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ORIGINAL EMPIRICAL RESEARCH

Choreographing salesperson face-to-face visits with a buyer organization: a social network perspective

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Abstract

Salesperson face-to-face visits with buyer organizations are an inherently dynamic phenomenon and choreographing changes in those visits is important for a salesperson to identify and pursue sales opportunities. Drawing on social network theory and adopting a novel within-tie change perspective, we provide guidance regarding salesperson choreographing. We do so by focusing on how often a salesperson visits a buyer organization (i.e., change in visit intensity, visit intensity trend, duration of relations) and the functions a salesperson visits in a buyer organization (i.e., change in diversity of visited functions, change in visit concentration on top-management). Our model of salesperson choreographing is tested using data from 2934 salesperson–buyer organization relationships over seven consecutive sales periods. Random coefficient models illustrate the complex and nuanced interplay of various aspects of salesperson choreographing on sales with a buyer organization. The findings provide actionable guidance for salespeople to better manage the choreographing of limited visits.

Keywords Social network theory · Salesperson choreographing · Salesperson–buyer organization tie · Within-tie change · Sales management

Managing information transfers with a buyer organization is fundamental to salespeople's ability to successfully identify and pursue sales opportunities (Ahearne et al., 2013). This is true even for long-standing business relationships in which new sales opportunities can arise frequently. Salespeople who gather sales opportunity–relevant intelligence from their interactions with a buyer organization often perform better (Rapp et al., 2011), thereby contributing to overall firm performance.

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Despite the use of non-face-to-face digital communication technologies in the sales process (e.g., email, chat, social media), face-to-face visits, both in-person and online (e.g., video call), remain the strongest and deepest form of salesperson interactions with a buyer organization (Cano et al., 2005; Hamwi et al., 2013) and can best facilitate the transfer of information (Cannon & Homburg, 2001). However, face-to-face visits represent a relatively scarce resource available to salespeople, with reports suggesting that only between 34% (Salesforce, 2019) and 60% (PwC, 2016) of salesperson time is available to interact face-to-face with customers.

At the same time, salespeople are constantly faced with changes in the demand for and availability of face-to-face visits. These changes result from the inherent dynamism in the sales process, which is driven by external factors such as the length of sales cycles, the level of buyer organization involvement, and buyer organizations' expectations (Homburg et al., 2009; Lee, 2011), as well as from internal seller organization factors such as changes in the size of a salesperson's territory or the number of active salespeople (Homburg et al., 2008; Panagopoulos et al., 2018; PwC, 2010; Zoltners et al., 2006). These dynamics result in a constant need for salespeople to effectively manage the intensity of visits and/or the mix of functions being visited in pursuit of

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sales opportunities (Villena et al., 2011). We refer to this as salesperson "choreographing" as the salesperson's dynamic allocation of face-to-face visits with a buyer organization—in particular, how often to visit a buyer organization and which functions to visit while there.

Providing guidance as to how salespeople should choreograph their limited face-to-face visits requires two novel perspectives that complement extant literature (see Table 1). First, it requires the unit of analysis to be the salesperson–buyer organization tie, defined as the relations between a salesperson and a buyer organization (Van den Bulte & Wuyts, 2007). This tie is important because it reflects the task environment of salespeople as they plan and execute interactions with buyer organizations (Román & Martín, 2008). To date, research has mostly examined seller organization–buyer organization ties, particularly in terms of the relations between networks of representatives on both sides (e.g., Gupta et al., 2019). This focus has resulted in limited insights into how an individual salesperson should choreograph face-to-face visits with a buyer organization. Second, understanding the choreographing of face-to-face visits requires a within-tie (vs. between-tie) change perspective on both the activities and the outcomes within a salesperson–buyer organization tie over time (Bolander et al., 2017, 2021; Childs et al., 2019). A change perspective is important because choreographing is a dynamic phenomenon. While research has examined interactions between a salesperson and a buyer organization (e.g., Román & Martín, 2008), the omission of examining within-tie changes results in only limited insights for salespeople choreographing their face-to-face visits with buyer organizations.

Drawing on social network theory, we conceptualize the choreographing of face-to-face visits by a salesperson as a function of two aspects. The first, changes in how often a salesperson visits a buyer organization, is represented by change in visit intensity (frequency of face-to-face visits by a salesperson with a buyer organization; Van den Bulte & Wuyts, 2007), visit intensity trend (the direction of changes in visit intensity over time), and duration of relations (the longevity of the relationship between a salesperson and a buyer organization; Houston et al., 2004; Van den Bulte & Wuyts, 2007). The second aspect of choreographing pertains to which functions in the buyer organization a salesperson visits and is represented by change in diversity of visited functions (the various functions a salesperson visits in a buyer organization; Van den Bulte & Wuyts, 2007) and change in visit concentration on top-management (the visit intensity with a decision-making or influencing function in the context of all salesperson visits with a buyer organization; Palmatier, 2008).

Social network theory suggests the different aspects of salesperson choreographing noted above affect the opportunity and ability for information transfer as well as the value of the transferred information (Van den Bulte & Wuyts, 2007). We draw on those insights to explain how choreographing influences the recognition and management of sales opportunities and, thus, changes in sales with a buyer organization. We focus on sales with a buyer organization as a prominent and relevant sales performance outcome for salespeople. Although activity-, conversion-, and relationship-based salesperson performance outcomes have been advocated, there is scant research on these types of performance measures (vs. outcome-based measures) using secondary data (Bolander et al., 2021). Thus, outcome-based measures such as sales provide a more established foundation to implement our novel change perspective, which is predicated on the use of secondary data.

We test the effects of salesperson choreographing on the change in sales with a buyer organization by using longitudinal data from 2934 ongoing salesperson–buyer organization ties. The empirical study context is a manufacturer of a large variety of industrial tools and supplies selling directly to large business customers from multiple industries. Sales opportunities arise frequently in projects the buyer organizations are engaged in and range from small, infrequent single-product purchases to bulk or even solution purchases. As buyer organization requirements are specialized and project-specific, information needs are high and changeable. Salespeople need to understand specific projects and advise the buyer organization on product specifications required for these projects. Face-to-face visits represent the most important information transfer and sales channel for salespeople. Such face-to-face visits are planned in-person visits with representatives of the buyer organization at their project sites.

The results highlight the complex and nuanced nature of salesperson choreographing, as it leads to both beneficial and deleterious effects. For example, the positive direct effect of increases in visit intensity on sales is weakened by a positive visit intensity trend, duration of relations, and increases in diversity of visited functions but strengthened by increases in visit concentration on top-management. The negative impact of decreases in visit intensity is weakened by duration of relations but strengthened by increases in diversity of visited functions and increases in visit concentration on top-management. A negative visit intensity trend has no moderating effect on the negative impact of decreases in visits.

This research contributes to the literature in several ways. First, it is among the first to examine the tie between a salesperson and a buyer organization. Research investigating inter-firm relationships using a social network perspective has tended to focus less on the salesperson (e.g., Gupta et al., 2019; Palmatier, 2008; Tuli et al., 2010), even though salespeople arguably play the single most important role in identifying and pursuing a sales opportunity with a

Table 1 Representative sales and marketing literature grounded in social network theory

Study	Unit of Analysis		Aspects of Salesperson Choreographing							
			How Often to Visit				Which Function to Visit			
	Salesperson considered	Buyer–seller tie considered	Intensity considered	Within-tie intensity change considered	Within-tie intensity trend considered	Tie duration considered	Diversity considered	Within-tie diversity change considered	Authority considered	Within-tie authority change considered
Salesperson – Seller Organization Network										
Lam et al. (2010)	Yes (as part of ego centric network of salesperson expert peer and sales manager; and as part of indirect network of sales directors)	No (sales director direct as well as indirect report network; sales manager and salesperson expert peer direct network)	No	No	No	No	No	No	Yes (hierarchy, expertness)	No
Steward et al. (2010)	Yes (salesperson ego-centric network)	No (salesperson selling team network)	Yes (frequency, closeness, importance)	No	No	No	Yes (diversity)	No	Yes (reputation)	No
Üstüner and Iacobucci (2012)	Yes (salesperson ego-centric network)	No (salesperson regional office network)	Yes (frequency)	No	No	No	No	No	Yes (formal and informal)	No
Ahearne et al. (2013)	Yes (as part of ego-centric network of district manager)	No (district manager network of salespeople and district manager peer network)	No	No	No	No	No	No	Yes (hierarchy)	No
Ahearne et al. (2014)	Yes (as part of ego-centric network of district manager)	No (district manager network of salespeople and senior manager network of district managers)	No	No	No	No	No	No	Yes (hierarchy)	No

Table 1 (continued)

Study	Unit of Analysis		Aspects of Salesperson Choreographing							
			How Often to Visit				Which Function to Visit			
	Salesperson considered	Buyer–seller tie considered	Intensity considered	Within-tie intensity change considered	Within-tie intensity trend considered	Tie duration considered	Diversity considered	Within-tie diversity change considered	Authority considered	Within-tie authority change considered
Gonzalez et al. (2014)	Yes (relationship manager sociometric network)	No (relationship manager formal and informal intra-firm network)	No	No	No	No	No	No	Yes (formal and informal)	No
Bolander et al. (2015)	Yes (salesperson sociometric network)	No (salesperson intra-firm network)	No	No	No	No	No	No	No	No
Claro and Ramos (2018)	Yes (salesperson ego-centric network)	No (salesperson intra-firm network	Yes (frequency, closeness, importance)	No	No	No	No	No	Yes (function)	No
Rouziou et al. (2018)	Yes (salesperson ego-centric network)	No (salesperson intra-firm peer network)	Yes (frequency, closeness, importance)	No	No	No	No	No	No	No
Gonzalez and Claro (2019)	Yes (salesperson sociometric network)	No (salesperson intra-firm network)	No	No	No	No	No	No	Yes (function)	No
Claro et al. (2020)	Yes (salesperson sociometric network)	No (salesperson intra-firm peer network)	No	No	No	No	No	No	No	No
Seller Organization – Buyer Organization Tie										
Palmatier (2008)	No (buyer–sellerinter-firm direct tie network)	Yes (between representatives of buying and selling organization)	Yes (relationship quality)	No	No	No	Yes (contact density)	No	Yes (contact authority)	No

Table 1 (continued)

Study	Unit of Analysis		Aspects of Salesperson Choreographing							
			How Often to Visit				Which Function to Visit			
	Salesperson considered	Buyer–seller tie considered	Intensity considered	Within-tie intensity change considered	Within-tie intensity trend considered	Tie duration considered	Diversity considered	Within-tie diversity change considered	Authority considered	Within-tie authority change considered
Ross and Robertson (2007)	No (buyer–sellerinter-firm direct tie network)	Yes (type of ties between buying and selling organization)	No	No	No	No	Yes (compound relationships)	No	No	No
Tuli et al. (2010)	No (buyer–sellerinter-firm direct tie network)	Yes (type of ties between buying and selling organization)	No	No	No	No	Yes (alliance multiplexity)	Yes (over 8 consecutive years)	No	No
Murtha et al. (2014)	No (selling team network; selling team-buying team network)	Yes (between selling team and buying team)	Yes (frequency)	No	No	Yes (solution project phases)	Yes (matching functions)	No	No	No
Gupta et al. (2019)	No (selling organization key account team direct tie network; key account team-buying team direct tie network)	Yes (between key account team and buying team)	No	No	No	No	Yes (similar functions)	No	No	No
Salesperson – Buyer Organization Tie										
Román and Martín (2008)	Yes (salesperson ego-centric network)	Yes (between the salesperson and functions of the buying organization)	Yes (frequency)	No*	No	Yes (length)	No	No	Yes (hierarchy)	No

Table 1 (continued)

Study	Unit of Analysis		Aspects of Salesperson Choreographing								
			How Often to Visit				Which Function to Visit				
	Salesperson considered	Buyer–seller tie considered	Intensity considered	Within-tie intensity change considered	Within-tie intensity trend considered	Tie duration considered	Diversity considered	Within-tie diversity change considered	Authority considered	Within-tie authority change considered
This study	Yes (salesperson ego-centric network)	Yes (between the salesperson and functions of the buying organization)	Yes (frequency)	Yes (increases and decreases, over 7 consecutive sales quarters)	Yes (consecutive period increases and decreases)	Yes (length)	Yes (number of different functions)	Yes (over 7 consecutive sales quarters)	Yes (concentration on top-management)	Yes (over 7 consecutive sales quarters)

Table only includes literature pertaining to seller organization intra-firm networks as well as networks in seller organization–buyer organization ties. The table does not include related research on buyer organization intra-firm networks (e.g., Ronchetto et al. 1989) or firm networks (e.g., Rindfleisch & Moorman, 2001; Rowley et al., 2000; Swaminathan & Moorman, 2009; Wang et al., 2017; Wuyts et al., 2004)

*Román and Martín (2008) examine the effect of doubling visit frequency between two periods on change of sales, but their between-tie analysis does not allow for insights on within-tie change (Bolander et al., 2017, 2021; Childs et al., 2019)

buyer organization. By explicitly focusing on the salesperson–buyer organization tie, our research provides important guidance to salespeople on how the choreographing of their face-to-face visits with a buyer organization aids information transfer and ultimately increases sales.

Second, adopting a novel within-tie change perspective to understand salesperson–buyer organization relations allows us to address recent calls for longitudinal within-subject designs in sales research (Bolander et al., 2017, 2021; Childs et al., 2019). Furthermore, our study is one of the first to include the impacts of the direction of visit intensity changes (both positive and negative) as well as the trend of visit intensity changes. We thus contribute to more dynamic theories in sales and marketing (Palmatier et al., 2013).

Finally, the sales and marketing research that has taken a social network perspective has done so in a fragmented manner with respect to the aspects important to understanding salesperson choreographing. For example, while the literature on salesperson–seller organization networks focuses mainly on the authority of interaction partners, the literature on buyer–seller organization ties prioritizes their diversity. In addition, most studies focus on either how often to visit or which function to visit, rarely combining both. Our research delivers an integration of the various aspects of salesperson choreographing, thus providing salespeople with more comprehensive guidance on the management of changes in face-to-face visits to pursue sales opportunities.

Building a framework for salesperson choreographing

Social network theory is concerned with social actors (e.g., individuals, functions, organizations), the relations between them, and the associated actor benefits flowing from these relations (Borgatti & Foster, 2003). These actor benefits include access to and control over information and resource flows that can be drawn on to achieve an objective (Gupta et al., 2019; Van den Bulte & Wuyts, 2007).

In the specific context of salesperson choreographing, our focus is on a salesperson, a salesperson's relation with a buyer organization, and the information benefits associated with the face-to-face visits within the salesperson–buyer organization tie. The information benefits for a salesperson include both general knowledge about a buyer organization and specific information about sales opportunities with a buyer organization. The latter represents the primary information benefit, specifically the competitive intelligence gathered and the value proposition communicated through face-to-face visits with different functions in a buyer organization. This helps salespeople gain a better understanding of buyer organization needs and the competitor offerings being considered in the context of a particular sales opportunity.

Furthermore, it allows them to communicate benefits of the products/services they are selling and influence the decision-making process in a buyer organization. As a consequence, a salesperson can more successfully pursue a sales opportunity by creating value for a buyer organization and ultimately influencing the sales performance within the tie (Ahearne et al., 2013; Homburg et al., 2009; Hughes et al., 2013). Given that access to and management of these information flows occur within the salesperson–buyer organization tie, salespeople must be careful in choreographing their scarce face-to-face visits with a buyer organization.

The choreographing of visits within the salesperson–buyer organization tie entails both how often salespeople visit a buyer organization and which functions they visit while there. The former ("how often") provides an opportunity for information transfer, as face-to-face visits are rich occasions during which a salesperson and a buyer organization can exchange a greater depth of information. In addition, how often a salesperson visits a buyer organization affects the ability for information transfer by accumulating experiences and thus allows for a better understanding of both parties' intentions and future behaviors (Van den Bulte & Wuyts, 2007). The latter ("which functions") relates to the value of the information transferred through face-to-face visits. Not only do different functions in a buyer organization have information that can be of more or less value to a salesperson in pursuing a sales opportunity, but they can also have different influences in a buyer organization on purchase decisions. In addition, the various functions visited influences the diversity and complexity of the information transferred, as different functions in a buyer organization can possess or have access to idiosyncratic information (Palmatier, 2008; Van den Bulte & Wuyts, 2007).

Because salesperson choreographing is dynamic, its effects on sales need to be understood from a change perspective. Here, we follow recent guidance from the sales literature (Bolander et al., 2021; Childs et al., 2019) and take a within-tie change perspective for both our model variables and the related social network theory mechanisms regarding opportunity and ability for information transfer. Given the importance of tie intensity in social network theory (Van den Bulte & Wuyts, 2007), in our research framework we focus first on the main effect of changes in visit intensity by a salesperson (both increases and decreases) on changes in sales with a buyer organization and, second, on how other aspects of salesperson choreographing (i.e., visit intensity trend, duration of relations, change in diversity of visited functions, and change in visit concentration on top-management) differentially affect this effect. Appendix 19 provides an overview of all study concepts, including their definitions and operationalizations.

Change in visit intensity

Visit intensity refers to the frequency of a salesperson's face-to-face visits with a buyer organization. Visit intensity is similar to the concept of tie intensity in social network theory, an aspect that has generally been examined in terms of the frequency of contact (Murtha et al., 2014; Van den Bulte & Wuyts, 2007). A salesperson can increase or decrease visit intensity with a buyer organization by changing the frequency of face-to-face visits from period to period (e.g., increasing visits from 4 in time t to 12 in time t + 1; see Fig. 1).

Social network theory suggests that by increasing visit intensity with a buyer organization a salesperson can increase the opportunities for information transfer, while decreasing visit intensity can have the opposite effect (Van den Bulte & Wuyts, 2007). For a salesperson, increasing visits with a buyer organization can create more opportunities to uncover critical information related to the needs of and decision-making processes in a buyer organization (Palmatier, 2008). The resulting insights allow a salesperson to better identify and understand a sales opportunity as well as to better adapt, position, and connect the offering to buyer organization challenges (Hughes et al., 2013). A greater understanding of the decision-making process enables a salesperson to more directly influence buying decisions by better addressing key decision parameters and by more effectively overcoming concerns that come up throughout the sales cycle. This can result in additional cross-sell, up-sell, and pricing opportunities with a buyer organization (Palmatier, 2008). Consequently, changes in visit intensity can affect changes in sales with a buyer organization through the associated increases or decreases in the opportunity for information transfer between a salesperson and a buyer organization.

Visit intensity with a buyer organization may also relate to the ability with which a salesperson and a buyer organization exchange information. Visits can help create a shared understanding between a salesperson and a buyer organization about a sales opportunity. Social network theory suggests this is particularly important if the information relating to a sales opportunity is more complex (Van den Bulte & Wuyts, 2007), as is the case in business-to-business sales opportunities. This complexity is generally driven by the fact that organizational customers have unique needs, engage in competitive bidding, and often demand customized offerings. By increasing visit intensity, a salesperson and a buyer organization can enhance their shared understanding, while decreasing visit intensity can have a detrimental effect on their ability to exchange information about a sales opportunity. An enhanced shared frame of reference enables a salesperson to better interpret information received from a buyer organization, to more effectively target relevant

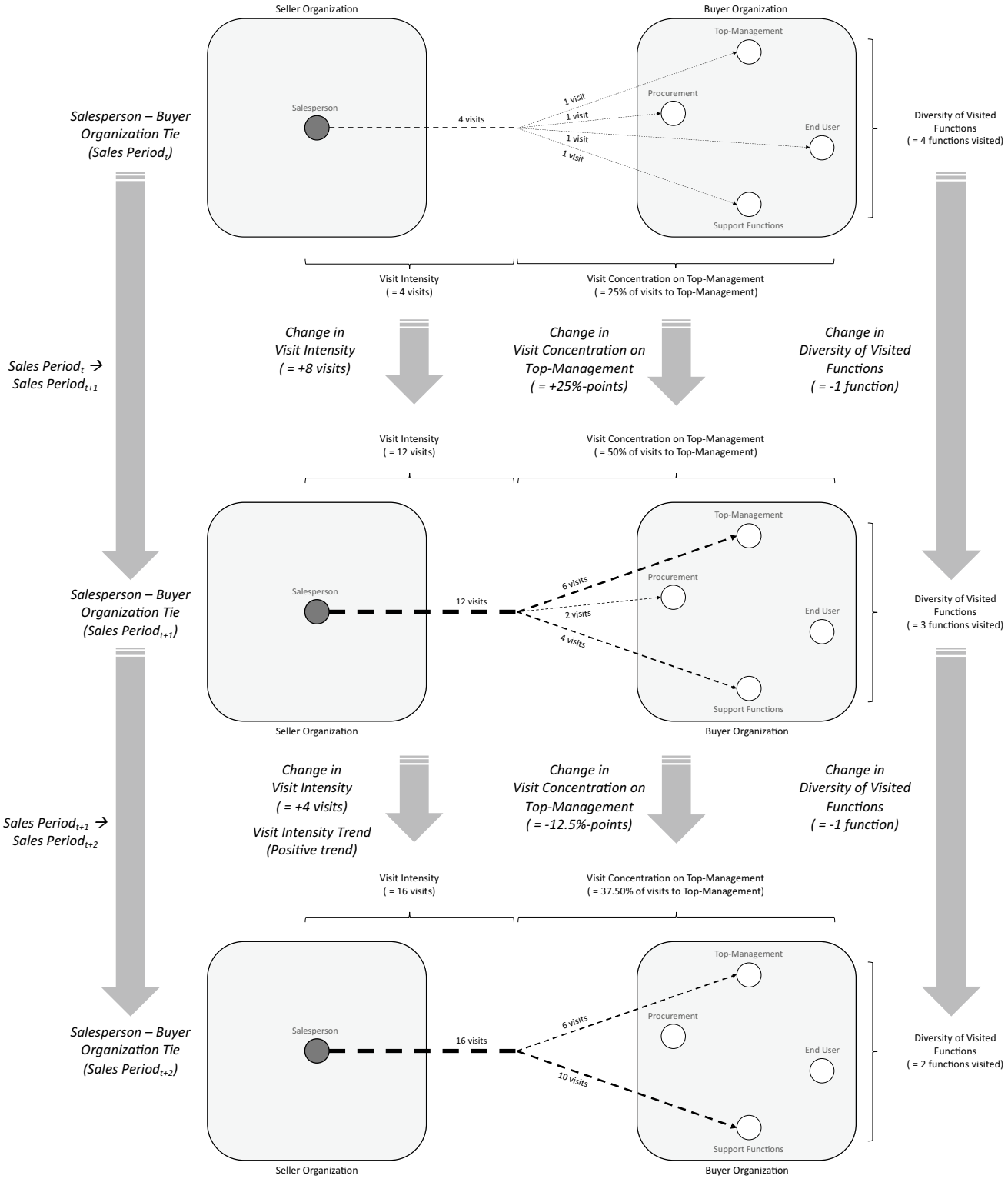

Fig. 1 Illustration of salesperson choreographing

information in a buyer organization, and to more successfully communicate as part of their selling activities (Duncan & Moriarty, 1998). As a result, a salesperson can better decide on an appropriate sales strategy (e.g., offering characteristics and pricing) and more confidently execute that strategy (e.g., sales pitch). Therefore, increases or decreases

in visit intensity can influence changes in sales with a buyer organization through the associated changes in the ability of a salesperson and a buyer organization to transfer information between each other.

Overall, change in visit intensity as part of a salesperson's choreographing visits with a buyer organization may affect both the opportunity and the ability to transfer information relating to a sales opportunity and thereby result in increases and decreases in sales with a buyer organization. Thus:

H1a: Increasing visit intensity increases sales with a buyer organization.

H1b: Decreasing visit intensity decreases sales with a buyer organization.

Visit intensity trend

Visit intensity trend refers to the direction of changes in visit intensity over time, that is the number of consecutive periods with visit intensity changes in the same direction. A salesperson's decisions about changes in visit intensity can start, continue, or discontinue a trend, which we conceptualize as consecutive periods with visit intensity changes in the same direction. For example, an increase in visit frequency of 8 (from t to t + 1) and a subsequent increase in visit frequency by 4 in the following sales period (from t + 1 to t + 2) represent a positive visit intensity trend (while consecutive decreases in the frequency of visits represent a negative visit intensity trend) (see Fig. 1).

In line with social network theory, consecutive increases in visit intensity may continue to increase the opportunity and ability to transfer information between a salesperson and a buyer organization. However, the potential to uncover new and relevant information about a sales opportunity is likely to decrease as more homogeneous knowledge stocks are developed (McFadyen & Cannella Jr, 2004). While redundant information may initially have value in terms of allowing triangulation and corroboration, the information benefits likely diminish for both the salesperson and buyer organization. This is similar to findings on team performance, in which face-to-face interactions have diminishing returns (Kennedy et al., 2011; Patrashkova-Volzdoska et al., 2003). Even if the additional information is novel and relevant to a sales opportunity, a salesperson and a buyer organization face limits in their capacity to effectively process and use increasing volumes of information. Thus, while we expect a trend of increases in visit intensity to enhance information flows between a salesperson and a buyer organization, the additional information benefits and the associated positive effect on sales with a buyer organization should diminish with a positive visit intensity trend.

By contrast, decreases in visit intensity become even more problematic when they continue a negative visit intensity trend, as the information benefits likely continue to diminish with reduced opportunity for information transfer. Reducing visit intensity results in less information about a sales opportunity being available to a salesperson and a buyer organization and make the remaining visits more critical to gather insights. In such cases, the further loss of information begins to compromise corroboration and triangulation and, in extreme cases, causes a loss of information without which entire components of critical knowledge about a sales opportunity would be missing (Burt, 2000). As a result, the validity and reliability of information about a sales opportunity is likely to deteriorate, thereby jeopardizing the ability to interpret and combine information. This can lead to a decrease in the shared understanding and information transfer between a salesperson and a buyer organization resulting in a further erosion of information flows between them. Thus, we expect the negative effect of decreases in visit intensity on sales with a buyer organization to increase with a negative visit intensity trend. Overall, we hypothesize the following:

H2a: The positive effect of visit intensity increases on sales with a buyer organization is weakened with a positive visit intensity trend.

H2b: The negative effect of visit intensity decreases on sales with a buyer organization is strengthened with a negative visit intensity trend.

Duration of relations

Duration of relations refers to the longevity of the relationship between a salesperson and a buyer organization, which we conceptualize as the length of a salesperson's business relationship with a buyer organization in years. According to social network theory, the ability of a salesperson and a buyer organization to effectively transfer information depends in part on the experiences they have had with each other (Houston et al., 2004; Van den Bulte & Wuyts, 2007).

Over the course of their relationship, a salesperson and a buyer organization exchange both general knowledge about each other and specific information about sales opportunities. Gathering general knowledge about each other is particularly important early in the relationship when a salesperson and a buyer organization are beginning to know each other. As the relationship continues, however, the need for such general information recedes, thereby shifting the focus on gaining knowledge about specific sales opportunities. Accordingly, as duration of relations increases, a salesperson and buyer organization likely face smaller knowledge gaps, can draw on an already-rich history of general information about one another, and are able to better use each

visit, due to their familiarity with each other (Houston et al., 2004; Koka & Prescott, 2002; McFadyen & Cannella Jr, 2004). Due to such improved visit utilization fewer visits are required to achieve the same results in pursuing a sales opportunity than when the duration is short. Thus, we expect the positive effect of increases in visit intensity on sales with a buyer organization to decrease as duration of relations grows longer.

By contrast, decreases in visit intensity become less problematic with a longer duration of relations, as familiarity allows both a salesperson and a buyer organization to better compensate for the fewer opportunities for information transfer. In particular, they can infer any lost information from their accumulated knowledge stock about each other as well as from similar past sales opportunities. Thus, for a salesperson, the negative effect of decreases in visit intensity on sales is weakened the longer the duration of relations with a buyer organization. In summary, we hypothesize the following:

H3a: The positive effect of visit intensity increases on sales with a buyer organization is weakened with a longer duration of relations.

H3b: The negative effect of visit intensity decreases on sales with a buyer organization is weakened with a longer duration of relations.

Change in diversity of visited functions

Diversity of visited functions refers to the various functions a salesperson visits in a buyer organization. This aspect of salesperson choreographing is a specific form of out-degree centrality (Van den Bulte & Wuyts, 2007). A salesperson can affect the diversity of visited functions by increasing or decreasing the number of functions visited in a buyer organization. Between two sales periods, for example, a salesperson can visit four different functions in a buyer organization in a given period (t) and then decide not to visit one of these functions in the following period (t + 1), thus only visiting three functions in that period. This results in a period-to-period decrease in diversity of visited functions by 1 (see Fig. 1).

Social network theory suggests that different functions in a buyer organization may have different information that together can provide a salesperson with a fuller understanding of a sales opportunity (Palmatier, 2008; Van den Bulte & Wuyts, 2007). For example, while product users can provide information on desired product features and functionality requirements, they have limited knowledge about buyer organization budgets or required delivery arrangements, something that would need to be provided by other functions. Given such idiosyncratic knowledge of different functions, the diversity of visited functions can provide valuable transfer opportunities relating to a wide range of sales opportunity-relevant information for both a salesperson and a buyer organization (Palmatier et al., 2013; Tuli et al., 2010).

However, the diversity of functions visited in a buyer organization increases the complexity of information a salesperson must assimilate. This complexity can manifest in information that is less harmonized or even contradicting. With increases in diversity, a salesperson may initially find it more difficult and demanding to interpret the information as a whole as well as know which information to prioritize. The resulting informational noise may lead to increases in salesperson cognitive load and perhaps even confusion and, in turn, reduce not only a salesperson's decision-making quality and speed but also confidence in recognizing and managing a sales opportunity (Ahearne et al., 2013, 2014).

This becomes particularly problematic when a salesperson decides to increase the diversity of visited functions while simultaneously increasing visit intensity. For example, as part of pursuing a sales opportunity, a salesperson may initially focus on a single function in a buyer organization and thus increase visits with this function. However, at a certain point, other functions may need to be brought into the process, leading to an increase of both the diversity of visited functions and visit intensity. Such a simultaneous increase is likely to result in more information than a salesperson and buyer organization may be able to successfully assimilate, at least initially (Van den Bulte & Wuyts, 2007). As a consequence, the additional informational value of diversity is negated by its added complexity. This would likely result in visit intensity increases with a more diverse set of functions being less effective for generating sales opportunity-relevant information.

In this situation, we expect that rather than using valuable information transfer opportunities to pursue a sales opportunity, increases in visit intensity by a salesperson are primarily to learn how to reconcile diverse and possibly conflicting information sources, in line with suggestions by the sales literature (Murtha et al., 2014). As long as such learning is not achieved, increases in the diversity of visited functions can reduce the effectiveness with which a salesperson and a buyer organization can use increases in visit intensity to identify and manage a sales opportunity. We therefore expect the positive effect of increases in visit intensity on sales with a buyer organization to decrease when simultaneously increasing the diversity of visited functions.

Similarly, increasing diversity of visited functions can further compound the information losses from decreasing visit intensity. In other words, for a salesperson and a buyer organization that are already dealing with less information transfer opportunities due to a decrease in visit intensity, an increase in diversity of visited functions may result in a

more "noisy" and complex exchange of information, thus leading to an additional information-transfer challenge. This situation can further compromise the selling activities of a salesperson and thus interfere with moving along a sales opportunity with a buyer organization. We therefore expect the negative effect of decreases in visit intensity on sales with a buyer organization to increase when simultaneously increasing the diversity of visited functions. Thus:

H4a: The positive effect of visit intensity increases on sales with a buyer organization is weakened when the diversity of visited functions increases simultaneously.

H4b: The negative effect of visit intensity decreases on sales with a buyer organization is strengthened when the diversity of visited functions increases simultaneously.

Change in visit concentration on top-management

Visit concentration on top-management refers to the visit intensity with top-management relative to all salesperson visits with a buyer organization (Román & Martín, 2008; Ronchetto Jr et al., 1989). This aspect of salesperson choreographing is similar to contact authority (Palmatier, 2008) and the social capital of network partners (Van den Bulte & Wuyts, 2007). A salesperson can affect the strength of the relations with top-management by increasing or decreasing the concentration of their visits with this function relative to other functions visited in the buyer organization. For example, if the salesperson's frequency of visits with top-management is 1 out of 4 visits in a certain period (t), visit concentration on top-management is 25%. If, in the following period (t + 1), the salesperson decides to increase visits to top-management to 6 out of 12 visits, the resulting period-to-period increase represents a doubling of visit concentration on top-management (see Fig. 1).

Social network theory suggests that functions with authority in a buyer organization, such as top-management, have at their disposal decision-relevant information and can exert an influence on buying decisions (Palmatier, 2008; Van den Bulte & Wuyts, 2007). Thus, increasing the concentration of visits on top-management in a buyer organization can be beneficial when increasing visit intensity. Such simultaneous increases provide a salesperson with more direct and controlled information transfer opportunities with this important function (Román & Martín, 2008; Ronchetto et al. 1989). This not only allows for a better understanding of key buying decision-making parameters but also creates opportunities to find out early about decisions made within a buyer organization (Palmatier, 2008). Increasing visit concentration on top-management should also help better address this function's priorities, overcome buying decision uncertainties and concerns, and thus allow a salesperson to communicate a more relevant and timely value proposition directly to a function that can affect purchase decisions (Palmatier, 2008). As a result, the information benefits associated with increases in visit intensity can be enhanced when the opportunity for information transfer is created directly with top-management (Van den Bulte & Wuyts, 2007).

In addition, concentrating face-to-face visits on top-management can also lead to faster and stronger development of a shared understanding with this function. Such understanding can enhance the ability of a salesperson and a buyer organization to share information and thus help the salesperson better identify and pursue a sales opportunity. Overall, a salesperson is in an advantageous position to leverage the positive effect of increases in visit intensity on sales with a buyer organization when visit concentration on top-management is increased simultaneously.

We expect similar effects of visit concentration on top-management when a salesperson reduces the visit intensity with a buyer organization. The fewer information transfer opportunities available to a salesperson and a buyer organization, the more important the value of the transferred information becomes, something that can be enhanced when increasing visit concentration on top-management. Furthermore, increasing visit concentration may help a salesperson maintain the ability to exchange information with this important function, even if they reduce the visit intensity with a buyer organization as a whole. As a result, the salesperson is in a better position to use the remaining occasions for information transfer to pursue a sales opportunity. Consequently, the salesperson may buffer the negative effects of visit intensity decreases on sales with a buyer organization when simultaneously increasing the visit concentration on top-management. Thus:

H5a: The positive effect of visit intensity increases on sales with a buyer organization is strengthened when the visit concentration on top-management increases simultaneously.

H5b: The negative effect of visit intensity decreases on sales with a buyer organization is weakened when the visit concentration on top-management increases simultaneously.

Figure 2 provides an overview of the hypothesized model.

Method

Sample and data collection

To empirically test our hypotheses, we relied on longitudinal customer relationship management (CRM) data for 2934 business-to-business customer relationships over seven

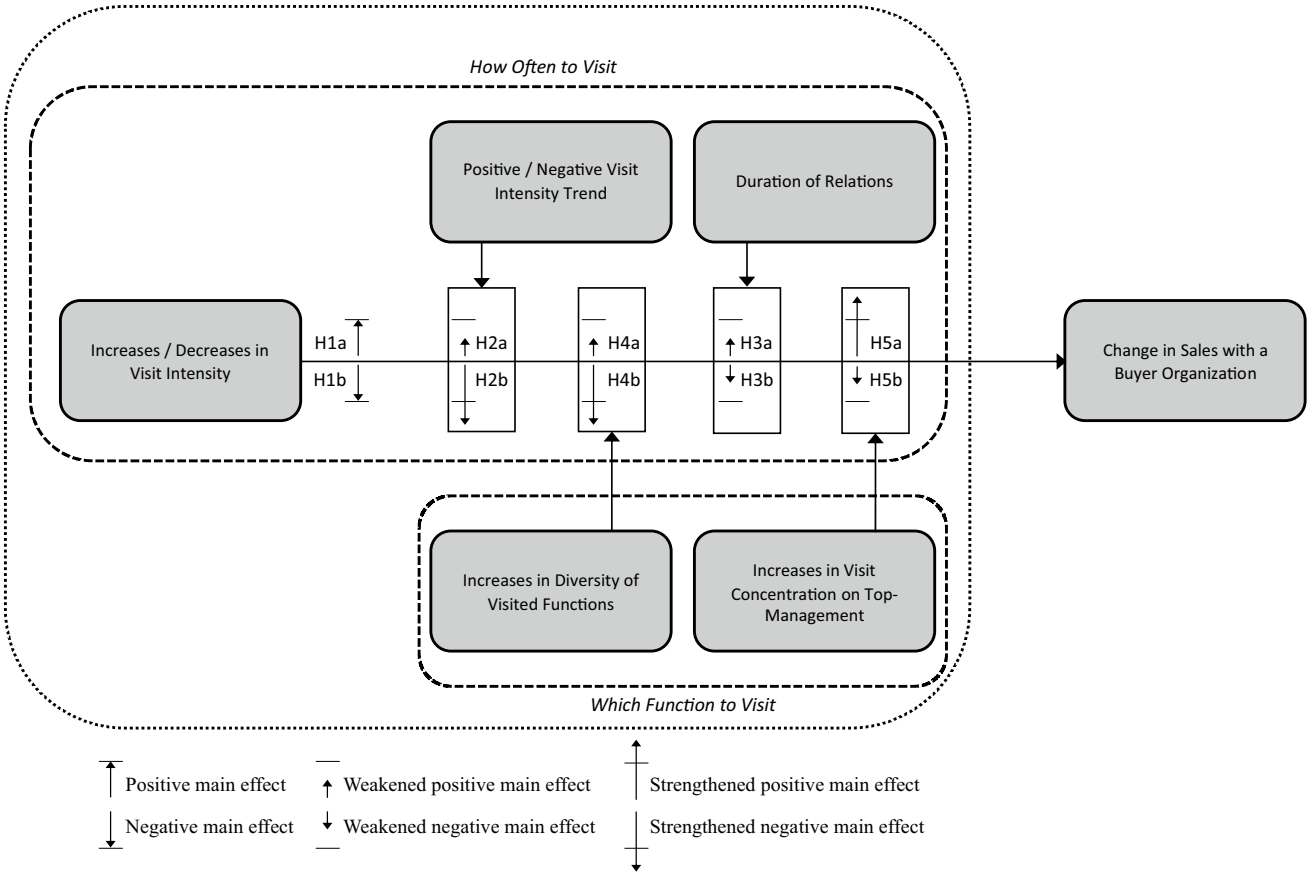

Fig. 2 Framework linking salesperson choreographing to change in sales with a buyer organization

consecutive quarters from a global industrial supplies manufacturer firm headquartered in Northern Europe. In this selling context, customer purchases are project-based (i.e., time-limited, site specific), and range in scale from individual tool procurement to large solution packages (e.g., project inventory fulfillment, maintenance, fleet management). Because these projects often have unique requirements, salespeople must understand each buyer organization's unique needs and advise on the required product specifications. As a result, face-to-face visits represent the most effective channel for salespeople to exchange information with a buyer organization for potential purchases in this complex environment.

The dataset was gathered from the focal firm's extensive CRM database and comprises both firm and salesperson input used to track existing customer relationships in terms of customer interaction activity, characteristics, and performance. Customer interactions were exclusively carried out through channels controlled by the focal firm, and only one salesperson was responsible for each buyer organization. Face-to-face visits by salespeople were largely aimed at identifying or pursuing sales opportunities, both before and after quotations about a specific sales opportunity had been made. Such visits are usually 'prepared' in the sense that a clear agenda had been agreed beforehand with the buyer organization. Other kinds of visits, for example servicing or training-related visits, were done by service engineers and not by the salesperson. All buyer organizations had relationships with the focal firm before the start of data collection and vary by size and industry. Sales were frequent, as product and project life cycles were comparatively short. The focal firm uses quarters as their relevant sales periods.

Measures

Visit intensity and visit intensity trend Our focal research questions examine the effect of salespeople increasing or decreasing visit intensity (i.e., in-person face-to-face visits with someone in the buyer organization). We use the number of salesperson visits across periods in our dataset to operationalize both change in visit intensity and visit intensity trend. First, we capture visit intensity using the number of salesperson visits with a buyer organization in a given sales quarter. We use the difference between the visits in the previous quarter and the visits in the current quarter (measured as a percentage) to capture change in visit intensity. We then computed dummy variables to code whether change in visit

intensity each quarter was positive or negative allowing us to capture visit intensity increases or decreases. Second, using these dummy variables, we followed previous research (Boichuk et al., 2014) to measure positive visit intensity trend by summing the number of consecutive sales quarters a salesperson increased their visit intensity with a buyer organization. Similarly, negative visit intensity trend was measured by summing the number of consecutive sales quarters a salesperson decreased their visit intensity.

Diversity of visited functions, visit concentration on top-management, and duration of relations We operationalized diversity of visited functions by measuring the out-degree centrality of salesperson visits across various functions in each buyer organization during a given sales quarter. The CRM database tracked the number of face-to-face visits each salesperson had with one of four functions within each buyer organization. These functions are (1) top-management, (2) purchasing, (3) end users, and (4) technical experts (e.g., engineering, finance). For each period, we aggregated the visits to each of these functions and formed an out-degree centrality score based on how many functions were visited by the salesperson (i.e., between 0 and 4). To measure visit concentration on top-management, we constructed an index of the proportion of visits with top-management relative to the total visits across all functions for each quarter. For example, a salesperson with a total of eight visits, two of which were with top-management, will have a score of 2/8 = .25. Thus, a higher score represents a greater concentration of visits with top-management. This operationalization is consistent with research on social network efficiency (Swaminathan & Moorman, 2009), which measures the proportion of distinct entity relations among the total number of relations. Similar to our measure of change in visit intensity, we capture the change of each variable (diversity of visited functions, visit concentration on top-management) from period to period by capturing the difference between the previous quarter and the current quarter. Our final aspect of salesperson choreographing was duration of relations, captured using the number of months a salesperson has had an active relationship with the buyer organization.

Covariates Previous research shows that certain relationship characteristics such as buyer organization size and behavioral loyalty can play a role in explaining sales with a buyer organization (Harmeling et al., 2015). Therefore, we also include buyer organization size (i.e., the number of employees), as well as buyer organization behavioral loyalty (i.e., salesperson's perceived frequency of transactions for each buyer organization) within our model to provide more robust estimates. Using the focal firm's CRM database, salespeople classified buyer organizations as (1) inactive (one transaction in last three years), (2) passive (one transaction per year), (3) active (more than 1 transaction per year), (4) frequent (more than five transactions per year), or (5) engaged (more than eleven transactions per year). Additionally, we include the average number of visits (over all periods) invested in each buyer organization to control for the possibility that some of them may receive more visits in general. Because these variables do not change over time, they fall into the level-2 portion of our model.

Dependent variable We measured change in sales by indexing the archival sales tracked quarterly for each buyer organization. Similar to Tuli et al. (2010), we use the log of sales and calculate the change in sales (i.e., sales growth) as the difference between the log of sales to a buyer organization at time t and the log of sales to the buyer organization at time (t – 1).

Analytical approach

Given our focus on the relationship between change in visit intensity and change in sales with the buyer organization, we take a first-differences model approach (Tuli et al., 2010) in which a change in the log of sales is our dependent variable and change in visit intensity is our focal independent variable. One of the advantages of a first-differences approach is the ability to remove bias from unobservable time-invariant factors. We began the formal analysis by running an intercepts-only two-level model (i.e., allowing intercept to vary) to determine whether sales growth exhibited variance both within and acros s buyer organizations. As expected, results showed that less than 1% of sales growth variation was attributable to between-level factors and we therefore do not include a random intercept in the model. Next, we specified a model which included change in visit intensity alongside all time-varying covariates. However, a potential limitation rests on the assumption that the relationship between visit intensity change and sales growth is constant for all buyer organizations. Thus, we also specified a model that allowed the slopes of visit intensity change to randomly vary. Results indicate that such a model fits better than a model that fixes the slope to a constant value for all buyer organizations ($\chi^2(2) = 86.06$, $p < .01$). This evidence provides support for including variables at level-2 to explain the proportion of variance in the slope of visit intensity change. We therefore specify that the influence of our focal time-invariant variable (i.e., duration of relations) affects the slope for change in visit intensity and thus is also included in our model. We therefore analyze the data within a two-level framework where level-1 variables represent time-varying measures alongside level-2 variables (i.e., time-invariant), which vary across each buyer organization (see Appendix 20). Following recommendations by Bliese and Ployhart

(2002), we use random coefficient modeling techniques in R using the "nlme" package to test our model (Bliese, 2013). Further, because of the temporal nature of our within-buyer organization data, the error terms associated with adjacent sales periods could potentially be correlated beyond the most recent period, making it possible for within-buyer organization errors to exhibit autocorrelation. We performed nested model tests to account for this potential error structure and found that an autoregressive error structure fits significantly better than the model assuming no autocorrelation ($\Delta\chi^2(1) = 2995.78$, $p < .01$). Thus, all results stem from an autoregressive error structure model.

Endogeneity

Although a first-differences specification reduces the potential influence of autocorrelation and time-invariant unobservable factors, it does not directly address any remaining endogeneity concerns. Because salespeople might increase visits with an expectation of higher levels of performance, visit intensity may well be endogenous to the model. We used the control function approach to mitigate this potential endogeneity bias (Petrin & Train, 2010; Wooldridge, 2010). We computed the residual term of changes in visit intensity by regressing it against the independent variables in the model and an instrumental variable (IV) that met the requirements of relevance (i.e., significant correlation with changes in visit intensity) and exclusion restriction (i.e., uncorrelated with the error term in the outcome variables) (Wooldridge, 2010). We use peer visit influence as our primary IV given the potential for peer behavior to influence a salesperson's own visits. We define salesperson peers as those salespeople that operate in the same region as the focal salesperson. Specifically, for each salesperson in each sales quarter, peer visit influence measures the average change in frequency of visits of the salesperson's peers from the previous quarter. To meet the requirement of relevance, we expect that salespeople face similar market conditions and share similar expectations of overall visit levels as their peers. At the same time, we meet the exclusion restriction (i.e., we do not expect peer visits to be correlated with sales growth) given that salespeople cannot observe how their peers allocate visits across their buyer organization portfolio. As expected, the IV is correlated with changes in visit intensity ($r = .15$, $p < .01$) but not with sales growth ($r = .003$, $p > .60$). Results from additional analysis further support the use of this IV. The 'weak-instruments' test shows that peer visit influence is significantly correlated with changes in visit intensity ($F = 171.69$, $p < .01$), the Sargan test showed that the IV is exogenous ($F = .34$, $p > .10$), and the Wu–Hausman test supported that there was significant correlation between the error term in changes in visit intensity and sales growth ($F = 10.23$, $p < .01$). Accordingly, we corrected for the endogeneity bias by including the residual term as a covariate in our models.

Results

Impact of visit intensity increases and decreases

Table 2 provides the descriptive statistics and the correlation matrix of the study variables used in the empirical models. We estimate the impact of visit intensity increases (H1a) and decreases (H1b) simultaneously on sales growth alongside all covariates and the IV (see Appendix 21). Results show that the association between visit intensity increases and sales growth is positive and significant ($b = 0.19$, $p < .01$) while the association between visit intensity decreases and sales growth is negative and significant ($b = -.94$, $p < .01$), thus providing support for both H1a and H1b. We also conducted additional post-hoc analyses to determine the differential effect of positive and negative changes following a similar approach to Anderson, Fornell, and Rust (1997, p. 138). These tests reveal that the difference in slopes for visit intensity increases and decreases is significant ($b = .97$, $t = -12.95$, $p < .01$), providing evidence that decreases in visit intensity have a greater negative effect on sales growth than the positive effect of increases in visit intensity of equal magnitude.

Table 2 Intercorrelation table and descriptive statistics

Variables		1	2	3	4	5
1	ΔVisit Intensity	1.00	.03	.20	.06	.10
2	ΔVisit Concentration on Top-Management	.17	1.00	.30	.05	−.09
3	ΔDiversity of Visited Functions	.46	.34	1.00	.26	−.03
4	ΔSales	.10	.03	.10	1.00	−.01
5	Duration of Relations					1.00
	M	.61	.03	.07	.03	92.01
	SD	2.50	.35	.86	2.84	28.59

Correlations below the diagonal are time varying; Correlations above the diagonal are aggregated for each buyer organization and are time invariant

Boundary conditions of visit intensity increases and decreases

To avoid concerns related to multicollinearity across our proposed interactions, we model the effects of visit intensity increases and decreases in separate empirical models. Table 3 presents a summary of the estimated results for the visit intensity increase and visit intensity decrease models. Upon entering the moderation terms, we found significant fit improvements for both models providing strong support for the inclusion of the interactions.

H2a posits that salespeople who consecutively increase visit intensity (i.e., positive visit intensity trend) will weaken the effect of visit intensity increases on sales growth, while H2b posits that a negative visit intensity trend will strengthen the effect of visit intensity decreases on sales growth. Results show that an increase in visit intensity has a weaker impact on sales growth after increasing visit intensity in the previous period (b = −.032, p < .01) while the effect of a decrease in visit intensity is not impacted by decreasing visit intensity in the previous period (b = .016, p < .10). Thus, a positive visit intensity trend weakens the effect of visit intensity increases on sales growth in support of H2a (Panel A of Fig. 3). However, our results do not support H2b.

H3a posits that salespeople with longer duration of relations with a buyer organization will weaken the effect of visit intensity increases on sales growth. Similarly, H3b posits that longer duration of relations will also weaken the effect of visit intensity decreases on sales growth. Results show that both increases and decreases in visit intensity have a weaker impact on sales growth for salespeople with longer relationship durations (b = −.041, p < .01; b = .269, p < .01). Thus, our results support both H3a and H3b (Panel B of Fig. 2, and Panel A of Fig. 4).

H4a posits that salespeople who increase the diversity of visited functions weaken the effect of visit intensity increases on sales growth, while H4b posits that increasing

Table 3 Effects of visit intensity changes on sales growth

Dependent Variable: $\Delta Sales_{it}$	Visit Intensity Increase Model				Visit Intensity Decrease Model			
	Main Effects		Moderation Effects		Main Effects		Moderation Effects	
	B	(SE)	B	(SE)	B	(SE)	B	(SE)
Time-Invariant Effects								
Intercept	.091	.034	.055	.036	−.082	.066	−.042	.067
Duration of Relations$_i$	−.027*	.013	.002	.016	−.017	.015	−.065**	.019
Buyer Organization Size$_i$	−.013	.015	−.012	.015	−.031*	.014	−.027	.014
Average Visits$_i$	−.036*	.018	−.042*	.018	.022	.024	.014	.024
Buyer Organization Behavioral Loyalty$_i$	.179**	.020	.178**	.020	.164**	.017	.166**	.017
Time-Varying Effects								
ΔVisit Intensity$_{it}$	.142**	.015	.313**	.027	−.799**	.077	−1.079**	.126
ΔVisit Concentration on Top-Management$_{it}$	−.091	.062	−.170*	.067	.091	.082	.139	.089
ΔDiversity of Visited Functions$_{it}$	.643**	.100	.682**	.101	.740**	.120	.688**	.119
ΔVisit Intensity Trend$_{it}$	.021	.018	.034	.019	−.415**	.085	−.340**	.087
Interaction Effects								
Δ(Visit Intensity$_{it}$ X Visit Concentration on Top-Management$_{it}$)			.055*	.025			−.434**	.131
Δ(Visit Intensity$_{it}$ X Diversity of Visited Functions$_{it}$)			−.064**	.010			−.282**	.068
Δ(Visit Intensity$_{it}$ X Visit Intensity Trend$_{it}$)			−.032**	.007			.016	.067
ΔVisit Intensity$_{it}$ X Duration of Relations$_i$			−.041**	.010			.269**	.060
Endogeneity Correction								
Residual$_{(\text{Change in visit intensity})}$	−.353**	.089	−.353**	.088	3.114**	.686	2.523**	.693
AIC	98,393.71		98,362.04		98,291.81		98,258.03	
BIC	98,532.65		98,512.68		98,410.75		98,395.68	
Log Likelihood (LL)	−49,181.86		−49,162.02		−49,130.91		−49,110.02	

$$\Delta S_{it} = \beta_0 + \gamma_{10}\Delta VI_{it} + \beta_2\Delta TM_{it} + \beta_3\Delta D_{it} + \beta_4\Delta Trend_{it} + \gamma_{51}Dur_i + \gamma_{52}Size_i + \gamma_{53}AvgVisit_i + \gamma_{54}Loyalty_i + \beta_5(\Delta VI_{it}X\Delta TM_{it}) + \beta_6(\Delta VI_{it}X\Delta D_{it}) + \beta_7(\Delta VI_{it}X\Delta Trend_{it}) + \gamma_{11}(\Delta VI_{it}XDur_i) + u_{1i}\Delta VI_{it} + \Delta\epsilon_{it}$$

**p < .01, *p <. 05. Note: S = sales from buyer organization, VI = visit intensity increase (decrease) in the visit intensity (decrease) model, TM = visit concentration on top-management, D = diversity of visited functions, Trend = positive (negative) visit intensity trend for the increase (decrease model), Dur = duration of relations

the diversity of visited functions strengthens the effect of visit intensity decreases on sales growth. Results show that an increase in both visit intensity and diversity weakens sales growth ($b = -.064$, $p < .01$) while a decrease in visit intensity and increase in diversity amplifies the loss in sales growth ($b = -.282$, $p < .01$). Thus, our results support H4a and H4b (Panel C of Fig. 3, and Panel B of Fig. 4).

H5a posits that salespeople who increase visit concentration on top-management strengthen the effect of visit intensity increases on sales growth, while H5b posits increasing visit concentration on top-management weakens the effect of visit intensity decreases on sales growth. Results show that increasing both visit intensity and concentration on top-management increases sales growth ($b = .055$, $p < .05$) while a decrease in visit intensity and increase in concentration on top-management amplifies the loss in sales growth ($b = -.434$, $p < .01$). Thus, a higher concentration of visits with top-management strengthens the effect of visit intensity increases on sales growth in support of H5a. However, opposite to our expectations, increasing concentration on top-management strengthens the effect of visit intensity decreases on sales growth, which does not support H5b (Panel D of Fig. 3, and Panel C of Fig. 4).

Discussion

Theoretical contributions

Salespeople arguably play the most important role in the seller organization with regard to managing the transfer of information relevant for pursuing sales opportunities with buyer organizations. However, to date, scant research has taken a social network theory approach to analyze the salesperson–buyer organization tie. While research on inter-firm ties (Gupta et al., 2019; Palmatier, 2008; Tuli et al., 2010) and inter-firm networks (Rindfleisch & Moorman, 2001; Rowley et al., 2000; Swaminathan & Moorman, 2009) offers some guidance on how salespeople can choreograph their visits with buyer organizations, this guidance is tentative and equivocal, and what works well in an inter-firm network might not necessarily work well in an inter-firm tie or, more specifically, in the tie between a salesperson and a buyer organization. For example, while the intensity and the diversity of the tie can serve as substitutes in the inter-firm network (Rowley et al., 2000), these tie characteristics are complements in the tie between a seller and a buyer organization (Palmatier, 2008). Consequently, extant literature provides only limited guidance on how salespeople can manage changes in face-to-face visits with buyer organizations and

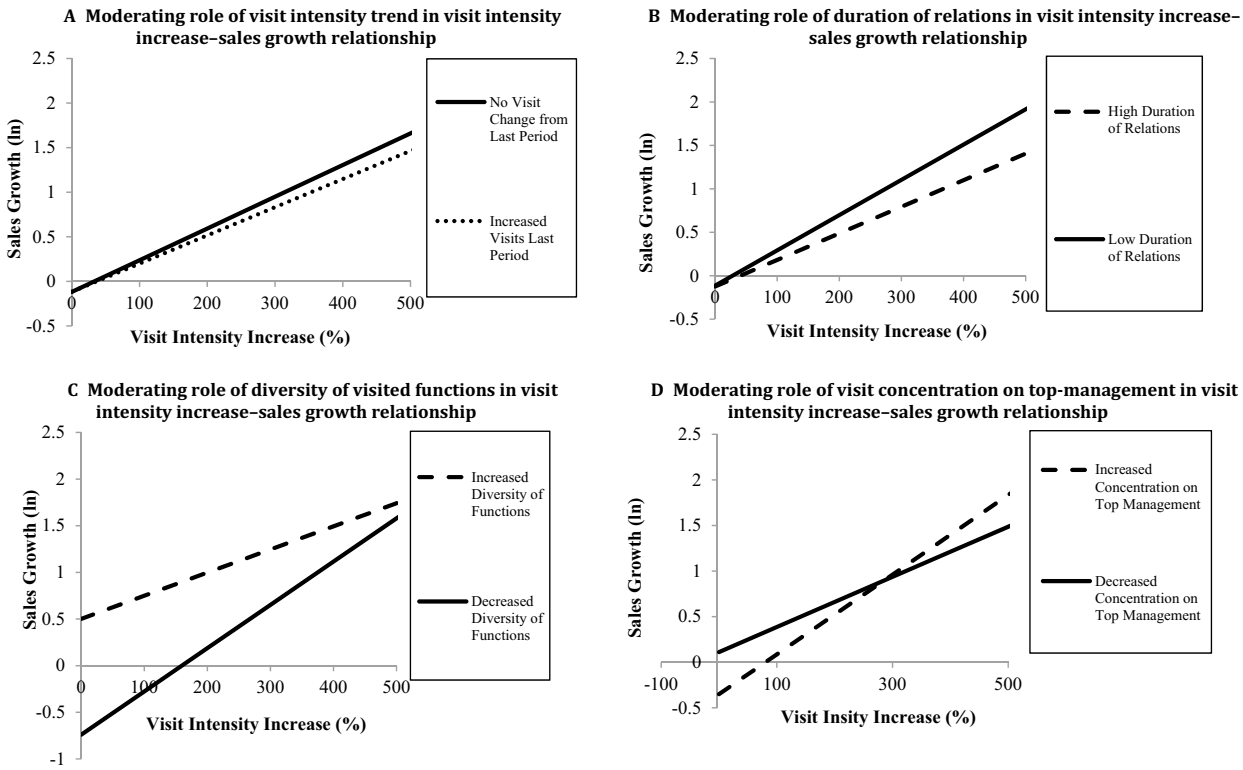

Fig. 3 Moderation effects of visit intensity increases on sales growth across other aspects of salesperson choreographing

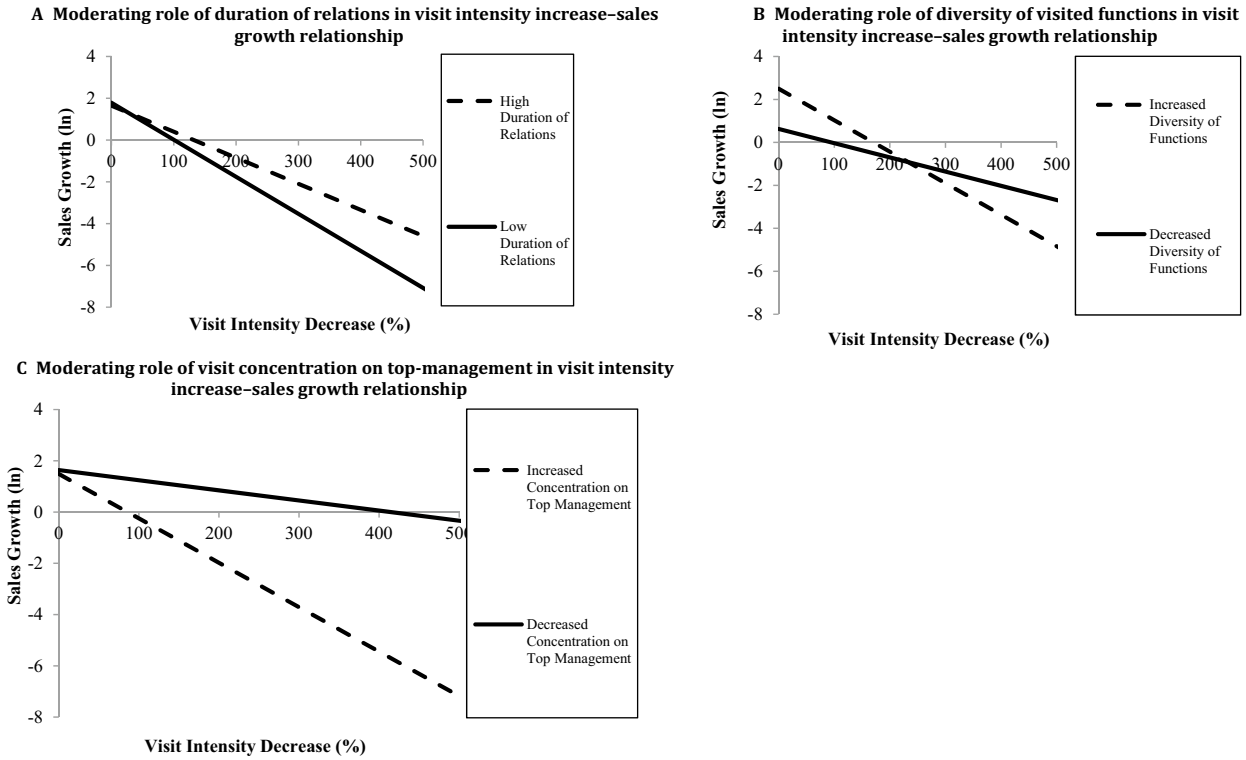

Fig. 4 Moderation effects of visit intensity decreases on sales growth across other aspects of salesperson choreographing

how this may affect changes in sales. As a way forward, we introduce the concept of salesperson choreographing. To do so, we focus on the salesperson-buyer organization tie as our unit of analysis and draw on social network theory to identify distinct aspects of choreographing that salespeople can manage effectively in their face-to-face visits with a buyer organization.

Our research further advocates a novel within-tie change perspective on salesperson–buyer organization interactions because change is typical in such settings and changes in certain interaction characteristics can matter as much as, and sometimes more than, the actual levels of these characteristics themselves (Harmeling et al., 2015; Palmatier et al., 2013). Thus, our research supplements previous efforts that have taken a more static approach to understanding the ties between seller and buyer organizations. In our context, salesperson face-to-face visits with the buyer organization are an inherently dynamic phenomenon and managing their changes is part of the day-to-day reality of a salesperson's task environment. As soon as the salesperson has determined and calibrated a seemingly optimal visit pattern with a specific buyer organization, this pattern is likely to change again (from salesperson, buyer, or seller organization dynamics) and, as such, will remain a moving target for the salesperson.

This dynamic perspective allows us to take into consideration the direction of changes and to uncover effects that would remain masked if not distinguishing between positive and negative changes (Zhang et al., 2016). For example, we find that negative changes in visit intensity with a buyer organization are more impactful than positive changes of the same magnitude, for which explanations are likely beyond social network theory (Kahneman & Tversky, 1979). This result accentuates the importance of understanding how the effect of positive changes can be better leveraged and how the effect of negative changes can be buffered. Specifically, results suggest diversity of visited functions and visit concentration on top-management can help moderate the positive and negative effects of changes in visit intensity.

Furthermore, these moderating influences can differ when using a within-tie change perspective (at the salesperson level) compared to a static perspective (at the firm level) (Gupta et al., 2019; Palmatier, 2008). Specifically, increases in diversity of visited functions are detrimental for both increases and decreases in visit intensity. However, these moderating influences are not necessarily the same for positive and negative changes in visit intensity. Our findings show that increases in visit concentration on top-management can be beneficial when salespeople increase the visit intensity but, in contrast with our expectations, can be detrimental when they decrease the visit intensity.

Possible explanations for this unexpected effect likely reside somewhat outside the information transfer

mechanisms we draw on and what can be supported with the data available to us. One possible explanation may be that when a salesperson increases visits with top-management but, at the same time, decreases visit intensity with the buyer organization overall, the buyer organization might perceive this decrease as a lessening of the salesperson's commitment (Heide & Miner, 1992). If, consequently, top-management views the salesperson as expecting them to take on a sponsoring role, they may perceive such actions by the salesperson as exploiting their goodwill, which can result in less willingness to engage in and be responsive to selling activities. Uncovering such differential mechanisms provides further support that important insight can be gleaned by distinguishing between the direction of changes. Our research offers initial steps to understand the dynamic management of the salesperson–buyer organization tie.

Finally, despite identifying characteristics of the longer-term development of networks or ties as important aspects of social network theory (Houston et al., 2004; Van den Bulte & Wuyts, 2007), extant sales and marketing literature has only begun considering relevant aspects such as tie trend in theoretical and empirical work (Palmatier et al., 2013). Our findings indicate that the choreographing aspects of both the longer-term duration of relations and the more medium-term visit intensity trend moderate changes in sales with a buyer organization and thus provide boundary conditions for the positive and negative effects of changes in visit intensity. Specifically, we find that duration of relations suppresses both the positive and negative effect of changes in visit intensity. However, such moderating influences are not always relevant for both positive and negative changes in visit intensity. We find that a positive visit intensity trend can weaken the effect of positive changes in visit intensity, while a negative trend has no effect on negative changes in visit intensity.

This unexpected finding for decreases in visit intensity may be explained by two countervailing mechanisms that may cancel each other out. On the one hand, and as hypothesized, less relevant and important information may be available with a negative visit intensity trend. On the other hand, and somewhat beyond social network theory and what can be supported with our data, the buyer organization may have adapted to the negative trend, aligned its expectations, and thus become desensitized. These countervailing mechanisms may be activated by, for example, the phase of the sales cycle or the phase of the life cycle of the salesperson-buyer organization relationship, again factors beyond the empirical setting of our study.

Managerial implications

We suggest choreographing as a practical way for salespeople to plan and implement changes in face-to-face visits with buyer organizations. Our framework explicitly acknowledges the practical reality that salespeople often have to change their pattern of face-to-face visits with buyer organizations, and our results show that the outcome of such changes is not always straightforward. Increases in visit intensity with a buyer organization (i.e., frequency of visits) represent an effective lever available to salespeople to increase sales with a buyer organization. However, salespeople should recognize that doing so may lead to reductions in face-to-face visits with other buyer organizations, something that can expose salespeople to sales performance risks. In fact, our results show that decreases in visit frequency may be more detrimental for sales growth than the positive effect of equivalent increases in the frequency of visits.

Fortunately, results suggest that salespeople have additional levers available to them to improve sales with buyer organizations, when both increasing and decreasing frequency of visits–in particular, their ability to control which function to visit in a buyer organization. For example, the beneficial effect of increasing visits with a buyer organization can be boosted by reducing the number of functions visited or by focusing those visits on top-management (or other functions involved in the decision-making process). However, salespeople should keep in mind that visiting important decision-influencing functions is not a substitute for reducing overall visits with a buyer organization as doing both simultaneously can be damaging. When forced to visit less frequently, the resulting detrimental effect on sales can be buffered by simultaneously reducing the number of functions visited in a buyer organization. However, a salesperson needs to take care that decision-influencing functions do not perceive overall reductions in visits as burdening them with an increased sponsoring role by ensuring, for example, that a salesperson will still deliver the expected value despite a decrease in visit intensity.

Our research also suggests that salespeople should not underestimate the importance of considering longer-term development of the relationship with a buyer organization for effective salesperson choreographing. While salespeople may not be able to easily affect such developments at any specific point in time, our results suggest diminishing returns from continued increases in the frequency of visits with a buyer organization over subsequent sales periods. We thus caution against the overuse of increases in the frequency of face-to-face visits as a go-to lever to drive sales, unless those visits also provide additional value to the buyer organization by helping it innovate or solve new problems. Increases in visits can, however, be powerful when revitalizing a relationship with a buyer organization that was seemingly neglected through decreases in visits in previous periods. In addition, both increases and decreases in the frequency of visits have less pronounced effects on sales the longer the relationship with a buyer organization exists. Thus, if a reallocation

of visits between buyer organizations becomes necessary, salespeople should consider reducing visits with buyer organizations with longer tenures and increasing visits with those with shorter tenures. Overall, for the most effective use of salesperson choreographing, salespeople need to account for the longer-term development of the relationship with a buyer organization in their decision-making.

We summarize our practical suggestions in a managerial template that provides guidance for evidence-based decision-making (see Fig. 5). Companies and salespeople should be able to easily implement our managerial template since data pertaining to salesperson choreographing are routinely being captured by either the salesperson or the seller organization. Therefore, it is important that CRM systems capture data pertaining to salesperson choreographing. Using these data requires developing practical decision-support tools based on our salesperson choreographing framework (e.g., within a sales support information system) to simulate the effect of changes in salesperson visits. Companies may need to provide guidance on the implementation and use of such a decision-support tool as part of their sales force training programs.

Salesperson choreographing also gives rise to important practical trade-off decisions. Given that salesperson face-to-face visits represent a scarce resource, any changes in the frequency of interaction with one buyer organization can have consequences for the frequency of interaction with other buyer organizations a salesperson manages. In addition, the number of visits available not only is within the purview of a salesperson but also can be affected by decisions made within a seller organization. For example, downsizing of the sales organization or territory expansions reduce a salesperson's average visits available for each buyer organization. Thus, a seller organization needs to consider these effects when making decisions that could affect salesperson visits with buyer organizations. In addition, they should provide guidance to salespeople on how best to implement the necessary reallocation decisions, as sales force redesign implementations often end in failure (Zoltners et al., 2006). Such guidance should also help overcome resistance to necessary redesign decisions by both the sales force and buyer organizations. Our study provides a practical reference point for seller organizations and salespeople to managerially address such challenges.

Future research and limitations

Our findings and design choices give rise to several avenues for future research. First, our salesperson-level analysis suggests possible differential results from literature on firm-level for the management of interactions with buyer organizations. Understanding where these literature streams intersect in terms of contradicting each other as well as complementing each other is needed to advance research on buyer-seller interactions. This would necessitate integration of the salesperson and the firm levels as part of social network analyses rather than a myopic pursuit of single level research agendas. For example, interaction patterns for a single salesperson to successfully pursue a sales opportunity may be very different to those of a seller organization identifying collaborative opportunities within a business relationship with a buyer organization. A multi-level model could provide a way marker for resolving possible contradictions for the benefit of all the involved parties. Blending these inter-organizational issues with intra-organizational considerations (e.g., seller organization or salesperson intra-organizational networks) provides a further facet in such a multi-level model.

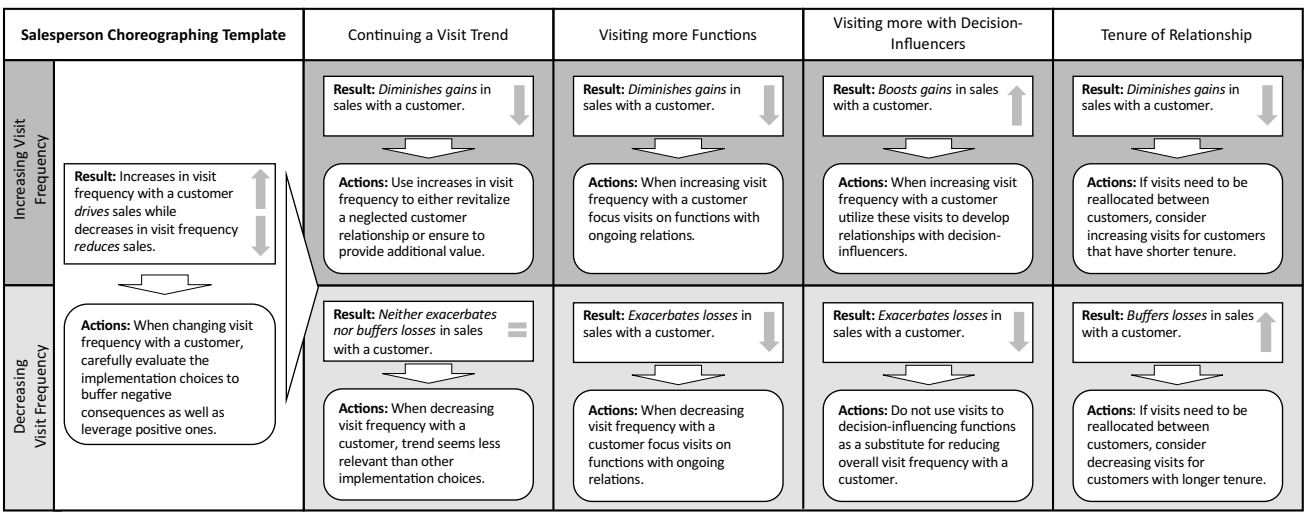

Fig. 5 Managerial template for salesperson choreographing

Second, understanding what is known about sales management phenomena from a change perspective, including the direction of change, has the potential to qualify and extend existing knowledge. For example, while changes in certain interaction patterns can be beneficial in the long-term, they may go through an adaptation period with initial detrimental effects, which could lead salespeople to prematurely abandon what would be a successful visit choreographing strategy.

Third, future research may look at other modes of sales interactions as well as when the interactions happen within the sales cycle. We focused on face-to-face visits as they remain the most important approach for salespeople to engage in information transfer with buyer organizations. However, given the increased use of technology-mediated communication and the varied forms of this technology, it may be that our framework needs to be tested within the context of these types of interactions. In addition, it is quite possible that the effects we report could be different across the sales cycle due to variations of information requirements or the decision influence of different buyer organization functions.

Fourth, while we demonstrate the importance of duration of relations, future research might explore alternative ways to leverage duration of relations as part of a larger investigation into tie history (Houston et al., 2004), such as by including stage models of tie development (Zoltners et al., 2006). In our research we exclusively examine existing relationships with buyer organizations, while salesperson visits for prospecting and new customers as well as those that were lost and subsequently regained may yield different results. For example, our results suggest increases in the diversity of visited functions dampens the beneficial effect of increasing visit intensity on sales. Perhaps this might be the case early in the life cycle when the salesperson is not familiar with diverse contacts in the buyer organization, while the effect may be positive later in the cycle due to increased familiarity. For that matter, it may be that duration of relations has an impact on this suggesting a three-way interaction.

Fifth, although our research is based on data that are readily available to salespeople through their CRM systems, such data do not capture any variables directly related to the underlying mechanisms through which change in sales is affected, for example the value sales visits generate for both the salesperson and the buyer organization. Capturing such data through primary research designs that can be matched with data from CRM systems would shed more light on the underlying micro-foundations of salesperson choreographing and provide insights from the buyer organization perspective (e.g., communication preferences, corporate culture). Such data could also facilitate going beyond structural perspectives on salesperson choreographing to examine relational, cognitive, and affective mechanisms. Social capital theory provides a suitable framework to do so (Nahapiet & Ghoshal, 1998).

Finally, future research might explore salesperson choreographing in and across different contexts to enhance the generalizability of our findings as well as explore important boundary conditions. This includes different firm, industry, or country characteristics (e.g., culture), different offering characteristics (e.g., simple products vs. complex solutions; Cusumano et al., 2015), different buyer organization characteristics (e.g., regular vs. key accounts; Gupta et al., 2019), or different salesperson characteristics. For example, overall salesperson experience with pursuing sales opportunities in general and face-to-face visits in particular may have an effect on choreographing. However, capturing such information would require complementing CRM data with other seller organization data sources.

Appendix 1. Overview of study variables, definitions, and operationalizations

Study Phenomenon / Study Variable	Dynamic Operationalization of Study Variable	Related References
Salesperson Choreographing with a Buyer Organization The salesperson's dynamic allocation of face-to-face visits with a buyer organization–in particular, how often to visit a buyer organization and which functions to visit while there.		
Visit Intensity The frequency of face-to-face visits by a salesperson with a buyer organization.	*Change in Visit Intensity* Change in the number of salesperson visits with a buyer organization relative to the previous sales period measured as a percentage. • *Visit intensity increase*: Increases in the number of salesperson visits with a buyer organization relative to the previous sales period, zero otherwise. • *Visit intensity decrease*: Decreases in the number of salesperson visits with a buyer organization relative to the previous sales period, zero otherwise.	Claro and Ramos (2018) Murtha et al. (2014) Rindfleisch and Moorman (2001) Román and Martín (2008) Tuli et al. (2010)

Study Phenomenon / Study Variable	Dynamic Operationalization of Study Variable	Related References
Diversity of Visited Functions The various functions a salesperson visits in a buyer organization.	*Change in Diversity of Visited Functions* Change in the number of functions visited by a salesperson in a buyer organization relative to the previous sales period.	Steward et al. (2010) Swaminathan and Moorman (2009) Tuli et al. (2010)
Visit Concentration on Top-Management The visit intensity with top-management relative to all salesperson visits with a buyer organization.	*Change in Visit Concentration on Top-Management* Change in the proportion of salesperson visits with top-management compared to the overall visits with a buyer organization relative to the previous sales period.	Palmatier (2008) Román and Martín (2008) Swaminathan and Moorman (2009)
Visit Intensity Trend The direction of changes in visit intensity over time.	*Visit Intensity Trend* The number of consecutive periods with changes in the same direction of the number of salesperson visits with a buyer organization. • *Positive visit intensity trend*: Consecutive period with increase in the number of salesperson visits with the buyer organization, zero otherwise. • *Negative visit intensity trend*: Consecutive period with decrease in the number of salesperson visits with the buyer organization, zero otherwise.	Boichuk et al. (2014) Harmeling et al. (2015) Palmatier et al. (2013)
Duration of Relations The longevity of the relationship between a salesperson with a buyer organization.	Length of the business relationship with the buyer organization in years.	Houston et al. (2004) Van den Bulte and Wuyts (2007)
Sales with a Buyer Organization	*Change in Sales* Sales growth with a buyer organization relative to the previous sales period.	Claro and Ramos (2018) Claro et al. (2020) Gonzalez et al. (2014) Tuli et al. (2010)

Appendix 2

Given the similarity in our research focus on period-to-period changes, our modelling approach follows Tuli et al. (2010) and starts with a level-level model with sales from a buyer organization as the dependent variable and the levels of visit intensity, covariates, and interaction terms as independent variables. We also include the index of each time period as a covariate (Eq. B1). Importantly, we also include the effect of duration of relations on the coefficients for time and visit intensity (Eqs. B2 and B3, respectively)

$$\begin{aligned} S_{it} &= \beta_1 VI_{it} + \beta_2 TM_{it} + \beta_3 D_{it} \\ &+ \beta_4 Trend_{it} + \beta_5 Time + \beta_6 (VI_{it} XTM_{it}) \\ &+ \beta_7 (VI_{it} XM_{it}) + \beta_8 (VI_{it} XTrend_{it}) + \beta_9 \eta_i + \epsilon_{it,} \end{aligned} \tag{B1}$$

where VI is the salesperson's visit intensity, TM is visit concentration on top-management, D is diversity of visited functions, Trend is visit intensity trend, Time indexes the time period t, η_i captures unobserved time-invariant variables, e_{it} captures random error.

$$\beta_1 = \gamma_{10} + \gamma_{11} Dur_i + u_{1i,} \tag{B2}$$

$$\beta_5 = \gamma_{50} + \gamma_{51} Dur_i + \gamma_{52} Size_i + \gamma_{53} AvgVisit_i + \gamma_{54} Loyalty_{i,} \tag{B3}$$

where Dur is the duration of relations with buyer organization i, Size is the size of buyer organization i, AvgVisit captures the average number of visits with buyer organization i, Loyalty is behavioral loyalty of buyer organization i, while u_{1i} represents the random variation of the coefficient β_1 because we expect the coefficient of visit intensity will vary across buyer organizations. We use the Beta symbol (β) to represent time-varying coefficients and the Gamma symbol (γ) to represent time-invariant coefficients. Upon taking a first difference of these equations, we are left with the model shown below:

$$\begin{aligned} \Delta S_{it} &= \beta_1 \Delta VI_{it} + \beta_2 \Delta TM_{it} + \beta_3 \Delta D_{it} + \beta_4 \Delta Trend_{it} \\ &+ \beta_5 + \beta_6 (\Delta VI_{it} X \Delta TM_{it}) + \beta_7 (\Delta VI_{it} X \Delta D_{it}) \\ &+ \beta_8 (\Delta VI_{it} X \Delta Trend_{it}) + \Delta \epsilon_{it,} \end{aligned} \tag{B4}$$

$$\beta_1 = \gamma_{10} + \gamma_{11} Dur_i + u_{1i}, \tag{B5}$$

$$\beta_5 = \gamma_{50} + \gamma_{51} Dur_i + \gamma_{52} Size_i + \gamma_{53} AvgVisit_i + \gamma_{54} Loyalty_i, \tag{B6}$$

If we substitute the higher-level equations (Eqs. B5 and B6) within the lower-level equation (Eq. B4), and move the time coefficient (γ_{60}) to the beginning of the equation as (β_0), we get the resultant model (Eq. B7) shown below, which serves as the model for empirical analysis:

$$\begin{aligned}\Delta S_{it} &= \beta_0 + \gamma_{10}\Delta VI_{it} + \beta_2\Delta TM_{it} + \beta_3\Delta D_{it} + \beta_4\Delta Trend_{it} \\ &+ \gamma_{51}Dur_i + \gamma_{52}Size_i + \gamma_{53}AvgVisit_i + \gamma_{54}Loyalty_i \\ &+ \beta_5\left(\Delta VI_{it}X\Delta TM_{it}\right) + \beta_6\left(\Delta VI_{it}X\Delta D_{it}\right) + \beta_7\left(\Delta VI_{it}X\Delta Trend_{it}\right) \\ &+ \gamma_{11}\left(\Delta VI_{it}XDur_i\right) + u_{1i}\Delta VI_{it} + \Delta\epsilon_{it}\end{aligned} \tag{B7}$$

Appendix 3

For H1a and H1b, we include visit intensity increases and visit intensity decreases in the same model to test the relative difference in influence between each variable on sales growth. The model is shown below

$\Delta S_{it}=\beta_1\Delta VIPos_{it}+\beta_2\Delta VINeg_{it}+\beta_3\Delta TM_{it}+\beta_4\Delta D_{it}+\beta_5\Delta TrendPos_{it}+\beta_6\Delta TrendNeg_{it}+\beta_7+\Delta\epsilon_{it}$,

$$\beta_1 = \gamma_{10} + u_{1i},$$

$$\beta_2 = \gamma_{20} + u_{2i},$$

$$\beta_7 = \gamma_{70} + \gamma_{71}Dur_i + \gamma_{72}Size_i + \gamma_{73}AvgVisit_i + \gamma_{74}Loyalty_i,$$

where VIPos is visit intensity increases, VINeg is visit intensity decreases, TM is visit concentration on top-management, D is diversity of visited functions, TrendPos is positive visit intensity trend, TrendNeg is negative visit intensity trend, where Dur is the duration of relations with buyer organization i, Size is the size of the buyer organization i, AvgVisit captures the average number of visits with buyer organization i, Loyalty is behavioral loyalty of buyer organization i, while u_{1i} and u_{2i} represents the random variation of the coefficient β_1 and β_2 because we expect the coefficient for change in visit intensity will vary across buyer organizations, and e_{it} captures random error. The equation for β_7 captures the coefficients derived from the first difference of the time index (see Appendix B).

Declarations

Conflict of interest The authors declare that they have no conflict of interest.

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