared to the industry or time variance. Results indicate that nearly 59 % of the total variance in RCSF is accounted for between firms. Following the recommendation of Brush and Bromiley (1997), the relative importance of those effects was examined using the square roots of the variances. The percentages attributable to each effect based on the square roots are in the last column in Table 1. The relative importance of firm and industry effects came to 43.7 percent and 26 percent, respectively.

Table 1
Results of the estimation with longitudinal measures nested within firms and firms nested within industries.

	Variance estimate	Robust Std. Err.	AIC	BIC	Percentage variance	Importance
Unconditional model						
Level 1 variance (over time), e_{tij}	0.018	0.003	−844	−821	19.5 %	26.4
Level 2 variance (between firm), r_{ij}	0.056	0.004			59.5 %	46.1
Level 3 variance (between industries), u_j	0.020	0.005			21.1 %	27.5
Model incorporating year effects at Level 1						
Level 1 variance (over time), e_{tij}	0.018	0.003	−879	−843	19.0 %	24.8
Level 2 variance (between firm), r_{ij}	0.056	0.004			59.1 %	43.7
Level 3 variance (between industries), u_j	0.020	0.005			21.0 %	26.0
Total variance explained by year effects	0.001				1.0 %	5.6

Third, results show that seasonal/macroeconomic variation in RCSF, as captured by year dummies in Equation (2,) accounted for a tiny fraction of the total variance (1 %). In contrast, the time-level random error e_{tij}, which represented variance over time in RCSF, captured a substantial amount of the total variance (19.0 %), showing a similar level in variance to the industry effect (19 % and 21 %). The findings show that although the majority of the difference in the value of firms (59 %) happened across firms, industry plays an important role—around 21 %—in explaining those differences. Interestingly, about the same amount of variance (19.5 %) was attributed to time variation, which would have been reported as an error if an HLM had not been used. By explicitly determining variance over time, HLMs supported an understanding that part of the variation in RCSF could be explained by factors that vary over time.

4.2. Results and discussion

The first step in estimating the effect of independent variables is to determine the appropriate aggregation level for each variable. In other words, it is necessary to determine whether each specific factor should enter the analysis as a transient (i.e., observations of the variable in each year entering the estimation), an intransient (i.e., the average of the observations over time of the variable entering the estimation to potentially explain the cross-sectional variance), or both (Hofmann et al., 2000). Intra-class correlation (ICC) analyses are used to determine whether the aggregation of variables is granted (Bliese, 2000). In this study, ICC (1) analysis was used to assess the variance in each measure that occurred over time and in a cross-sectional manner. ICC (2) was also used to investigate the reliability of the aggregate measure (Bliese, 2000).

The results of the ICC analyses are presented in Table 2. The correlations and descriptive statistics are provided in Table 3. Although the cross-sectional standard deviation was significant for all variables, the ICC analyses suggested that the variance over time for industry munificence, industry dynamism, and MRE were 51 % (1–0.49), 33 % (1–0.67), and 27 % (1–0.73), respectively. Hence, those three variables could enter the HLM regression as transient and stable (Bliese, 2000). As more than 88 % of the variance in the other variables was explained between industries or firms rather than over time, they were adopted as aggregate measures. We combined the Equations (2), substituted the independent and control variables at their respective levels, and arrived at the main model specified in model 4 of Table 4. HLM helped account for the interdependence between firms in the same industry.

Level 1 (Time)

$$RCSF_{tij} = \pi_{0ij} + \pi_{1ij}(IndMun)_{tij} + \pi_{2ij}(IndDyn)_{tij} + \pi_{3ij}(MRE)_{tij} + e_{tij} \quad (3a0)$$

Level 2 (Firm)

$$\begin{aligned}\pi_{0ij} &= \beta_{00j} + \beta_{01j}(MRE)_{ij} + \beta_{02j}(RelSize)_{ij} + \beta_{03j}(FirmSize)_{ij} \\ &+\beta_{04j}(AvgTenure)ij + \beta_{05j}(GenImbal)_{ij} + \beta_{06j}(FirmDivers)_{ij} \\ &+\beta_{07j}(RegConcen)ij + \beta_{08j}(AvgTenure)_{ij} + r_{ij}\end{aligned} \quad (3b0)$$

Table 2
Intraclass correlations (ICC) of relevant variables.

Variable	ICC (1)	ICC (2)	Std over time	Std Cross-sectional	Transient
Industry competitiveness	0.925	0.977	0.037	0.010***	Intransient
Industry munificence	0.490	0.913	0.027	0.028***	Both
Industry dynamism	0.670	0.917	0.012	0.008***	Both
Marketing resource endowment	0.730	0.963	0.026	0.016***	Both
Innovativeness	0.883	0.960	0.794	0.289***	Intransient
Firm size	0.999	0.989	4265	134***	Intransient
Relative size of sales function	0.953	0.984	2.76	0.611***	Intransient
Mean experience at sales function	0.890	0.979	272	119***	Intransient
Diversification of firm	0.975	0.998	265	42.5***	Intransient
Gender balance of sales function	0.990	0.988	0.203	0.009***	Intransient
Concentration of sales force in region	0.999	0.999	0.515	0.012***	Intransient

$$\pi_{1ij} = \beta_{10j} \quad (3b1)$$

$$\pi_{2ij} = \beta_{20j} \quad (3b2)$$

$$\pi_{3ij} = \beta_{30j} \quad (3b3)$$

Level 3 (Industry)

$$\beta_{00j} = \gamma_{000} + \gamma_{001}(IndMun)_j + \gamma_{002}(IndDyn)_j + \gamma_{003}(IndComp)_j + \mu_j \quad (3c0)$$

$$\beta_{01qj} = \gamma_{0q0} \quad \text{For } q = 1, 2, \ldots, 8 \quad (3c1–3c8)$$

$$\beta_{k0j} = \gamma_{k00} \quad \text{For } k = 1, 2, 3 \quad (3c9–3c11)$$

As the equations show, HLM modeled the slopes of the relationships at the time and firm levels as outcome variables at the higher levels of analysis (Equations (3b0)–(3b3) and (3c1)–(3c11)). HLM also tested whether those relationships varied randomly at higher levels. As none of the other slopes was found to vary randomly, no random coefficient was included in the modeling in Equations (3b1), (3b2), (3b4), (3c1)–(3c8),

Table 3
Correlation table and descriptive statistics.

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Relative compensation of sales function	1											
2. Ind. munificence	0.309***	1										
3. Ind. dynamism	0.153***	0.035*	1									
4. Ind. competitiveness	0.005	−0.05**	−0.00	1								
5. Firm innovativeness	0.203***	0.038*	−0.01*	−0.08***	1							
6. Marketing resource endowment	−0.21***	−0.06***	−0.14***	−0.000	0.036*	1						
7. Firm size	0.015*	−0.05**	0.021*	−0.010	0.027*	0.122***	1					
8. Relative size of sales function	−0.18***	−0.10***	−0.07***	0.019*	−0.000	−0.10***	−0.030*	1				
9. Average tenure in sales function	0.315***	0.071***	0.004	0.078***	0.089***	−0.10***	0.134***	−0.11***	1			
10. Gender imbalance	0.337***	0.154***	0.114***	0.013	0.003	−0.23***	0.125***	−0.14***	0.417***	1		
11. Firm diversification	0.122***	0.066***	−0.03*	0.008	−0.020*	−0.080***	−0.010*	0.098***	0.023*	0.058**	1	
12. Regional concentration of sales force	−0.17***	−0.15***	0.034*	−0.07***	0.001	0.246***	0.140***	−0.02*	−0.11***	−0.18***	−0.15***	1
Number of observations	3621	3621	3621	3621	3621	3621	3621	3621	3621	3621	3621	3621
Mean	1.378	0.059	0.024	0.948	0.313	−6.615	963.5	0.397	4.114	0.6609	30.16	0.690
Standard deviation	0.310	0.033	0.012	0.033	1.152	1.932	3015	2.390	0.762	0.203	6.793	0.516

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

and (3c9)–(3c11) (and they are not reported in Table 4), and the model represented above reflected the best fit. That means that all other time and firm-level coefficients were modeled as fixed effects. All interaction effects were estimated at the intransient level and were obtained by multiplying the relevant (mean-centered) firm variables and (mean-centered) industry factors. Moreover, each interaction was estimated step by step in models 6 through 11 at the firm level. That is because 1) this study looked at the main effects of firm innovativeness and MRE at the firm level, 2) a significant amount of the variance in innovativeness, MRE, and industrial factors were intransient, and 3) transient factors showed no significant effect on RCSF.

The modeling allows for several types of analyses. First, HLM estimated the effect that each independent variable had on RCSF. The results of model 3 only included the transient effect as specified above and the results suggest that none of the three transient variables impacts RCSF. Model 4 consisted of all transient and intransient factors and control variables. The model statistics AIC and BIC showed a substantial improvement over models 1–3. Comparing model variance estimates between model 4 and model 1 (null model that only has the year dummies) showed that transient factors explain 6 % ([0.0181 − 0.0171]/0.0181) of over-time variance, firm-level factors explain 29 % ([0.0562 − 0.0399]/0.0562) of between-firm variance, and industry level factors explain 43 % ([0.0199 − 0.0112]/0.0199) of between-industry variance. That is a substantial improvement over the null model presented in model 1. While the improvement of AIC and BIC over model 4 after including the interaction terms in models 5–11 was substantial, it was not as significant as previously.

Consistent with H1 and H2, in model 4, innovativeness positively (0.065, $p < 0.05$) impacts RCSF, and MRE does so negatively (−0.21, $p < 0.01$). The marginal value of those effects was also notable, as one standard deviation change in innovativeness increased RCSF by 0.25 standard deviation and one standard deviation change in MRE decreased RCSF by 0.14 standard deviation. Hence, supporting the argument that more innovative organizations need a more skilled sales force to perform complex tasks such as marketing intelligence rather than direct selling tasks, sales functions in such organizations were valued at higher rates. Also, as argued, firms with greater MRE were less likely to rely on their sales function and value it at a lower level, with lower RCSF. As that relationship is well established in ambidexterity literature, no hypothesis was posited for the interaction between innovativeness and MRE in the conceptual model. However, model 5 showed a negative and significant (−0.166, $p < 0.05$) effect. That means that at high levels of innovativeness, MRE will further reduce the value of salespeople.

Model 6 tested the interaction between industry munificence and firm innovativeness. As expected in H3a, the coefficient of the interaction term was negative and significant (−0.861, $p < 0.05$). That means innovative firms in munificent industries value their sales function less. That result is in line with the idea that innovation can more freely experiment with offerings in a munificent environment (Katsikeas, Leonidou, & Zeriti, 2016). Model 6 showed that the interaction between dynamism and innovativeness increased salespeople's value for organizations (3.51, $p < 0.001$), supporting H3b in stating that innovative firms may rely on salespeople's market intelligence gathering and dissemination. Model 8 found no support for H3c, as the interaction between industry competitiveness and innovativeness yielded no significant result. Hence, unlike industry dynamism, competitiveness did not increase the value of the sales function for the more innovative firms.

Interestingly, model 9 indicated that the interaction between industry munificence and MRE positively influenced RCSF (2.65, $p < 0.05$). That means that, in support of H4a, salespeople have a high value for organizations even when they show high MRE levels in highly munificent industries. Contrary to expectations in H4b, the interactions between industry dynamism and MRE in model 10 were negative and significant (−8.47, $p < 0.05$). It appears that in dynamic industries, firms emphasize their marketing resources and therefore, the value of the sales function falls further. One reason for that unexpected finding could be managers' complacency due to the abundance of MRE in dynamic industries, which may lead them to overlook the value of the market intelligence that salespeople can contribute to the organization. Finally, in line with H4c, the interaction between competitiveness and MRE was positive and significant (2.19, $p < 0.05$), meaning firms with substantial marketing resources and under greater competitive pressure

Table 4
Hierarchical linear regression models for RCSF with robust standard error.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11
Transient factors											
Ind. munificence			0.141	−0.464	−0.468	−0.510	−0.454	−0.461	−0.444	−0.455	−0.463
			(0.186)	(0.312)	(0.309)	(0.305)	(0.309)	(0.311)	(0.309)	(0.310)	(0.312)
Ind. dynamism			0.855	−0.278	−0.275	−0.165	−0.206	−0.266	−0.321	−0.273	−0.278
			(0.436)	(0.437)	(0.435)	(0.449)	(0.431)	(0.438)	(0.438)	(0.432)	(0.436)
Marketing resource			−0.082	−0.086	−0.077	−0.087	−0.081	−0.088	−0.079	−0.060	−0.082
			(0.058)	(0.068)	(0.071)	(0.068)	(0.066)	(0.069)	(0.071)	(0.072)	(0.072)
Intransient											
Ind. munificence				1.868**	1.904***	2.003***	1.884***	1.885***	1.343**	1.870***	1.870***
				(0.543)	(0.5306)	(0.522)	(0.539)	(0.521)	(0.632)	(0.539)	(0.543)
Ind. dynamism				6.326**	5.709** (1.896)	5.917**	5.388**	6.411** (1.969)	6.266**	8.163***	6.400***
				(1.969)		(1.843)	(1.768)		(1.942)	(2.219)	(1.968)
Ind. competitiveness				0.051	0.031	0.117	0.084	0.182	0.059335	−0.0004	−0.471
				(0.334)	(0.326)	(0.323)	(0.321)	(0.304)	(0.332)	(0.341)	(0.370)
Firm innovativeness				0.065**	0.108** (0.036)	0.065**	0.075***	0.054** (0.017)	0.063**	0.064**	0.066**
				(0.024)		(0.022)	(0.020)		(0.022)	(0.024)	(0.024)
Mark res end				−0.214***	−0.199***	−0.217***	−0.200***	−0.219***	−0.208***	−0.229***	−0.213***
				(0.051)	(0.049)	(0.050)	(0.048)	(0.051)	(0.050)	(0.051)	(0.052)
Mark res end × Firm innovativeness					−0.166*						
					(0.068)						
Ind. munificence × Firm innovativeness						−0.861*					
						(0.412)					
Ind. dynamism × Firm innovativeness							3.510***				
							(0.882)				
Ind. competitiveness × Firm innovativeness								−0.708			
								(0.845)			
Ind. munificence × Mark res end									2.655* (1.309)		
Ind. dynamism × Mark res end										−8.47* (3.834)	
Ind. competitiveness × Mark res end											2.189*
											(0.954)
Relative size of sales function		−0.015***	−0.015***	−0.075**	−0.073**	−0.071***	−0.067**	−0.071**	−0.069**	−0.069**	−0.070**
		(0.003)	(0.003)	(0.026)	(0.028)	(0.026)	(0.025)	(0.026)	(0.026)	(0.024)	(0.026)
Firm size		−1.6 e−6 (2.2 e−6)	−1.6 e−6 (2.2 e−6)	−1.2 e−6 (2 e−6)	−8.6 e−7 (2.1 e−6)	−1.4 e−6 (2.0 e−6)	−1 e−6 (2.0 e−6)	−7.4 e−7 (2.1 e−6)	−1 e−6 (2.0 e−6)	−1 e−7 (2.1 e−6)	−1 e−7 (2.1 e−6)
Average tenure in sales function		0.082** (0.013)	0.082** (0.013)	0.061*** (0.012)	0.061*** (0.012)	0.062*** (0.012)	0.061*** (0.012)	0.062*** (0.012)	0.061*** (0.012)	0.062*** (0.012)	0.060*** (0.012)
Gender imbalance		0.212** (0.073)	0.211** (0.073)	0.122* (0.058)	0.128* (0.055)	0.122* (0.057)	0.125* (0.053)	0.112* (0.058)	0.135* (0.059)	0.131* (0.061)	0.121* (0.058)
Firm diversification		0.005*** (0.001)	0.005*** (0.001)	0.005*** (0.001)	0.005*** (0.001)	0.005*** (0.001)	0.005*** (0.001)	0.005*** (0.001)	0.005*** (0.001)	0.005*** (0.001)	0.005*** (0.001)
Regional concentration of sales force		−0.042* (0.021)	−0.042* (0.021)	−0.023 (0.018)	0.019 (0.019)	−0.020 (0.018)	−0.023 (0.018)	−0.025 (0.018)	−0.023 (0.018)	−0.024 (0.018)	−0.023 (0.018)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	1.321*** (0.028)	1.313*** 0.028)	1.337*** (0.029)	1.467*** (0.030)	1.467*** (0.029)	1.470*** (0.030)	1.464*** (0.029)	1.465*** (0.030)	1.467*** (0.029)	1.468*** (0.031)	1.479*** (0.030)
Variance components											
Level 1, *etij*	0.0181	0.0181	0.0180	0.01705	0.0170	0.0164	0.0167	0.0166	0.0169	0.0170	0.0170
Level 2, *rij*	0.0562	0.0483	0.0483	0.03989	0.0390	0.0400	0.0395	0.0415	0.0396	0.0396	0.0398
Level 3, *μj*	0.0199	0.0134	0.0127	0.0112	0.0107	0.0110	0.0096	0.0112	0.0112	0.0110	0.0111
Wald $\chi 2$	251**	280***	283***	268***	252***	276***	296***	265***	271***	294***	270***
AIC	−879	−1007	−1004	−1247	−1294	−1316	−1298	−1268	−1263	−1251	−1248
BIC	−843	−923	−922	−1135	−1177	−1199	−1181	−1150	−1146	−1135	−1131

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.
Notes: The results are based on two-tailed t-tests. Robust standard errors are in parentheses.

valued their sales function at a higher level.

5. Conclusions

The findings of this paper can contribute to the understanding of various scholarly inquiries. First and foremost, the study adds to long-standing literature on sales compensation. Much of the sales compensation literature is at the individual level and investigates compensation policies from three perspectives. The first examines the individual characteristics or choices that drive compensation levels (e.g., Lo et al., 2011). The second stream considers the motivational aspects of compensation policies and relies on agency theory to predict an optimal compensation structure (variable versus fixed compensation) (e.g., Misra, Coughlan, & Narasimhan, 2005). The third perspective generally investigates the task environment within the organization and looks at pay level and structure (e.g., Rouziès et al., 2009). This study is a rare case that brings a firm's strategic behavior into the sales compensation equation by introducing SMA at the firm level and the contingency factor at the industry level. Finally, the multilevel and variance decomposition analysis adopted in this study allows for the joint influences of firm-level and industry-level factors that contribute to sales compensation to be taken into account. It therefore helps bridge the micro–macro divide in marketing and sales research.

Second, the findings of the study are notable for research that looks at the interface and dynamics of the relationship between marketing and sales and its impact on the strategy and performance of a firm (e.g., Homburg et al., 2017; Keszey & Biemans, 2016; Rouziès & Hulland, 2014). An increasingly established line of argument is that an ability to integrate and reconfigure different types of resources is integral to sustained advantage (Day, 2011; Teece, 2007). Nonetheless, the lack of empirical research on the interplay between the role of the sales function and the firm's marketing resources hinders an understanding of how firms implement their marketing strategy and particularly SMA. This research speaks to scholars and practitioners seeking to connect marketing strategy and sales and offers unique insights into how SMA, in combination with key industry characteristics, influences the value of the sales function.

Third, while the influence and role of various organizational functions have a long tradition in organizational sciences (Pfeffer, 1992) and marketing (Homburg et al., 1999), little attention is paid to the value and impact of the sales function within a firm. This study takes initial steps in examining the role and influence of the sales function that can open the way for more focused and comprehensive research in this domain. Moreover, this study is one of the first to introduce and test a framework on the importance of the sales function in B2B firms. Findings show that two dimensions of SMA (innovativeness and MRE) have differing impacts on RCSF. First, firm innovativeness positively influences RCSF, indicating that innovative firms are more likely to value salespeople and rely on the sales function to advance their value offerings, which contributes to research on the innovation and sales interface (e.g., Keszey & Biemans, 2016; Wang & Ma, 2013). The finding also indicates that firm innovativeness is pivotal and can be a valuable tool for salespeople to enhance their role in the firm and improve their relative compensation, which may motivate salespeople to work in innovative firms and contribute to intelligence gathering.

Second, MRE negatively impacts RCSF. This means in relation to the welfare of the sales function, SMA may not be manifested to the desired extent, and innovativeness and MRE dimensions of SMA have the opposite effect on RCSF. This finding adds to the debate on whether exploration and exploitation dimensions of ambidexterity are complementary or mutually exclusive (cf. Gupta, Smith, & Shalley, 2006; vs Raisch & Birkinshaw, 2008). The findings indicate that MRE exhibits a contrasting influence on the value of the sales function compared to innovativeness, and firms with greater levels of MRE are likely to assign a lower value to the sales function. That is somewhat counterintuitive, in that it is contrary to the expectation that greater resource endowment would allow for greater compensation. Indeed, it shows that higher levels of MRE may actually hurt salespeople in relative terms and lead to lower levels of RCSF, as firms with high levels of MRE are likely to prioritize other functions over sales. Thus, research on the marketing-sales interface (Homburg et al., 2017; Keszey & Biemans, 2016; Rouziès & Hulland, 2014) must draw on this study's findings and approach to MRE with caution, especially concerning the position and value of the sales function.

The industry contingencies examined shed some light on how SMA interacts with industry munificence, dynamism, and competitiveness in explaining RCSF, and this paper notes the varying nature of the moderating effects of those three elements on the linkages between firm innovativeness and RCSF, and MRE and RCSF. In particular, the findings indicate that industry munificence negatively moderates the impact of both firm innovativeness and MRE on RCSF. That therefore means industry munificence weakens both the positive role of firm innovativeness and the negative role of MRE in RCSF, attenuating both effects, albeit in different directions. In contrast, industry dynamism positively moderates the impacts of firm innovativeness and MRE on RCSF. As such, it strengthens the positive role of firm innovativeness and the negative role of MRE in RCSF. That finding highlights that industry munificence and dynamism represent opposing boundary conditions in relation to the linkages between firm innovativeness and RCSF, and MRE and RCSF. Finally, industry competitiveness only moderates the link between MRE and RCSF and does so negatively. That means industry competitiveness, like industry munificence, weakens the negative link between MRE and RCSF, rendering MRE less detrimental to RCSF.

The study's findings on the moderating impacts of industry munificence, dynamism, and competitiveness build on contingency theory (Donaldson, 2001; Hoffer, 1975; Tangpong et al., 2019) and inform marketing and sales management research by connecting firm-level and industry-level factors to explain RCSF. The dynamics revealed between SMA and industry contingencies underscore the notion that firm and industry-level factors cannot be fully understood in isolation (Powell, 1992), and both need to be jointly accounted for to achieve a fuller understanding of marketing and sales phenomena. Likewise, the findings highlight that just as SMA is not one-dimensional in its effect on RCSF, industry contingencies further complicate the nexus of linkages between SMA and RCSF, which could be further explained through paradox theory (cf. Putnam, Fairhurst, & Banghart, 2016).

6. Practical implications

6.1. Implications for managers

This research shows that B2B firms tend to view marketing and sales as substitutes and where higher levels of MRE are in place, lesser value is assigned to sales functions. Sales can gather specific, detailed, and up-to-date information about markets, customers, and competitors within their territories (Malshe & Sohi, 2009), which is often unavailable to marketing. Therefore, assigning less value to the sales function may present a challenge, as developing marketing capabilities (Rapp, Ahearne, Mathieu, & Schillewaert, 2006) requires various functions to engage in coordinated information processes, which can be undermined by internal competition between sales and marketing. Furthermore, the negative interaction between MRE and firm innovativeness shows that marketing resources are hurting the value of the sales function, even in innovative firms. That may be even more detrimental to SMA, or concurrent engagement in exploitation and exploration, for firms that pursue the strategy.

In the same vein, executives should be cognizant of the contrasting dynamics between industry munificence and dynamism when setting the sales function's compensation levels. While industry munificence substitutes the effect of MRE to some extent, that may be due to the abundance of sales opportunities and hence the increase in the variable income of salespeople through commission. The problem arises in a

dynamic environment where the negative interaction between dynamism and MRE indicates that firms rely on marketing resources more than sales. Given the rapidly changing landscape in dynamic industries, managers must keep their fingers on the pulse by tapping into the specific, detailed, and up-to-date customer information that is only available to salespeople (Hughes et al., 2013). That, in turn, requires managers to afford greater attention and value to the sales function. In contrast to dynamism, however, competitiveness contributes to mitigating the negative effect of MRE on the sales function's value. In addition to MRE's long-term strategic marketing value, managers can benefit from the instantaneous market sensing and competitive intelligence that salespeople contribute in highly competitive environments (Rapp et al., 2006).

The study results indicate that innovative firms greatly value their sales functions, which potentially generate demand for their innovative offerings. Environmental dynamism further reinforces their value. However, the negative moderation of munificence diminishes the level to which sales functions are valued. That may not be an issue in the short run. However, managers may face challenges as industries mature and market exploitation becomes much more critical and managers in innovative firms should be conscious of changes in the environment in order to adapt their exploitation strategies to avoiding over-reliance on market growth (Zoltners et al., 2006).

Overall, the above discussions emphasize balancing internal conflicts and environmental and strategic considerations in RCSF. While compensation policies are mostly driven by performance enhancement within and sorting of heterogenous salespeople into sales functions, indirect cross-functional consequences that may negatively affect synergies and marketing strategies should not be neglected.

6.2. Implications for salespeople

This research highlights the caveats of MRE for salespeople considering their employment. While, on the surface, it may look like firms with high levels of MRE may have greater financial resources to compensate salespeople, the reduced relative value of the sales function more than makes up for the potential positive effect of MRE and, in fact, reduces RCSF. On the one hand, while it may be alluring for salespeople to work for firms with high levels of MRE, they should be ready for sales functions to hold a relatively weakened position in such firms, with the ensuing relatively lower compensation levels. On the other, findings highlight an additional motive for salespeople to work for innovative firms. While selling new and innovative products may be more challenging (Van der Borgh & Schepers, 2018), innovative firms will likely outperform their competitors and afford greater value to the sales function. Similarly, working in a munificent industry with greater opportunities for generating sales may be more attractive. However, innovative firms in such an environment do not value sales highly and likely rely on other strategies to outperform competitors.

7. Limitations and future research

Taken together, this study makes several notable contributions. However, it has some limitations that need to be considered. Despite utilizing a unique combination of information on the compensation of the entire organization and firm and industry factors, the data in this study is slightly dated and future research would merit from considering more recent timelines. Data accessibility meant patenting intensity and the relative number of marketing personnel were used to measure innovativeness and MRE. Future research may strengthen the findings of this study by considering other measures and dimensions of SMA to give a more complete picture of RCSF in the light of a firm's marketing strategy.

The shortening of the sales cycle and further integration of sales and marketing due to advances in digital technologies may also have implications for our findings, but that remains beyond the scope of this study. Future research may, however, look at the information-sharing network between sales and marketing employees and investigate the information flow between those functions and how that affects the sales function's relative task allocation and value.

In addition, endogenicity concerns were addressed by implementing a longitudinal multilevel approach and lagging variables. However, we did not consider the heterogeneity of salespeople in terms of their abilities and the consequent choice of working for different firms and industries. Future studies may incorporate some measure of salespeople's performance and/or correct for individual selection bias. It is also well known that employees compare their compensation within and across their functions or jobs (Shaw & Zhou, 2021) and that may have important implications for the performance of salespeople, both as individuals and as a group. Future research may therefore investigate the organizational and individual-level consequences of RCSF.

Horizontal and vertical levels of compensation inequalities—within jobs and across hierarchies—and their outcomes, such as turnover (Wang & Ma, 2013), individual performance (Shaw, Gupta, & Delery, 2002), and organizational performance (Bloom, 1999) have been the subject of extensive research. In the same vein, future research may investigate the consequences of cross-functional compensation inequalities, especially at the interface between functions involved in SMA. Given the crucial role that the marketing and sales interface plays in organizational synergies and the development of market-based capabilities, compensation policies at that interface can have important theoretical and managerial implications. Future research may investigate how compensation policies can influence various synergistic levers, such as organizational and cultural alignment and information sharing at the interface of sales and marketing.

Finally, the multilevel analysis adopted in this study that allowed us to simultaneously account for the role of firm-level and industry-level factors in RCSF may be expanded to investigate other interesting multilevel phenomena in marketing and sales. For example, digital marketing and sales have often been examined in marketing research with firms in mind. Nonetheless, industry and country-level factors may also play an instrumental role in the digital marketing and sales interface, and interesting insight may be gained by exploring their role in conjunction with relevant firm-level variables.

CRediT authorship contribution statement

Ali Reza Keshavarz: Conceptualization, Methodology, Formal analysis, Investigation, Data Curation, Writing - Original Draft, Writing - Review & Editing, Funding acquisition**Ismail Gölgeci:** Project administration, Investigation, Conceptualization, Writing - original draft, Writing - review & editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Alireza Keshavarz is a Lecturer in Marketing at Maynooth University Business School. He holds a Ph.D. in Management Sciences (Marketing) from HEC, Paris. His research interest lies in strategic marketing, strategic sales force management, and technology marketing. Alireza's main research revolves around the dynamics and competitive effects of salesforce compensations and mobility. He also investigates the gender pay and promotional gaps within salesforces in organizations.

Ismail Gölgeci, D.Sc. (Econ. & Bus. Adm.), is an Associate Professor at Aarhus University, Herning, Denmark. His research has been published in over 60 peer-reviewed academic articles and appeared in journals such as *Journal of International Business Studies, Human Relations, International Journal of Operations & Production Management, Industrial Marketing Management, Journal of Business Research, International Business Review, International Small Business Journal, International Marketing Review, Supply Chain Management: An International Journal,* and amongst others. He is an editorial review board member of the *Journal of Business Research* and senior associate editor of the *International Journal of Physical Distribution & Logistics Management*.