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ORIGINAL EMPIRICAL RESEARCH

"Coopetition" in the presence of team and individual incentives: Evidence from the advice network of a sales organization

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Abstract

Team and individual incentives are ubiquitous in sales, but little is known about their impact on collaboration when they are applied simultaneously. The presence of both types of incentives creates a "coopetitive" environment, where forces of collaboration and competition coexist. We examine how such environments impact the likelihood (Study 1) and the effectiveness (Study 2) of collaboration in the form of advice exchange. Exponential random graph modeling (ERGM) of network data of 540 salespeople reveals that individual incentives promote advice seeking but discourage advice giving, and team incentives stimulate advice giving but reduce advice seeking (Study 1). We also find that the effectiveness of advice depends on advice givers (Study 2). In particular, when advice givers have diverse team incentives, the advice is more effective and the need for additional advice is reduced, but when advice givers have diverse individual incentives, the advice is less effective and additional advice helps.

Keywords Advice seeking · Advice giving · Sales · Social network analysis · Exponential random graph models · Team incentives · Individual incentives

Seeking work-related advice from colleagues is one of the primary means to resolve uncertainties in the workplace and improve job performance (Carucci, 2020). According to a recent report, U.S. employees spend an average of 5.3 hours a week seeking advice from coworkers (Panopto, 2018). The need for advice exchange is particularly critical in the sales profession due to the many uncertainties involved in the selling process. For example, studies show that the impact of salespeople's "network performance"—or how much they give to or take from their peers—on business unit profitability has increased significantly over the past decades, while the impact of their individual performance has decreased (Adamson et al., 2014).

Despite this growing need, advice exchange in a sales context is fraught with complexities that are less prevalent in other settings. In particular, sales organizations have a long

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tradition of stimulating rivalry among salespeople through various individual incentives and competition-inducing practices, such as sales contests (Kalra & Shi, 2001), bench programs (Boichuk et al., 2019), or rewards and bonuses for salespeople at different performance levels (Steenburgh & Ahearne, 2012). While competitive incentives remain prevalent, many sales organizations increasingly feel the need to foster more collaboration among their salespeople as well (Greene, 2020). WorldatWork, the leading global association for sales compensation and rewards, reports that 83% of sales organizations that completed its surveys highly valued team incentives that promote collaboration among salespeople (Thompson, 2018).

The need for collaboration in a sales setting, where in most cases, salespeople compete for individual incentives, creates a tension that has not been studied before. The literature relevant to our work appears in four main streams: (1) social network studies in sales, (2) advice exchange research, which appears in the management, communication, and small-group disciplines, (3) literature on team and individual incentives, and (4) literature on "coopetition" (Table 1). These literature streams demonstrate the importance of advice networks as collaborative social capital for improving performance (stream one), offer more nuanced insights into factors that influence the effectiveness of advice exchange (stream two), compare team incentives and individual incentives in terms of their impact on employee effort (stream three), and study coopetition among firms or interfunctional units (stream four). However, as Table 1 further shows, knowledge is scarce as to how the simultaneous presence of team and individual incentives impacts the likelihood and effectiveness of collaboration, in the form of advice exchange, among salespeople.

In this paper, we bridge these gaps. In particular, we explore how team and individual incentives drive both advice seeking and advice giving and how the composition of the group of advice givers, in terms of variation in team and individual incentives, influences the effectiveness of advice in improving performance. To do so, we collected data on 540 salespeople at a leading business-to-business (B2B) company. Using an exponential random graph model (ERGM; Lusher et al., 2013), we first examine determinants of advice exchange (Study 1). The results reveal that the baseline propensity for an advice exchange is low, advice seeking is likely to be reciprocated, and popular advice givers as well as active advice seekers are less likely to emerge in a setting with both team and individual incentives. Moreover, the results show that team and individual incentives differentially promote advice exchange. In particular, salespeople for whom the importance of individual incentives is more salient are more likely to seek advice but less likely to give advice. By contrast, the perceived importance of team incentives drives salespeople to give advice more often, but these individuals are less likely to seek advice from their peers. Drawing from the literature on team and individual incentives, we argue that individual incentives motivate salespeople to improve but, at the same time, heighten competition, which explains why such incentives promote advice seeking (improvement motive) but discourage advice giving (competition motive). Moreover, team incentives both underscore the importance of and trigger the reliance on the collective effort of the team (Karau & Williams, 1993), which explains why such incentives encourage advice giving (to ensure teammates put in their share of effort) but decrease the likelihood of advice seeking (reduced focus on own effort).

Building on the literature on advice exchange, we hypothesize that the effectiveness of advice should depend on whom salespeople seek advice from and how diverse advice givers' perspectives are (Study 2). Not only do team incentives promote advice giving, but the advice itself is also likely to be quite helpful (Friebel et al., 2017; Harvey & Fischer, 1997). Conversely, advice given under high individual incentives is likely to be insufficient, self-interested, and even misleading, due to competitive motives (Hogan, 2014).

However, what determines whether cooperative or competitive motives can help or hurt the effectiveness of the advice depends on the extent to which advice givers have diverse perspectives. When advice comes from people with perspectives similar to each other, their advice is more likely to be discounted because the same advice will go against one's own prejudgment and be adapted to a greater extent (Bonaccio & Dalal, 2006; Bonaccio & Paik, 2018; Yaniv, 2004). However, when the perspectives of advice seekers seem diverse, people tend to aggregate the opinions they receive and put all advice under a new light (i.e., the "wisdom-of-the-crowd" phenomenon; Budescu & Rantilla, 2000; Garvin & Margolis, 2015; Yaniv & Milyavsky, 2007). Therefore, the diversity of advice givers' perspectives increases the chance of advice utilization and has a stronger influence on performance (Bonaccio & Paik, 2018; Budescu & Rantilla, 2000; Garvin & Margolis, 2015; Yaniv, 2004; Yaniv & Milyavsky, 2007).

We hypothesize that when advice givers report a diverse emphasis placed on team incentives in their units, the averaging of their opinions will yield a net positive effect, with the helpful advice of those with a reported high emphasis on team incentives included in forming the wisdom of the crowd. Therefore, we theorize that such diversity will positively impact performance. The need to ask for additional advice is reduced in these situations, as additional advice will likely drive down the net positive effect in the aggregation of opinions.

In the opposite direction, we hypothesize that the diversity in advice givers' reported emphasis on individual incentives in their units will have a net negative effect, due to the potentially self-interested or misleading advice of those with

Table 1 Literature snapshot

Literature group	Studies	Field	Study context	Methodological approach	Variation in advice quality accounted for?	Network/ tie formation studied?	Formal incentives studied?	Collaboration/advice exchange studied?	Mixed incentives studied?	Focus of studies
Social networks in sales	Ahearne et al. (2013); Bolander et al. (2015); Gonzalez et al. (2014); Hayati et al. (2018)	Marketing	Sales	Field study	✗	✗	✗	✗	✗	Impact of salesperson's position within the network on performance
Advice exchange	Budescu and Rantilla (2000); Dalal and Bonaccio (2010); Harvey and Fischer (1997); Johnson et al. (2001); MacGeorge et al. (2016); Soll and Larrick (2009); (2009); Yaniv (2004)	Small group/ Communication/Management	Groups	Lab experiments	✓	✗	✗	✓	✗	Factors impacting advice taking and advice utilization
Coopetition	Tsai (2002); Ho and Ganesan (2013); Luo et al. (2006); Mathias et al. (2018); Danielson (2002)	Strategy/Marketing	Firms/cross-functional units	Survey, lab experiments, game theory models	✗	✗	✗	✓	✗	Coopetition between cross-functional units or firms
Team and individual incentives	Chen and Chung (2021); Chen and Lim (2013), (2017); Lim and Chen (2014)	Marketing	Sales	Lab experiments (behavioral economics)	✗	✗	✓	✗	✗	Factors affecting the effectiveness of team incentives and exerted effort
	Bandiera et al. (2013); Barnes et al. (2011); Beersma et al. (2003); Friebel et al. (2017); Karau and Williams (1993)	Management/ Economics	Work groups	Lab experiments, field studies	✗	✗	✓	✗	✗ (exception: Barnes et al., 2011)	Comparison of team and individual incentives regarding output, effort, social loafing

Table 1 (continued)

Literature group	Studies	Field	Study context	Methodological approach	Variation in advice quality accounted for?	Network/ tie formation studied?	Formal incentives studied?	Collaboration/advice exchange studied?	Mixed incentives studied?	Focus of studies
Current study	–	Marketing	Sales	Field study	✓	✓	✓	✓	✓	Advice exchange in the presence of team *and* individual incentives

For brevity: a) only representative papers are shown, and similar papers to the ones already mentioned are excluded; b) citations that do not appear in the main manuscript are referenced at the end of the Web Appendix

a reported high emphasis on individual incentives counted in the aggregate opinion. Seeking advice from more colleagues will, in this case, be beneficial because it will help balance the net negative average.

Overall, we provide evidence on the impact of the simultaneous usage of team and individual incentives and their opposing effects on the likelihood of advice exchange and the effectiveness of advice seeking. Sales leaders who employ team incentives with the hope of facilitating collaboration should be aware that the presence of both team and individual incentives creates a complex dynamic with opposing forces of collaboration and competition.

We contribute to the social network in sales literature, which (a) has not examined factors affecting the formation of advice exchange relationships and (b) assumes equal value among advice-seeking relationships, to the management, small group, and communication research on advice, which (c) is mostly experimental and (d) has not investigated the influence of formal incentive systems on advice exchange, to the incentive literature, which (e) has mostly analyzed effort exertion rather than collaboration, (d) with few exceptions has not studied mixed incentive plans (both team and individual incentives), and (f) has not examined the "coopetition" arising due to the interplay between team and individual incentives, and to the literature on coopetition, which (g) has mostly focused on firms or cross-functional units, but not individuals or relationships among social actors. Table 1 summarizes our contribution to these streams of research.

Background

Four broad research streams are related to our investigation: research on social networks in sales, research on advice exchange, which mainly appears in the management, small-group, and communication disciplines, the literature on team and individual incentives, which is covered across marketing, economics, and management disciplines, and the literature on coopetition. In the following paragraphs, we first review previous research on social networks in sales, then present ERGMs as an advanced class of social network analyses, and finally proceed with the presentation of the other three literature streams.

Literature on social networks in sales

Following the interest in applying social network analysis to various marketing problems in the past two decades (for a review, see Van den Bulte & Wuyts, 2007), sales researchers have examined the impact of social networks on the performance of salespeople and sales organizations (Ahearne et al., 2013; Bolander et al., 2015; Gonzalez et al., 2014; Hayati et al., 2018). What all these studies

have in common is a structural assessment of how the shape of a network and a salesperson's position within that network can influence individual and organizational performance. For example, sales scholars have investigated how the density of a network, the presence of structural holes that could offer brokerage opportunities to boundary-spanning actors, and the centrality of an actor can affect both the organizational outcomes and the actor's (salesperson or sales manager) performance (e.g., Ahearne et al., 2013; Bolander et al., 2015).

Although these social network studies provide valuable insights into the influence of network factors on performance, they suffer from two limitations (Table 1). First, they draw their insights from the given shape of a particular social network. However, it is not clear how organizations or actors can move toward the studied network shape or position within the network so that they can accrue the resulting benefits that the studies delineate. For example, while a dense social network, one with a large number of actors connected with each other, can facilitate idea generation and innovation (Brass & Borgatti, 2020; Kilduff & Tsai, 2003), the factors that contribute to the emergence of a dense network remain unclear. Similarly, although studies have shown that occupying certain network positions, such as a central or a bridging position, can endow actors with power or novel information (e.g., Bolander et al., 2015; Brass & Burkhardt, 1993), it is unclear how prevalent such positions are in certain jobs or industries or what factors influence the formation of ties in ways that facilitate the appearance of these positions in a network. This shortcoming is the focus of advanced social network analyses related to earlier work in 1980-90s on p* graph (e.g., Wasserman & Pattison, 1996)—that is: ERGMs (Lusher et al., 2013), which investigate factors associated with the formation and evolution of relationship ties and, in a broader sense, the likelihood of the emergence of certain structures within a network.

The second limitation of the studies that use these models is that they seem to assume that all ties are equally important or useful, as the entire analysis of the network depends on how different actors are connected to each other (Brass & Borgatti, 2020). In practice, however, connections between different people might be of differing values. For example, in advice-seeking networks, certain people may provide less valuable or even misleading advice, while others may go out of their way to help the advice seeker (Bonaccio & Dalal, 2006). Likewise, some advice seekers might discount the advice they receive, whereas others better utilize advice (Bonaccio & Paik, 2018). Therefore, predicting certain outcomes by only considering the shape of the advice network of salespeople is difficult unless one assumes that all connections between actors are of similar value.

ERGMs

ERGMs (e.g., Park et al., 2020) are an advanced class of social network analyses that address the first shortcoming related to traditional social networks (i.e., the question of what drives tie formation in the first place). In particular, ERGMs are tie-based models that researchers employ to understand how social network ties arise (Robins & Lusher, 2013). The main difference between ERGMs and other statistical methods, such as logistic regression on the likelihood of tie formation, is the removal of the assumption that observations (i.e., actors, individuals) must be independent of each other (Contractor et al., 2006), which is the basis of classical regression analysis. ERGMs explicitly account for multiple tie interdependencies between the actors of a social network and, thus, represent an "evolution of statistical models for social networks" (Wasserman & Pattison, 1996, p. 401).

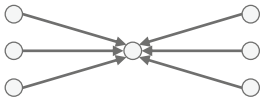
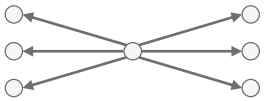
ERGMs start by assuming that an observed network between a given number of individuals is created randomly from all the possible networks that could arise between them (Robins & Lusher, 2013). The probability of the emergence of the observed structure is then modeled and estimated, given the actors' attributes and those of the observed network (Lusher et al., 2013). The resulting structural estimates reveal the likelihood of the emergence of those structures (e.g., reciprocity, popularity spread) compared with the universe of potential networks between those actors, and the estimates of actor attributes demonstrate how likely those attributes drive the formation of ties in the observed network compared to random networks created by chance (Park et al., 2020; Rank & Strenge, 2018). We use ERGMs in Study 1 to examine the drivers of advice exchange in sales.

Table 2 illustrates the key ERGM terms. Arc represents the baseline propensity for advice exchange. A significant positive (negative) coefficient for arc suggests that advice exchange is relatively more common (less common) in the context under study compared to random graphs created by chance among the existing number of actors. The coefficient for reciprocity captures whether an advice-seeking tie is reciprocated. Popularity spread indicates how likely will "popular advice givers" emerge, and activity spread captures how likely will "active advice seekers" appear in the network compared to chance. Difference (homophily) captures whether difference (similarity) on a given variable is a significant predictor of advice exchange. Advice giving (seeking) on actor relation variables capture whether a variable is a significant predictor of advice giving (seeking).

Literature on advice exchange

Management, communication, and small-group scholars who have studied advice exchange contend that all advice

Table 2 Summary of parameters included in the ERGM estimation

Parameter	Illustration	Interpretation	Origin
Underlying social processes (structural effects)			
Arc		Baseline propensity to exchange advice	Fundamentals of social network research (Wasserman & Faust, 1994)
Reciprocity		Tendency for reciprocating advice (i.e., mutual ties)	Tie strength (Granovetter, 1973)
Popularity spread		Tendency for variation[a] in the degree to which an actor receives multiple advice tie nominations (i.e., in-degree distribution)	Degree centrality (Freeman, 1979)
Activity spread		Tendency for variation in the degree to which an actor sends multiple advice ties (i.e., out-degree distribution)	Degree centrality (Freeman, 1979)
Salespeople's attributes (actor relation effects)[b]			
Homophily (difference)		Tendency for advice ties to occur between salespeople who are similar with respect to a specific attribute	Homophily theory (McPherson & Smith-Lovin, 1987)
Advice seeker		Tendency for salespeople with a specific attribute to seek advice	Actor attributes (Kilduff & Tsai, 2003)
Advice giver		Tendency for salespeople with a specific attribute to give advice	Actor attributes (Kilduff & Tsai, 2003)

Actor = salesperson; tie = connection between two actors, indicating a relationship (Wasserman & Faust, 1994)

[a]Tendency for variation means it is more likely that there are differences (vs. no differences) in the degree to which an actor receives multiple advice tie nominations

[b]Black nodes indicate actors with specific attribute

does not necessarily lead to effective results. Instead, several individual, task-related, and situational factors influence the effectiveness of advice exchange, advice utilization, and the ultimate decision accuracy (e.g., Bonaccio & Dalal, 2006; Bonaccio & Paik, 2018; Yaniv, 2004; Yaniv & Milyavsky, 2007). We borrow from this literature to hypothesize about the link between advice seeking and performance, as well as the influence of the group of peers from whom a salesperson seeks advice.

This research stream also has two limitations that we address in our study. First, this literature relies heavily on experimental designs performed in the lab, with few studies carried out in organizational settings (for exceptions, see Ecken & Pibernik, 2016; McDonald et al., 2008). The second, and perhaps more important, limitation is that researchers have not investigated commonly used organizational levers such as incentives and their influence on advice exchange. The type of incentives and whether they foster collaboration or fuel competition can play an integral role in determining whether colleagues choose to seek, give, or use advice and whether the advice can help the advice seeker.

Literature on team and individual incentives

Scholars in marketing, management, and economics have contributed to the literature on team and individual incentives. The first group of scholars, marketing researchers, have mostly used behavioral economics principles and experiments to compare team and individual incentives and their impact on performance (Chen & Chung, 2021; Chen & Lim, 2013; Lim & Chen, 2014). As their main outcome of interest, these researchers have predominantly explored the extent to which experiment participants exert effort under team versus individual incentives. However, in addition to increasing effort, the goal that many sales leaders seek from using team incentives is promoting collaboration, an outcome that marketing researchers have not examined (Table 1). In addition, team incentives are seldom used in isolation and are often accompanied by individual incentives in many sales organizations. An example is Merck Pharmaceuticals, which offers both individual incentives and team stock options to best-performing teams (Parker et al., 2000). Marketing scholars have not investigated the ramifications of a mixed plan that comprises both team and individual incentives.

Management and economics scholars, have also primarily focused on the effort contribution of team members under team versus individual plans as their main variable of interest (e.g., Barnes et al., 2011; Beersma et al., 2003). The majority of these studies compare team-based with individual-based incentives, without exploring mixed structures, which are common in practice. A notable exception is Barnes et al. (2011), who find that employees under mixed incentives perform faster but less accurately. A key difference between this literature and how incentives are implemented in sales organizations is that in sales, most individual incentives are designed to trigger competition among salespeople (Steenburgh & Ahearne, 2012). However, the settings examined in the literature are from noncompeting teammates, and the authors mostly focus on the effort exertion of individuals. Therefore, the competitive element of individual incentives and its impact on collaboration between peers are understudied in the extant literature.

Literature on coopetition

Coopetition, or the coexistence of cooperative and competitive motives among business units or firms, has interested mostly strategy scholars in fields such as management and marketing (Gnyawali & Charleton, 2018; Ho & Ganesan, 2013; Luo et al., 2006; Mathias et al., 2018; Rai, 2016; Tsai, 2002). This line of research has examined the extent to which coopetition can lead to mutual benefits and financial gains for the parties involved (Ho & Ganesan, 2013; Mathias et al., 2018; Rai, 2016) and how factors related to organizational structure (e.g., centralization) can moderate knowledge sharing under coopetition (Tsai, 2002).

However, the bulk of studies in this research stream focuses on coopetition between firms (Gnyawali & Charleton, 2018; Ho & Ganesan, 2013; Mathias et al., 2018; Rai, 2016), with few instances examining coopetition between cross-functional units within a firm (Luo et al., 2006; Tsai, 2002). There are few studies that do not elaborate on the nature of the actors but primarily draw on game theoretic predictions or lab experiments to study coopetition (Dagnino & Rocco, 2009; Danielson, 2002). However, scholars have not yet examined coopetition arising among individual employees rather than units or firms, triggered by the simultaneous presence of team and individual incentives in real settings (Table 1).

Conceptual framework and constructs

As Fig. 1 shows, our unit of analysis is the individual salesperson, and our framework can be separated into two parts: antecedents and consequences of advice exchange. With regard to antecedents, the ERGM framework identifies two domains of variables that are relevant to advice exchange: social processes and context-relevant employee attributes (Berger et al., 1980; Sauder et al., 2012). In line with previous work on advice seeking (Brennecke & Rank, 2016; Lomi et al., 2014), we focus on arc, reciprocity, popularity spread, and activity spread as key social processes included in our model. To conceptualize the context-relevant employee attributes, we focus on the perceived salience of team incentives to capture how sales organizations promote collaboration (Lim & Chen, 2014). In addition, we focus on the perceived salience of individual incentives to account for the long tradition in sales of stimulating rivalry among salespeople (Bommaraju & Hohenberg, 2018). Thus, we examine how the tension between competition and collaboration in sales (Schrock et al., 2021) drives both advice-seeking and advice-giving behavior.

With regard to consequences, we build on previous sales research and research on advice exchange outside the sales context. In particular, we conceptualize performance as the ultimate dependent variable of our framework (Bolander et al., 2021). Moreover, we conceptualize two contingency factors that may influence the relationship between the extent of advice seeking and performance: diversity of advice givers' team incentives and diversity of advice givers' individual incentives. While we derive these contingency factors from our theorizing on advice seeking in sales as a process of tension between competitive and cooperative forces, both factors relate to the diversity of the focal salesperson's group of advisers. We thus aim to capture how different motives of advisers may change the helpfulness of their advice and thus attempt to isolate some of the competitive and cooperative forces at play. Table 2 provides illustrations and interpretations of the structural configurations representing the included underlying social processes, and Table 3 provides a summary of the key variables and their operational measures.

Hypotheses development

Drivers of advice exchange: Social processes

Social processes capture the likelihood that certain network structures commonly present in other advice networks also arise in the advice network of salespeople. The most basic element of a social network is whether two actors are connected through a tie that describes the nature of their relationship. In our context, this represents the likelihood that a salesperson seeks advice from another salesperson. In a coopetitive context where forces of competition and collaboration coexist, we argue that a salesperson's propensity to collaborate should be lower than in contexts where the competition element is absent. Compared to most other work settings that are neutral at worst and highly collaborative at best (e.g., R&D teams; Reagans & Zuckermann, 2001), the competition element is significant in sales, which is known

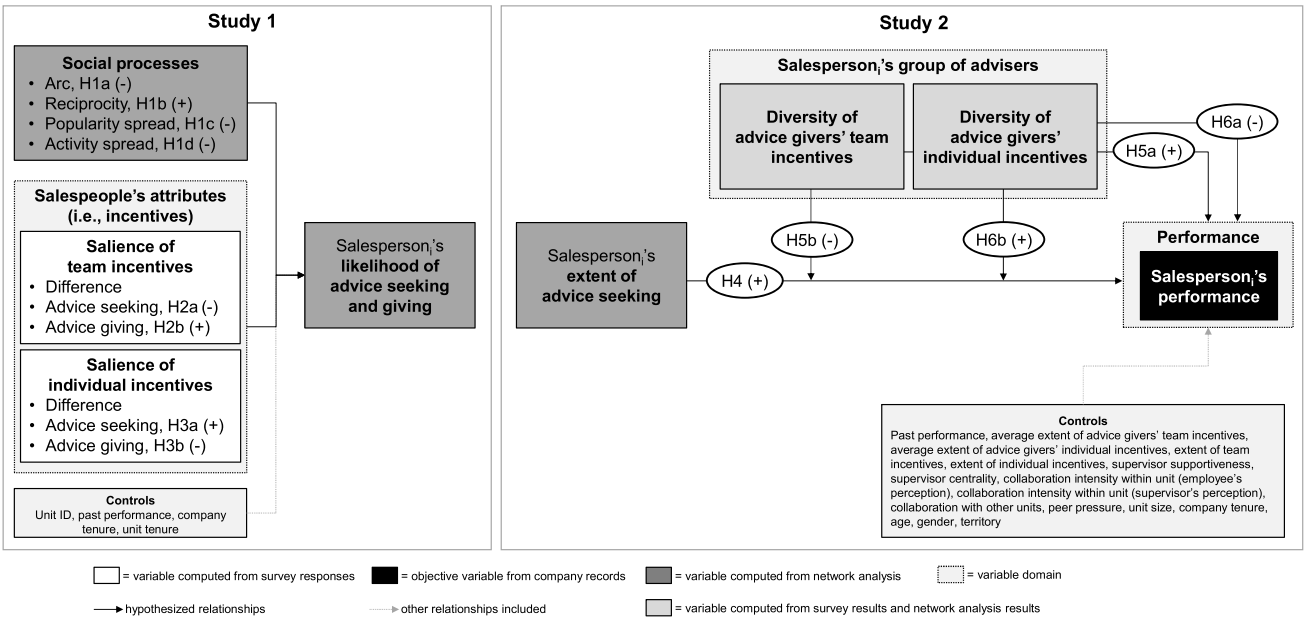


Fig. 1 Conceptual framework

to be one of the most competitive professions in the corporate world (Schrock et al., 2021). Therefore, we expect the baseline propensity for seeking advice to be low in sales, even in the presence of team incentives.

However, we further expect that the presence of team incentives would motivate collaboration under competition and lead to a coopetitve setting. Researchers who have studied coopetition in lab experiments or game theoretic setups have contended that reciprocity expectations are what makes collaboration work under competition (Dagnino & Rocco, 2009; Danielson, 2002). In other words, competitors would collaborate with each other, at least in a limited capacity or on specific tasks, as long as they believe that their counterparts will reciprocate (Danielson, 2002; Lascaux, 2020). While reciprocity is a basic human norm, its presence is essential for any collaboration to occur in a competitive context (Dagnino & Rocco, 2009; Danielson, 2002). This expectation is in line with prior findings in the sales context that competing salespeople would talk to each other and share best practices, but only with those whom they have some similarities on factors that would foster opportunities for reciprocity (Atefi et al., 2018).

Two other important characteristics of a network are the extent to which an individual is asked for advice by many colleagues (i.e., popularity spread) and the extent to which an individual seeks advice from many colleagues (i.e., activity spread). In network terms, popularity spread captures whether most advice is sought from a few "popular" peers, while activity spread captures whether certain "active" advice seekers exist in the network (Agneessens & Wittek, 2012; Lomi et al., 2014). Both characteristics can be common in other work settings, particularly in contexts in which employees are not directly competing for individual incentives (e.g., Gondal, 2011). For example, technical expertise can drive colleagues in engineering or R&D teams to seek advice from the same popular expert peers, while a new hire in an agile or rotating team can end up asking advice from colleagues from various work groups.

However, we argue that the presence of team and individual incentives prohibits both features from becoming dominant. A high popularity spread would imply that "expert" advice givers are present who are generous with giving advice to many peers. However, in a competitive setting, sharing tips with many rivals should naturally weaken one's own chances in the competition. Prior research indicates that if collaboration has to happen between competitors, it happens very selectively and in social niches rather than broadly with many peers (Lazega et al., 2016). Therefore, we hypothesize that generous advice givers are less likely to emerge under individual incentives, since the resulting competition should prevent salespeople from wanting to share their tips with many other colleagues.

Similarly, the presence of active advice seekers is less likely under both team and individual incentives. Those who seek advice from many others come across as incompetent (Blunden et al., 2019b), and thus can be viewed as a weak link in the efforts to attain the team incentive. In addition, advice givers have been shown to dislike those who seek advice from many others, as such peers are perceived as "information collectors" rather than sincere in applying

Table 3 Definitions of key variables and operational measures

Key variables	Definition	Operational measures
Arc	*The baseline propensity for tie formation between two salespeople*	$\sum x_{ij}$
Reciprocity	*The tendency to reciprocate a salesperson's advice*	$\sum x_{ij}x_{ji}$
Popularity spread	*The distribution of the number of advice-seeking ties a salesperson receives across the whole network (i.e., in-degree distribution)*	$\sum_{k=2}^{n-1}(-1)^k \frac{S_{k_in}}{\lambda^{k-2}}$
Activity spread	*The distribution of the number of advice-seeking ties a salesperson sends across the whole network (i.e., out-degree distribution)*	$\sum_{k=2}^{n-1}(-1)^k \frac{S_{k_out}}{\lambda^{k-2}}$
Salience of team incentives	*The perceived value a salesperson ascribes to rewards that are granted on the basis of the achievement of all members of a sales unit (object of evaluation = sales unit)*	Research scale adapted from Hohenberg and Homburg (2016, 2019)
Salience of individual incentives	*The perceived value a salesperson ascribes to rewards that are granted on the basis of their personal achievement (object of evaluation = salesperson)*	Research scale adapted from Hohenberg and Homburg (2016, 2019)
Diversity of advice givers' team incentives	*The heterogeneity of advice givers' reported team incentives*	Standard deviation of the responses on the extent of team incentives across all nominated advisers from whom an individual salesperson reported seeking advice
Diversity of advice givers' individual incentives	*The heterogeneity of advice givers' reported individual incentives*	Standard deviation of the responses on the extent of individual incentives across all nominated advisers from whom an individual salesperson reported seeking advice
Extent of advice seeking[a]	*The degree to which a salesperson consults (one or more) colleagues for guidance on a particular work-related issue*	Free-recall nomination method combined with an open-ended question format in our survey (see Web Appendix W3 and the Methodology section)
Salesperson performance	*The realized sales revenue of a salesperson*	Firm data on the average monthly revenue in the year following the survey (log-transformed)

λ is a dampening factor (Snijders et al., 2006); S_k, S stands for "star," and the subscript k indicates the size of the star involved (e.g., 2-star, 3-star, … k-star). Stars are structures involving multiple ties connected to one actor. For instance, a two-star structure is two advice exchange ties from two different people linked to the same salesperson. [a]For a conceptual comparison of advice seeking with other related concepts, please see Web Appendix W1

the particular direction that an advice giver offers (Blunden et al., 2019a). Such negative perception toward active advice seekers can intensify under individual incentives since offering advice to competitors is inherently risky (Lazega et al., 2016). Therefore, under individual incentives, salespeople might refrain from giving advice to peers who are known to have sought advice from many others, feeling that such peers might be using advice seeking as a competitive strategy to learn and collect everyone's strategies and methods. Thus:

H1a Advice exchange among salespeople is less likely to occur in a coopetitive setting.

H1b Advice ties among salespeople are likely to be reciprocated in a coopetitive setting.

H1c Popularity spread is less likely to occur among salespeople in a coopetitive setting.

H1d Activity spread is less likely to occur among salespeople in a coopetitive setting.

Drivers of advice exchange: Incentives

Through their varying subject focus (i.e., team vs. individual), team and individual incentives can differentially influence the propensity to seek or give advice. In particular, individual incentives activate the focus on the self and the competitive nature of the work, making it more salient, while team incentives make team goals salient (Barnes et al., 2011; Karau & Williams, 1993).

Team-based incentives aim at fostering collaboration and collegiality (Gomez-Mejia & Franco-Santos, 2015). If successfully implemented, team incentives may increase teamwork and cooperation, which can lead to trust and group cohesion (Bandiera et al., 2013; Gomez-Mejia & Franco-Santos, 2015). Therefore, team incentives can be expected to increase advice seeking.

Despite this expectation, several prior findings imply that team incentives may reduce rather than increase advice seeking. In particular, many studies have demonstrated negative side effects of team incentives in the form of free-riding or reduced effort and quality of work of individual group members (Babcock et al., 2015; Barnes et al., 2011; Beersma et al., 2003; Friebel et al., 2017; Karau & Williams, 1993). Besides free-riding, which is an established, *intentional* consequence of team incentives (see Karau & Williams, 1993 for a review), team incentives can still affect teammates' efforts even if loafing is not necessarily their intention (Barnes et al., 2011; Beersma et al., 2003). In other words, the increased reliance on peers and the collective effort of the group can reduce the focus on one's own contribution and ways to improve it (Barnes et al., 2011). In an experimental setting, for example, Beersma et al. (2003) found that compared with those under team incentives, those under individual incentives finished their tasks faster and exerted more effort.

Seeking advice is primarily linked to individuals' need to improve their own performance (Bonaccio & Paik, 2018). Moreover, approaching a colleague and seeking their advice or help is generally costly and will be avoided if it is not absolutely necessary (Hofmann et al., 2009). The need for advice is felt to a lesser degree under team incentives because team incentives make individuals pay less attention to their individual contributions and rely more heavily on their colleagues to fill in (Bandiera et al., 2013; Barnes et al., 2011; Beersma et al., 2003; Karau & Williams, 1993). Therefore, we expect salespeople, for whom team incentives are more salient, to be less likely to seek advice from peers to improve their performance because they are relying more on the group effort and are less focused on their own performance and ways to improve it.

H2a Salience of team incentives is associated with a reduced likelihood of advice seeking.

While team incentives reduce focus on one's own contribution, they interestingly direct individuals' attentions to their colleagues' work due to the increased reliance on group effort and the risk of peer loafing (Babcock et al., 2015; Bandiera et al., 2013). In particular, group members under team incentives tend to be more sensitive to their colleagues' level of effort (Bandiera et al., 2013) and try to influence it by giving advice or even exerting peer pressure (Babcock et al., 2015; Friebel et al., 2017). Furthermore, such use of advice to ensure peers' accountability in achieving group goals is reminiscent of Harvey and Fischer's (1997) view of advice giving as a form of sharing responsibility and ensuring accountability in group tasks. Therefore, we expect that salespeople, for whom team incentives are more salient, will be more likely to give advice to their peers to make sure that their colleagues are contributing their fair share towards the team goal, help and monitor less productive peers, and foster peer accountability, ensuring that potential obstacles for reaching the team goal are removed.

H2b Salience of team incentives is associated with an increased likelihood of advice giving.

We expect that the salience of individual incentives will make salespeople strive to improve their individual performance (Ilgen et al., 2005). Facing obstacles or uncertainties, salespeople will not shy away from asking for advice from peers if their individual performance goals are salient. These salespeople will seek advice under normal circumstances as well if they feel they need to improve their methods or expand their customer or product knowledge. However,

promoting individual incentives such as contest prizes, inclusion in the president's club, and other similar competitive rewards will also heighten competition for salespeople who operate under such incentives (Schrock et al., 2021). Consequently, giving advice to peers might be deemed as helping rivals and therefore be avoided as much as possible. In case salespeople for whom individual incentives are salient have to give advice, they might provide insufficient, misleading, or self-interested advice (Hogan, 2014). Salespeople who avoid giving advice or defer to less helpful suggestions will be less consulted over time.

H3a Salience of individual incentives is associated with an increased likelihood of advice seeking.

H3b Salience of individual incentives is associated with a reduced likelihood of advice giving.

Performance ramifications of the extent of advice seeking

Prior research has shown that the extent of advice seeking, or the number of people from whom an individual seeks advice, has a positive effect on performance (McDonald et al., 2008). This effect mostly works by exposing advice seekers to a diverse set of opinions and ideas, which can help them see the task at hand from different angles (Bonaccio & Dalal, 2006; Bonaccio & Paik, 2018; McDonald et al., 2008). Seeking advice from additional peers will help the advice seeker assess the quality of each advice, form an aggregation of opinions as the "wisdom of the crowd," and use this wisdom to improve performance and decision making (Budescu & Rantilla, 2000; Yaniv, 2004; Yaniv & Milyavsky, 2007).

H4 The extent of advice seeking (i.e., the number of advice givers) leads to performance improvement.

The incentives of advice givers and their role as contingency factors

Team and individual incentives of advice givers can influence the type of advice the salesperson receives. As we hypothesized previously, team incentives drive people to give advice more frequently, and as the literature suggests, such advice is helpful and well-intentioned (Gomez-Mejia & Franco-Santos, 2015). In addition, high team incentives can create a climate of helping that spills over to helping colleagues from other teams as well if asked for advice, particularly if the teams are not competing (Mossholder et al., 2011). By contrast, individual incentives can stimulate competitive motives and lead to the provision of self-interested or wrong advice (Hogan, 2014). However, the degree to which either type of advice helps or hurts the advice seeker depends on the extent to which advice givers have similar motives and therefore come across as having similar or diverse perspectives.

In the context of advice exchange, the diversity of perspectives is perhaps the most important variable linked to performance improvement in the literature (e.g., Bonaccio & Paik, 2018; Budescu & Rantilla, 2000). In addition to linking several accuracy and performance benefits to diverse advice, scholars have found that advice seekers are more likely to use diverse advice than advice coming from people with similar perspectives (Bonaccio & Paik, 2018; Van Swol & Ludutsky 2007). Additional advice that comes from a different perspective helps the advice seeker also put previous advice in a new light and find new merits in it (Bonaccio & Dalal, 2006; Johnson et al., 2001). Evidence suggests that when using diverse perspectives, most advice seekers aggregate the advice received and act accordingly (e.g., Budescu & Rantilla, 2000; Johnson et al., 2001; Yaniv & Milyavsky, 2007).

However, advice seekers tend to give more consideration to diverse perspectives than advice coming from similar perspectives. Robust findings in the literature indicate that people tend to discount the advice they receive to a large degree and do not follow the recommendations as much as they should (e.g., Bonaccio & Dalal, 2006; Bonaccio & Paik, 2018; Ecken & Pibernik, 2016). Advice discounting occurs for various reasons, including assigning a larger weight to one's own opinion in either the short run (i.e., anchoring) or the long run (i.e., egocentric discounting), a belief that advice givers might not be fully aware of the advice seeker's situation, a belief that advice givers' perspective might be incorrect or bound by their own context, or a belief that advice givers might have different motives (Bonaccio & Paik, 2018). Discounting is less likely to happen when advice givers have diverse perspectives, as the diversity makes the advice seeker consider all advice in a new light (e.g., Bonaccio & Dalal, 2006; Bonaccio & Paik, 2018; Van Swol & Ludutsky, 2007).

For example, if a salesperson seeks advice from two colleagues, both of whom are under high team incentives (or team incentives are highly salient for them), he or she might perceive both as coming from a team contribution viewpoint and discount their advice. Extant research documents that colleagues who try to help their peers get on track with team incentives fail to sway them to use their advice (Friebel et al., 2017). Likewise, when both colleagues are under high individual incentives (or individual incentives are highly salient for them), the salesperson might perceive both as coming from a competitive perspective and discount their advice. Existing studies suggest that when people suspect that their advice givers have different motives than they

have, they are quick to discount the advice (Jungermann & Fischer, 2005).

However, when advice givers are under differing levels of team or individual incentives, advice seekers perceive them as having diverse perspectives and take all their advice into account. When advice givers have diverse levels of team incentives, aggregation of their advice will likely have a net positive impact, with advice seekers considering the helpful suggestion of the colleague with the high team incentive along with other advice and using it to form a course of action. On the other hand, when advice givers have diverse levels of individual incentives, the aggregation of the advice will likely have a net negative impact, with advice seekers using the potentially harmful suggestion of the colleague with high salience of individual incentives to form a decision. Therefore, diversity of advice givers' team incentives will likely help salespeople improve their performance, while the diversity of advice givers' individual incentives will likely hurt performance improvement.

This also means that when advice givers have diverse team incentives, seeking additional advice will be less beneficial, as it might drive down the already net positive impact of existing advice. Similarly, when current advice givers have diverse individual incentives, seeking additional advice will likely be more useful because it corrects the net negative impact of existing advice. Thus:

H5a Diversity of advice givers' team incentives is positively associated with the advice seeker's performance.

H5b Diversity of advice givers' team incentives negatively moderates the impact of the extent of advice seeking on performance.

H6a Diversity of advice givers' individual incentives is negatively associated with the advice seeker's performance.

H6b Diversity of advice givers' individual incentives positively moderates the impact of the extent of advice seeking on performance.

Methodology

Research setting and data collection

To test our hypotheses, we conducted a nationwide survey in cooperation with the inside sales organization of a fastening and assembly technology firm. The inside salespeople of the firm are assigned exclusively to one sales unit, which is responsible for conducting the entire sales process for customers in a specific geographic area. Across the units, all salespeople sell from an identical portfolio of products. Several prestudy in-depth interviews with managers and salespeople revealed that advice seeking is common for inside sales, making it a suitable context for addressing our research questions. In our empirical context, salespeople exchange advice both within their own unit and from inside-sales colleagues working in other units, for example, via chat or phone. The exchanged advice refers to, for example, the handling of specific customers, sales strategies, tactics, and administration (e.g., remote selling, billing, sales calls), as well as information on development opportunities within the company (e.g., promotion to a local branch manager).

To motivate the inside salespeople working in these units, the firm employed team-based and individual-based incentives including both monetary as well as non-monetary rewards. With regard to team incentives, the company's main instrument is a performance-based bonus (i.e., a team-based monetary incentive). This bonus is paid as a variable part of each salesperson's compensation after the unit reaches or exceeds the monthly target sales performance. The monthly target sales performance varies by unit since it is determined by the branch manager of the sales unit based on overarching annual targets assigned by the company's central sales management, considering the size of the unit and territory (e.g., a unit with eight employees in an urban area would have higher annual targets than a unit with two employees in a rural area). The bonus payout also varies by unit due to its tiered structure and relevant unit demographics that factor into the bonus potential determination. As a result, the company's team incentives vary across sales units, and more importantly, their perception is subject to variation. Moreover, because team incentives are given according to each unit's quota achievement, bonus payments received by each unit are independent of those received by other units, and therefore units are *not* competing for bonuses. In addition, the firm provided non-monetary incentives in the form of an incentive trip when the sales team reached or exceeded a rolling target sales performance (i.e., team-based non-monetary incentives). With regard to individual incentives, the company's main instruments were the top seller club prizes and status incentives, such as employee of the month awards (i.e., individual-based non-monetary incentives) or performance badges that come with monetary benefits, such as a club status bonus (i.e., bronze, silver, and gold), which depend partially on individual factors (i.e., individual-based monetary incentives). Notably, these incentives depend on a salesperson's individual performance relative to all salespeople in the organization. Because the local branch managers may choose to emphasize or deemphasize some individual incentives at their sales units, individual incentives also vary across sales units. For both team incentives and individual incentives, the company used objective hard metrics

as performance measures (i.e., booked revenues), and no incentives were granted for seeking or giving advice.

After consultation with the firm's senior management and a supportive internal announcement by the management, we invited all 637 salespeople working in 236 inside sales units to participate in the survey. We received usable responses from 540 salespeople (i.e., effective sample), representing 85% of the invited survey population—a high response rate compared with other studies that include social network data on advice seeking (e.g., Brailly et al., 2016; Brennecke & Rank, 2016; Hayati et al., 2018). To assess whether the effective sample is representative, we compared it with the survey population on various demographics. Because several chi-square goodness-of-fit tests indicated no significant differences between the population and effective sample (Web Appendix W2), the sample is unlikely to be biased (Hulland et al., 2018). We used this sample to conduct two empirical studies. Study 1 focuses on the antecedents of advice exchange, and Study 2 focuses on the consequences of advice seeking and their contingencies.

Study 1: Antecedents of advice exchange

In line with our research aims, we apply ERGMs to shed light on the social processes and salesperson attributes that drive advice exchange in sales.

Measures To measure the extent of advice exchange, we applied a common approach to collect social network data: the free-recall nomination method combined with an open-ended question format (Borgatti et al., 2018; Marsden, 1990). We asked each salesperson to nominate colleagues they contact most often in work-related matters (see Web Appendix W3 for the exact wording). From this network question, we generated an edgelist (i.e., a list of names that indicates ties between the actors). This list was processed into a directed network graph, illustrating the advice-seeking behavior in the entire sales organization in the form of instrumental ties. Table 4 provides descriptive statistics of the advice network including the 540 actors (i.e., salespeople) and 909 ties (i.e., relationships).

The measurement of our social processes examines the extent to which the different structural configurations of the common advice-seeking—that is, arc, reciprocity, popularity spread, and activity spread—appear in our observed network graph. Table 2 provides definitions of all constructs and explains what the underlying social processes capture. Lomi et al., (2014, Table 2) provide mathematical details.

Regarding salesperson attributes, we drew on academic scales (Web Appendix W4 lists items and measurement details). Specifically, to measure salience of team incentives and salience of individual incentives, we adapted the scale for variable compensation for innovation sales results (Hohenberg & Homburg, 2016, 2019).[1]

As control variables, we include unit ID as a uniquely identifiable number of every sales unit and past performance, which is a salesperson's monthly absolute revenue in the two years before the survey (i.e., t – 1, t – 2). In addition, we include company tenure (i.e., the number of years a salesperson has worked for the firm) and unit tenure (i.e., the number of years a salesperson has worked in the current sales unit). These are important variables to control for since performance and tenure can significantly predict advice seeking or advice giving (Hayati et al., 2018; Kim et al., 2016; Lim et al., 2020; Lomi et al., 2014). Moreover, we included the difference terms related to these factors as well since prior sales research has found that similarity in tenure and performance can facilitate knowledge sharing (Atefi et al., 2018).

Analytical procedure We applied ERGMs using the ergm package from the statnet suite of packages for statistical network analysis in R (Handcock et al., 2008; Hunter et al.,

Table 4 Study 1: Descriptive statistics of the advice network

Network information	
Number of actors (nodes, vertices)	540
Number of ties (dyads, edges)	909
Number of ties per actor	M = 1.68, Median = 1.0, SD = 1.92
Network-level statistics	
Density	.003
Centralization	.006
Reciprocity	.196
Transitivity	.331
Subgraph-level statistics	
Triad census[a]	300: 8
Clique census	330
Components	434
Isolates	98
Actor-level statistics	
In-degree centrality	.027
Out-degree centrality	.015
Closeness centrality	0
Betweenness centrality	.006
Eigenvector centrality	.451

[a]See Madhavan et al. (2004) and Wasserman & Faust (1994) for details on the different types of triads

[1] Study 2 and Web Appendix W4 provide details on measurement assessment. Given that all constructs used in Study 1 and Study 2 were captured in the same survey instrument, we conducted confirmatory factor analysis to assess the measurement.

2008). We discuss the so-called effects contained in the statistical models we use to test our hypotheses and describe our estimation process. Web Appendix W5 provides a detailed description of the ERGM calculation.

As indicated, ERGMs consider underlying social processes (i.e., relational properties of the focal network itself), investigated as structural effects. These structural effects test whether hypothetically possible configurations representing common forms of social exchange are present to a greater or lesser extent than expected in the observed social network (e.g., Ghosh et al., 2016). ERGMs also consider attributes of the actors (e.g., salespeople, properties outside the focal network) containing possible actor relation effects that enter the model specification in at least three ways: advice seeker effect, advice giver effect, and homophily or difference effect (Robins & Daraganova, 2013). The advice seeker effect reflects whether actors with a specific attribute are more or less likely to seek advice. The advice giver effect reflects whether actors with a specific attribute are more or less likely to give advice. Finally, the homophily or difference effect reflects whether advice exchange tends to occur between actors who are similar or different with respect to a specific attribute.

We apply all three actor relation effect types and fit them for each salesperson attribute we include (Robins & Daraganova, 2013). Thus, for continuous variables, a positive difference effect indicates differences between the actors in, for example, their tenures, whereas a negative value indicates similarity (i.e., homophily). Apart from assessing homophily or difference effects, we examine advice seeker and advice giver effects for our incentive and tenure variables.[2]

Drawing from prior research in related fields (Kim et al., 2016; Lomi et al., 2014), we employed a three-step model estimation process of the influence of underlying social processes and salespeople's attributes (Hunter & Handcock, 2006; Koskinen & Snijders, 2013). First, we estimated Model 1, which provides a baseline specification, controlling for the average tendency of salespeople to seek advice (i.e., arc), the simplest form of tie dependence (i.e., reciprocity), and the tendency for salespeople to seek advice from colleagues of the same sales unit (i.e., unit ID). Second, we calculated Model 2, which contains only actor relation effects (i.e., only salespeople's attributes) as a benchmark for comparison with a model with structural effects included (Kim et al., 2016). Third, we computed Model 3 as the full model, which comprises actor relation effects and structural effects (i.e., salesperson attributes along with underlying social processes). The results of all three models are summarized in Table 5. Details of the model specifications are available in Web Appendix W6.

Results As Table 5 shows, we found a negative and significant coefficient for arc, which is the baseline propensity for advice exchange. Thus, advice exchange occurs relatively rarely, corroborating H1a. Moreover, we found support for our hypotheses that ties are reciprocated (H1b) and that popular advice givers or active advice seekers are less likely to emerge in a sales context with both team and individual incentives (H1c and H1d). Additionally, we found support for the differential impact of team versus individual incentives on advice exchange. The perceived salience of team incentives is associated with advice giving, indicated by a positive and significant coefficient, but negatively relates to advice seeking (H2a and H2b). In addition, our results showed that the perceived importance of individual incentives is associated with advice seeking, indicated by a positive and significant coefficient of advice seeking, but negatively related to advice giving, indicated by a negative and significant coefficient (H3a and H3b).[3] Web Appendix W2 reports robustness checks and methodological specifics (e.g., nonresponse bias, endogeneity, unobserved heterogeneity).

Study 2: Performance consequences and contingencies of advice seeking

In line with our research aims, Study 2 examines the performance consequences of advice seeking and their contingencies. That is, the goal of Study 2 is to focus on those salespeople who *do* seek advice to understand under which conditions advice seeking contributes to salesperson performance.

Measures To assess salesperson performance, we used objective firm data on the realized sales revenue of a salesperson. Specifically, we operationalized salesperson performance as the natural logarithm of the average monthly

[2] Homophily or difference is measured differently, depending on whether the attribute is binary, continuous, or categorical. For example, unit ID is a categorical variable, for which homophily or difference is determined using the "matching effect," and a positive effect is indicative of homophily. In addition, the variables for incentives and tenure are continuous variables, and therefore homophily or difference is assessed using the "difference effect," which is measured by the sum of all ties between node i and j multiplied by the amount of the difference between the attribute values of node i and j (i.e., calculation of the absolute difference in scores; Robins and Daraganova (2013)).

[3] Since the date of tie formation is not observed, we explained the results as an association rather than strong causal links (thanks to the suggestion of an anonymous reviewer). However, conceptually, the hypothesized directions (salience of team and individual incentives promoting/discouraging advice seeking/giving) make more sense than the reverse causality version (advice exchange driving the salience of incentives). Other controlled variables, such as tenure, are fixed properties unlikely to change through advice exchange.

Table 5 Study 1: ERGM parameter estimates for advice seeking in sales units

Parameter	H	Model 1 Baseline	Model 2 Actor relation effects only	Model 3 Actor relation effects and structural effects
Underlying social processes (structural effects)				
Arc	H1a ✓	-6.20 (.04)**	-6.85 (.01)**	-6.07 (.02)**
Reciprocity	H1b ✓	2.39 (.18)**	2.39 (.01)**	2.38 (.03)**
Popularity spread	H1c ✓			-.98 (.01)**
Activity spread	H1d ✓			-2.23 (.01)**
Control variable: Within-unit focus				
Unit ID (matching)		3.95 (.09)**	4.08 (.01)**	3.80 (.02)**
Salespeople's attributes (actor relation effects): Incentives				
Salience of team incentives (difference)			.16 (.00)**	.11 (.00)**
Salience of team incentives (advice seeking)	H2a ✓		-.05 (.00)**	-.04 (.00)**
Salience of team incentives (advice giving)	H2b ✓		.10 (.00)**	.09 (.00)**
Salience of individual incentives (difference)			.09 (.00)**	.10 (.00)**
Salience of individual incentives (advice seeking)	H3a ✓		.07 (.00)**	.05 (.00)**
Salience of individual incentives (advice giving)	H3b ✓		-.03 (.00)**	-.02 (.00)**
Salespeople's attributes (actor relation effects): Controls				
Company tenure (difference)			.00 (.00)	-.00 (.00)**
Company tenure (advice seeking)			-.03 (.00)**	-.02 (.00)**
Company tenure (advice giving)			.03 (.00)**	.03 (.00)**
Unit tenure (difference)			.13 (.00)**	.11 (.00)**
Unit tenure (advice seeking)			-.06 (.00)**	-.06 (.00)**
Unit tenure (advice giving)			-.11 (.00)**	-.09 (.00)**
Past performance (difference)			-.00 (.00)**	-.00 (.00)*
Past performance (advice seeking)			.00 (.00)	.00 (.00)
Past performance (advice giving)			.00 (.00)	.00 (.00)
Model information				
AIC		10,101	9,897	9,523

*$p < .05$; **$p < .01$. Standard errors (SEs) are in parentheses. AIC = Akaike information criterion goodness of fit. For effect illustrations, see Table 2

revenue of each salesperson in the year after the survey, calculated as the absolute revenue realized in t + 1 divided by the number of months a salesperson worked for the company in t + 1. Also, using a year's average monthly revenue instead of a year's absolute revenue allows for a better comparison in case salespeople have started or ended working for the company during a year.

To operationalize the extent of advice seeking, we again used the list of names generated from the free-recall nomination method from Study 1 (see again Web Appendix W3). That is, the extent of advice seeking refers to how many colleagues a salesperson consults for guidance on a particular work-related issue. To operationalize the diversity of advice givers' team and individual incentives, we used the survey responses of a salesperson's designated advisers. In the survey, all salespeople reported the extent to which team and individual incentives are used in their respective sales units (Hohenberg & Homburg, 2016; Podsakoff & MacKenzie, 1994). For each advice-seeking salesperson, we calculated the standard deviations of the responses on the extent of team and individual incentives across all peers from whom the salesperson had reported seeking advice (i.e., the advice givers).

Last, we included a rich set of control variables in our model to account for individual and situational factors that may influence salesperson performance (see Fig. 1 for the list of controls). Detailed descriptions of the selection of controls in Study 2 are available in Web Appendix W7. Table 6 summarizes the descriptive statistics and correlations of Study 2's variables.

Measurement assessment and analytical procedure To assess measurement reliability and validity for all reflective constructs, we conducted confirmatory factor analyses. The results based on all survey responses revealed that our scales achieved sufficient psychometric properties by surpassing recommended thresholds (Bagozzi & Yi, 2012) (Web Appendix W4 provides details). Composite reliabilities of all

Table 6 Study 2: Descriptive statistics and correlations

	Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	Salesperson performance	11.11	.90	—																		
2	Extent of advice seeking	3.31	1.37	.16*	—																	
3	Diversity of advice givers' team incentives	.89	.66	-.01	.13	—																
4	Diversity of advice givers' individual incentives	1.00	.68	-.02	.14	.62**	—															
5	Past performance (t – 1)	11.11	.95	.78**	.17*	-.09	-.07	—														
6	Past performance (t – 2)	10.98	1.03	.57**	.12	-.13	-.06	.76**	—													
7	Average extent of advice givers' team incentives	4.75	.81	-.08	.01	-.23**	-.04	-.10	-.10	—												
8	Average extent of advice givers' individual incentives	4.09	.79	-.13	-.05	-.28**	-.01	-.17*	-.08	.57**	—											
9	Extent of team incentives	4.80	1.41	-.05	.07	-.01	-.07	-.05	-.03	.19*	.09	—										
10	Extent of individual incentives	4.01	1.63	-.11	-.03	-.01	-.05	-.08	-.07	.19*	.25**	.50**	—									
11	Supervisor supportiveness	5.72	1.39	-.02	.02	-.11	-.08	-.02	.04	.07	.20**	.18*	.38**	—								
12	Supervisor centrality	3.75	1.59	-.01	-.03	.14	.17*	-.02	-.08	-.18*	-.24**	-.12	-.13	-.26**	—							
13	Collaboration intensity within unit (employee's perception)	5.45	1.35	-.11	.02	-.17*	-.20**	-.05	.05	.13	.24**	.12	.19*	.21**	-.18*	—						
14	Collaboration intensity within unit (supervisor's perception)	3.71	1.57	-.19*	-.02	-.09	-.06	-.12	-.09	.17*	.26**	.21**	.54**	.56**	-.22**	.26**	—					
15	Collaboration with other units	5.02	1.35	-.08	.02	-.11	-.08	-.14	-.12	.19*	.17*	.31**	.31**	.29**	-.25**	.22**	.32**	—				
16	Peer pressure	3.08	1.71	.07	-.10	.05	.03	.09	.07	-.05	-.04	-.17*	-.02	-.22**	.29**	-.25**	-.13	-.21**	—			
17	Unit size	4.18	3.53	-.25**	-.01	-.10	-.12	-.12	-.04	-.07	-.13	.06	-.01	.02	.04	.06	.07	.01	.10	—		
18	Company tenure	11.12	8.27	-.21**	-.18*	-.05	-.10	-.12	-.13	.04	.03	.15*	.19*	.05	.03	.13	.08	.19*	-.01	.18*	—	
19	Age	38.74	10.89	-.14	-.16*	.03	.08	-.14	-.08	.09	.11	.11	.15*	.06	.03	.06	.07	.24**	.03	.04	.55**	—

*$p < .05$; **$p < .01$. t = investigation period. Effective sample in Study 2 comprises those salespeople who sought advice from at least one colleague (i.e., extent of advice seeking > 0)

Table 7 Study 2: Results of regression analysis and robustness checks

Dependent variable: Salesperson performance	H	Model 4 Revenue	Model 5 Revenue	Robustness checks		
				Model 6 Revenue	Model 7 Profit	Model 8 Profit
Extent of advice seeking	H4 (✓)	.09*	-.01	-.01	-.01	-.01
Diversity of advice givers' team incentives	H5a ✓	.31*	.29*	.30*	.29*	.30*
Diversity of advice givers' individual incentives	H5b ✓	-.37*	-.23*	-.24*	-.23*	-.24*
Extent of advice seeking × Diversity of advice givers' team incentives	H6a ✓	-.20*	-.15*	-.16*	-.15*	-.16*
Extent of advice seeking × Diversity of advice givers' individual incentives	H6b ✓	.23*	.17*	.17*	.17*	.17*
Controls						
Past performance (t – 1)			.73**	.74**	.75**	.76**
Past performance (t – 2)			-.04	-.04	-.05	-.05
Average extent of advice givers' team incentives			.01	.00	.00	-.00
Average extent of advice givers' individual incentives			.01	.03	.02	.04
Extent of team incentives			.01	.01	.01	.01
Extent of individual incentives			-.01	-.01	-.01	-.01
Supervisor supportiveness			.05	.04	.05	.04
Supervisor centrality			.01	.01	.01	.01
Collaboration intensity within unit (employee's perception)			-.02	-.02	-.02	-.02
Collaboration intensity within unit (supervisor's perception)			-.07*	-.07*	-.07*	-.07*
Collaboration with other units			.06	.06	.06	.06
Peer pressure			.01	.01	.00	.00
Unit size			-.04**	-.04**	-.04**	-.04**
Company tenure			-.01*	-.01*	-.01*	-.01*
Age			.00	.00	.00	.00
Gender			-.01	-.01	.00	.00
Territory (dummies)			Included	Included	Included	Included
Additional Interactions						
Extent of advice seeking × Average extent of advice givers' team incentives				.00		.00
Extent of advice seeking × Average extent of advice givers' individual incentives				-.01		-.01
Model Information						
R^2		.05	.73	.73	.73	.73

*$p < .05$; **$p < .01$. t = investigation period. The effective sample in Study 2 comprises those salespeople who sought advice from at least one colleague (i.e., extent of advice seeking > 0). For the robustness checks with profit as a dependent variable (Models 7 and 8), past performance refers to profit instead of revenue. We mean-centered all predictor variables before including the moderating effects. Condition indices and variance inflation factors of the coefficients indicate that multicollinearity is not a concern

constructs are greater than 0.70, average variance extracted (AVE) is greater than 0.50, and Cronbach's α is greater than 0.70. Almost all item loadings are greater than 0.70. Finally, the square root of the AVE for each construct exceeds the correlation with the other framework constructs, meeting the criterion of Fornell and Larcker (1981) and supporting desired discriminant validity of the included constructs.

To test our hypotheses, we ran ordinary least squares regressions using R. We mean-centered all predictor variables before including the interaction effects (Hofmann, 1997). We first estimated a model including only our hypothesized effects (Model 4) before including the controls (Model 5). Table 7 shows the results for the relationship between the extent of advice seeking and salesperson performance (for details of the model specifications, see Web Appendix W6).

Results Overall, the results reveal support for the hypothesized effects in Study 2. In support of H4, Model 4 shows that the extent of advice seeking positively affects salesperson performance (b = .09; $p < .05$). However, when including controls, Model 5 reports no significant effect (b = –.01; $p > .1$), which implies that the effectiveness of advice seeking strongly depends on contextual factors. Regarding the other hypotheses, both models are highly consistent. Specifically, in line with H5a and H5b, Models 4 and 5 show a

positive effect of the diversity of advice givers' individual incentives (b = .31 and b = .29; $p < .05$) and a negative effect of the diversity of advice givers' team incentives (b = –.37 and b = –.23; $p < .05$) on salesperson performance. Finally, both Models 4 and 5 show support for H6a and H6b. More precisely, the extent of advice seeking negatively interacts with the diversity of advice givers' team incentives (b = –.20 and b = –.15; $p < .05$) and positively interacts with the diversity of advice givers' individual incentives (b = .23 and b = .17; $p < .05$).

To confirm the robustness of the findings, we conducted various checks. Specifically, we estimated models including additional interactions of advice seeking with the average extents of advice givers' team and individual incentives (Model 6 in Table 7), using an alternative dependent variable (i.e., profit; Model 7), and both (Model 8). Web Appendix W2 provides details on these robustness checks as well as established bias checks (e.g., nonresponse bias and common method bias) and remedies.

Discussion

Despite the importance of advice exchange in sales, several questions remain regarding what factors drive the creation of advice exchange ties in sales and how incentives may influence the motives and value of advice within a social network (Table 1). Our research provides insights through a large-scale field study with 540 salespeople at a leading B2B company. Study 1's ERGM results reveal that individual incentives promote advice seeking but discourage advice giving, and team incentives stimulate advice giving but reduce advice seeking. Study 2's results suggest that the effectiveness of advice strongly depends on advice givers. In particular, when advice givers have diverse team incentives, the advice is more effective and the need for additional advice is reduced, while diversity of advice givers' individual incentives hurts performance, and thus additional advice is required.

Theoretical contributions

Our study's approach and findings contribute to the literature in at least three ways. First, this study is the first to examine various social processes (i.e., structural effects) that determine advice exchange in sales and to apply the new ERGM framework to investigate such exchange. The findings imply that advice seeking is strongly governed by underlying social processes that may differ from those in other work contexts. Compared to other work contexts, advice seeking in sales is less prevalent. The findings also reveal that underlying social processes, in which one employee is asked for advice by many colleagues or one employee seeks advice from many colleagues, are less likely in sales. In other words, we find that salespeople, particularly under coopetition, are less likely to seek advice compared to other employees in other contexts. By contrast, previous studies in other work contexts have found that these underlying social processes are more likely (e.g., a trade fair of distributors and producers of TV programs in Brailly et al., 2016) or not significantly different than chance (e.g., networks of executives in Kim et al., 2016). Thus, the study emphasizes the unique features of advice seeking in sales, underscoring the need for more nuanced investigations of social behaviors in the sales context.

Second, this study examines the salience of incentives as salesperson attributes that differentially determine advice exchange in sales. Previous research has shown that extrinsic motivation promotes knowledge exchange in teams (David et al., 2020) and that reaching out to people is generally based on the desire for novelty and engagement (Walter et al., 2015), as well as the prospect's accessibility and trustworthiness (Hofmann et al., 2009). Missing, however, is consideration of the tension created by the presence of both competitive and collaborative motives stemming from the simultaneous usage of team and individual incentives. Drawing from the literature on team and individual incentives, we argue that individual incentives motivate salespeople to improve but, at the same time, heighten competition, which explains why such incentives promote advice seeking (improvement motive) but discourage advice giving (competition motive). Moreover, team incentives both underscore the importance of and trigger the reliance on the collective effort of the team (Barnes et al., 2011; Karau & Williams, 1993), which explains why such incentives encourage advice giving (to ensure teammates put in their share of effort) but decrease the likelihood of advice seeking (reduced focus on one's own effort). The results provide support for this theorizing, thus highlighting the need for differentiated and context-specific investigations of social behavior. Such studies would be of high academic value, as they would provide insight into which findings from broader settings generalize and which findings are context specific.

Third, this study considers in more detail the type of advice salespeople receive from their colleagues and how different types may have varying value. By contrast, prior work on social networks in sales has taken a structural perspective and thus implicitly assumed that all network ties are equally important or useful (Brass & Borgatti, 2020). We theorized and found that seeking advice from more people improves performance, but we also argued that the effectiveness of advice depends on whom the advice is sought from and how diverse the perspectives of the advice givers are. These findings highlight the need for sales research to move beyond structural approaches to social networks and

also consider the nuances of tie formation, tie importance, and tie usefulness.

Managerial implications

Our results offer important insights to managers. In particular, our findings reveal the opposing effects of team and individual incentives on the likelihood of advice exchange as well as the usefulness of advice and its performance implications. While sales leaders who add team incentives often intend to foster collaboration in their sales force, the impact of such incentives on collaboration is very different from other non-competing functions. This is mainly because the individual incentives that most sales organizations put in place are typically designed to spur competition among salespeople. The presence of both team and individual incentives thus creates a complex dynamic with opposing forces of collaboration and competition. To reduce such tensions, sales leaders can provide team incentives for specific tasks and disentangle performance on those tasks from individual incentives created for other tasks. For instance, sales leaders can provide separate team bonuses or rewards to promote cross-selling or team-selling activities among salespeople to facilitate sharing of customer and product information or advice exchange in difficult selling situations, but exclude performance on such occasions from the overall leaderboard or contest. This approach would ensure that competitive motives do not hamper collaboration.

Another possibility that is rarely applied in practice is incentivizing collaboration by including advice givers in the overall individual leaderboard. For instance, winners of a sales contest can be asked to mention their helpers and advisers, with those colleagues also being rewarded for their help. In addition, sales organizations can more formally reward advice exchange by creating programs in which star salespeople partner with weaker salespeople or new hires and help them improve their performance, in exchange for receiving a bonus or partial commission for the first two or three successful sales of their partner. Such programs exist in some organizations between managers and new hires (Viswanathan et al., 2018), but they can be implemented among colleagues as well.

Finally, results reveal that long company tenure and unit tenure of salespeople is associated with less advice seeking. We therefore recommend that managers who want to increase advice seeking in their sales units consider implementing horizontal career paths for salespeople. Anecdotal evidence indicates that, particularly in the sales context, promoting employees solely based on performance is not necessarily the most effective approach and that other development paths can also be very useful (Lilien & Grewal, 2012). Our results strengthen this view, as salespeople who have worked in the company for a long time are generally more likely to be advice givers. However, salespeople who work in the same unit for a long time are actually less likely to be advice givers. Managers could approach these salespeople with opportunities with a focus on horizontal development to find natural offshoots of their current responsibilities to create a more effective, socially connected, and supportive salesforce.

Limitations and future research directions

This research has several limitations that provide opportunities for further research. First, owing to the cross-sectional nature of the collected survey data, Study 1 is correlational. While this limitation is common for studies using ERGMs (Duxbury, 2018), we encourage future work on advice seeking to use different empirical approaches, such as laboratory experiments, to fully isolate the causal effects related to the antecedents of advice exchange in sales.

Second, while this study focused on scrutinizing "solution advice," which is particularly common in sales, prior work indicates that other forms of advice exist, such as "problem reformulation" (Cross et al., 2001). Although we do not expect the drivers of these other forms to differ substantially from the investigated solution advice, we encourage future work to directly examine these forms. Furthermore, to unpack more details about advice seeking in sales, research that differentiates instrumental from relational ties and strength from quality of ties (Granovetter, 1973) and also explores temporal aspects of how advice seeking evolves over time would be valuable.

Third, this study disentangles several unique structures and attributes that drive advice seeking in sales. Future work could build on these insights in various ways. For example, future investigators could examine other social behavior in sales units, such as information exchange via sales learning platforms or mentoring relationships. In addition, studies could examine how the investigated actor attributes under consideration of the underlying social processes differ in their explanation of advice seeking in other entities, such as new product development units or adaptive business units.

Fourth, for our empirical investigation, we collaborated with the inside sales organization of a global B2B supplier. While we expect the hypothesized effects to generalize to other sales settings characterized by the coopetition nature of inside sales, we recommend that future research directly examines these settings. For example, more consultative or complex selling settings (e.g., field sales force, key account management) may be associated with different functions and units, which may help tease out more of the nuances related to the role of different dimensions of tenure (e.g., company tenure vs. unit tenure vs. functional tenure) in driving advice exchange in sales.

Fifth, our framework and hypotheses relate to the salience of individual versus team incentives because these incentives promote a diverging focus on competition versus collaboration. Both types of incentives have monetary and non-monetary components in our empirical setting. Future work can explore the monetary and non-monetary nature of incentives and tease out its impact on advice exchange and collaboration.

Sixth, future research can also explore situations where advice seekers know a priori the advice givers' stance on certain issues that might bias their advice. A promising avenue is to investigate how such knowledge can change the advice seeker's choice of whom to seek advice from and the degree of advice utilization.

Seventh, an interesting future direction could be examining the effectiveness of formal advice-giving sessions, which are employed by many organizations. For instance, a large B2B finance firm uses such sessions to facilitate collaboration and generate ideas for improvement. The effectiveness of these sessions in the presence of competition would be an interesting topic for further investigation.[4]

Eighth, we used a one-way free nomination recall to collect our network information, following the best practices in network research (e.g., Borgatti et al., 2018). Such methodologies rely on and assume the accuracy of self-reported relationships. Future research can use a two-way nomination, asking individuals to name colleagues from whom they seek advice along with the colleagues to whom they give advice, and then cross-validate these lists.

Ninth, while the ERGM framework captures a main effect for the general likelihood of reciprocity in the network, it does not allow capturing the impact of actor relations, such as incentives, on reciprocity. Future research can specifically focus on modeling this feature of the network.

Tenth, due to the limitations of our field research, we could not control for specific ways that individuals weigh the advice they receive. Further research, in either lab or the field, can study and control for such weighting schemes.[5]

Finally, addressing unobserved heterogeneity in ERGM networks is currently carried out for undirected social networks (Box-Steffensmeier et al., 2018), while our network is a directed one, a limitation that future research can overcome. The work of Ameri et al. (2022) and similar other creative ways to address this issue can guide such future endeavors.

[4] We thank an anonymous reviewer for this suggestion.

[5] A similarity-based weighting scheme carried out for firms can be found in the Web Appendix D of Lim et al. (2020).

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Declarations

Conflict of interest The authors declare that they have no conflict of interest regarding the submitted manuscript "JAMS-D-20–00580.R5 'Coopetition' in the presence of team and individual incentives: Evidence from the advice network of a sales organization".

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