Social Networks and Sales Performance

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Resumo

Este artigo trata do impacto das redes informais na melhoria no desempenho de vendedores. Redes informais criam uma estrutura que supera a hierarquia formal de uma organização. O foco deste artigo está na rede de aconselhamento e em duas estruturas de rede que têm impacto no desempenho. A pesquisa observou vendedores que desenvolvem uma estrutura coesa, de acordo com a visão de James Coleman, ou uma estrutura que contém buracos estruturais, segundo Ronaldo Burt. Foi incluído também no modelo de análise a questão da força dos laços, de acordo com o trabalho seminal de Mark Granovetter de 1973. Dados censitários de uma organização foram coletados de cerca de 500 funcionários de uma empresa fornecedora de material para a produção agropecuária que conta com 23 filiais. A estimação de uma amostra de 101 vendedores desta empresa mostrou a importância de estruturas coesas, mediante a métrica de centralidade de grau, para as três medidas de desempenho dos vendedores. Laços fortes têm também impacto positivo no desempenho, o que sugere a importância da construção destes laços com membros da rede. Idade, tempo de casa e nível educacional também são suscetíveis de causar impacto no desempenho. Estes resultados implicam que a empresa deve estimular contatos entre colaboradores, para permitir a melhor difusão de informações técnicas e comerciais.

Palavras-chave: redes; gestão de vendas; desempenho; centralidade.

Abstract

This paper argues that an informal network can itself be a basis for the increase in a sales manager's performance. Informal networks create a structure that surpasses the formal hierarchical structure defined by the firm. We concentrated on the advice network and considered two different views of network structure that claim to have impact on performance. To explore this claim, we examined whether sales managers develop either a highly cohesive network structure (*i.e.* Coleman's view) or one containing structural holes (*i.e.* Burt's view) in order to achieve higher sales. We also investigated the matter of tie strength put forward by Granovetter in his seminal 1973 work. Census data was collected from about 500 personnel from an agricultural input retailer having 23 divisions. Estimates from a sample of 101 sales managers showed the importance of a highly cohesive structure (degree centrality) for the three measures of sales manager's performance. The strong ties have a positive impact on performance, suggesting the importance of building up strong bonds with network contacts. Sales managers' age, time within the retailer and education also influence performance. These results imply that firms should stimulate contacts among personnel to spread technical and commercial information.

Key words: networks; sales management; performance; centrality.

Introduction

A rich body of work from the cognitive sales research tradition demonstrates the relationship between knowledge structure and salesperson performance (Weitz, Sujan, & Sujan, 1986). For example, research indicates that more effective salespeople have richer and more interrelated knowledge structures about their customers (Sujan, Sujan, & Bettman, 1988), rely on more distinctive selling scripts (Leigh & McGraw 1989; Leong, Bush, & John, 1989; Matsuo & Kasumi, 2002), organize and weight the category attributes of a sale situation differently (Szymanski & Churchill, 1990), and possess more categories in their memories (Sharma, Levy, & Kumar, 2000) than do less effective salespeople. They also create information-search networks to gain access to critical information about customers (Gonzalez, Kapelianis, Walker, & Hutt, 2007).

While providing valuable insights into salesperson performance, recent trends in theory and practice highlight an important gap in the socio-cognitive sales paradigm (Jones, Brown, Zoltners, & Weitz, 2005; Weitz & Bradford, 1999). No studies, to our knowledge, have examined the salesperson (hereafter referred to as sales managers) network structure and the matter of weak ties. There is a diverging view of network structure in the literature. Coleman (1988) argued that having a network of a certain configuration (*e.g.* highly cohesive, wherein all the actors are closely connected) allows for the effective exchange of information. Burt (1992) argued a more 'strategic' perspective where actors can gain informational benefits of access, timing and flows when their contacts do not know each other. Both views argue about how the structure of the firm affects members in the network. While Coleman (1988) states that everyone in the network benefits, Burt (1992) states that certain actors will, in certain ways, benefit more than others. In addition, literature on networks states that tie strength may have an impact on performance. Even though, intuitively, strong ties appear to be of importance, Granovetter (1973) showed how the strength of weak ties helps candidates in their job searches.

These elements of network structure invite further work to theoretically and empirically examine the impact of tie strength and a salesperson network structure (*i.e.* highly cohesive of Coleman's view and structural holes of Burt's view) on sales performance. There is certainly no unanimity as to which network structure better impacts performance. Also, there is little agreement on the proper use of the centrality position in a network or on the impact of tie strength.

The goal of our paper is to investigate the structure of a sales manager's network and its influence on performance. The definition we used for advice networks are those that indicate who goes to whom for technical or work-related advice. To empirically test our three hypotheses, empirical census data was collected from about 500 personnel of an agricultural input retailer with 23 divisions. We mapped the sales managers' networks: their friendship network contained 1,284 ties and the advice network 774 ties. To test our hypotheses, regression models were estimated, considering a sample of 101 sales managers.

The concept of network structure will be explored in the following section. First, we take up the purpose of advice networks and then examine the centrality concept as it refers to positioning within the network structure. In the second section, the hypotheses are developed, based upon a literature review of networks and sales forces. Then, the methodology is presented in the third section, followed by the results. At the end, we present the discussion and conclusions section.

Social Networks

Burt (2005) defines social capital by its function, building upon Coleman's (1988) discussion of social capital. According to these two highly regarded authors, social capital is not a single entity but a variety of different entities having two characteristics in common: they all consist of some facet of the social structure and they facilitate certain actions of individuals who are within the structure. Like

other forms of capital, social capital is productive, making possible the achievement of certain goals that would not be attainable in its absence (Krackhardt & Hanson, 1993). It consists of a social structure formed by persons or corporate actors. Unlike other forms of capital, social capital is inherent within the relationship structure between actors and among actors.

In sociological terms, each actor has control over some resources (*i.e.* information) and an interest in certain resources and events, therefore social capital constitutes a particular kind of resource available to an actor (Lin, 1988). The concept of social capital considers taking information and finding out how to combine it with other resources to produce different system-level outcomes or, in other cases, different results for individuals.

Information is essential in any business setting and provides the basis for action in a social structure. Information can be expected to be spread across many people in a market, but it will circulate within groups before it circulates between groups (Watts, 2004). However, information acquisition is costly. At the very least, attention is required, which is always in scarce supply. One manner in which information can be acquired is by the use of social relationships, which are maintained for different purposes.

Social relationships within a network may be assessed as a multidimensional concept. One critical issue is which network relations allow a sales manager to increase net sales? A network composed of incidental communication links, such as mechanical "**How do you do?**" exchanges may not be as rich in relevant information as a network composed of critical advice relationships. It is not surprising when you meet a person at an academic, social or professional event and find out that you two have a friend in common. In the literature, the term 'small world' is often associated with the fact that people in different geographic locations may be connected through only a few intermediaries. Barabasi (2003) and Watts (2004) showed how close people are connected to each other through a small number of connections or intermediaries. Granovetter (1973) also showed that weak ties are actually related to intermediaries. Therefore, an investigation of the different structures of networks is necessary to evaluate the impact of networks. Networks may be structured in a close design (close knit group) or in a structural hole design (with intermediaries).

Centrality: Closure and Structural Holes

Closure and structural holes have been the foundation for studies on networks (see examples Burt, 2005; Palmatier, 2008). These two mechanisms do not assume that networks replace information as much as they affect its flow and what people can do with it. According to Granovetter (1994), both mechanisms begin with the assumption that communication takes time, so previous relationships affect who knows what. Even though the two mechanisms share the same assumption, they are discrete.

In closure, it can be said that people are always doing things for each other. Closure depends on two elements: trustworthiness of the social environment – which means that obligations will be repaid – and the actual extent of social norms (Coleman, 1988). Social norms by nature limit negative external effects and/or encourage positive ones. In some cases, the norms are internalized through individuals' social principles and values. In others, they are largely supported through external rewards for selfless actions and disapproval for selfish actions. Nevertheless, whether supported by internal and/or external sanctions, norms of this sort are important in overcoming opportunistic behavior in collective action. Norms are intentionally established as means to reduce negative externalities, and their benefits are captured by those who are responsible for establishing them. However, the capability of establishing and maintaining norms depends on some properties of the closure structure that are affected by one actor's actions over which another actor does not have control.

Closure of the social structure is important not only for the existence of effective norms but also for another form of benefit: the trustworthiness of social structures that allows the proliferation of obligations and expectations. Defection from an obligation is a form of imposing a negative externality

on another. Reputation arises in closure, and collective sanctions ensure trustworthiness. Closure may then be understood as a group within which there is extensive trust, and social norms create a positive environment for bonding.

Recent literature suggests the use of degree centrality to capture closure (Krackhardt, 1990). Degree centrality refers to the maximum possible degree that falls on the geodesics (*i.e.* the shortest path between points on the space) between the largest possible number of other points and, since it is located at the minimum distance from all other points, it is maximally close to them (Freeman, 1979). We can expect from this definition that the degree is associated with the potential activity in communication of people in the network. It is reasonable to assume that a person who is in a position that permits direct contact with many others should begin to see himself, and be seen by those others, as a major channel of information. At least with respect to the others with whom he is in contact, he is a focal point of communication. He is likely to develop a sense of being in the mainstream of information flow in the network (Burt, 2007). A person in such a position can influence the group by withholding or distorting information in transmission.

Structural holes are the gaps in information flow structure between clusters of connected people (Burt, 1992). A structural hole between two groups means that some people are unaware of other people. This happens because people are focused on their own activities and forget to look at others. The argument that underlies structural holes is the participation in and controlling of the process of information sharing, which allows for a brokerage opportunity. Several authors have shown the importance of such a brokerage opportunity. We find evidence in the work of Granovetter (1973) on the strength of weak ties, Freeman (1977) on **betweenness** centrality, Cook and Emerson (1978) on the benefits of having exclusive exchange partners and Burt (1980) on the structural autonomy created by complex networks. They all agree that structural holes create a competitive advantage for an individual whose relationships span the holes.

Structural holes separate non-redundant sources of information, sources that are more complementary than overlapping (Cross & Cummings, 2004). There is also the potential for having a control advantage. The holes among a broker's contacts mean that he can broker communication while displaying different beliefs and identities to each contact. As with closure, the idea of structural holes is often addressed in literature by the concept of centrality. There is a common sense that **betweenness** centrality is an important structural attribute of social networks (*e.g.* Burt, 2007; Cross & Prusak, 2002). Table1 below summarizes the important issues that differentiate the network structures.

Table 1

Issues Concerning Network Structure

Brokerage as Social Capital	Closure as Social Capital
Static	
Value of non-redundant information	Value of redundant information
Control through regulating the flow of information	Control through sanctioning and amplification of existing opinion
Center in a star-shaped structure	Dense local structure
'Strength of weak ties'	'Strength of strong ties'
Dynamic	
Striving for non-redundant ties, brokerage position, and open triads	Striving for redundant ties and closed triads
Preferring ties with unconnected alters	Preferring ties with connected alters
Social Context	
Competitive and entrepreneurial settings	Cooperative and collaborative settings
Acquisition of private goods	Production of collective goods

Figure 1 presents a simplification of a social network. Imagine a sales manager D connected to several individuals who are connected with each other. Here we assume reciprocal ties where D is acquainted with others and vice versa. The sales manager D holds the higher score for degree centrality. On the other hand you have another sales manager H who is the only linkage between one side and the other of the network. In this case, H has the highest **betweenness** centrality.
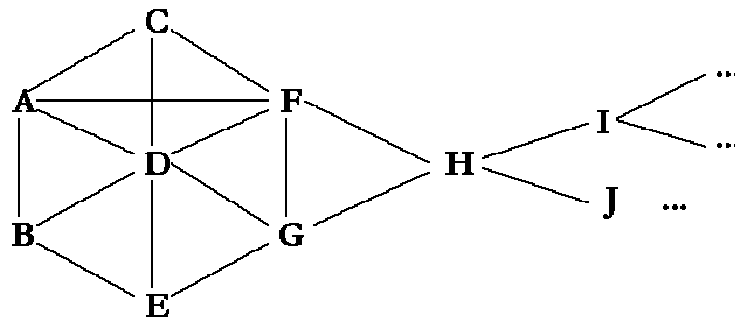

Figure 1. Degree and betweenness Centrality.

Hypotheses

For this study, we develop three hypotheses about sales managers' social networks and sales performance. The research model, including the hypotheses, is presented in Figure 2.
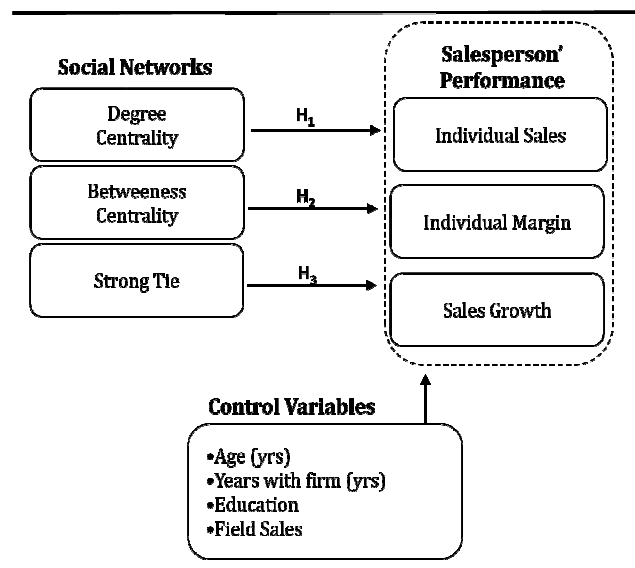

Figure 2. Research Model and Hypotheses.

When a sales manager asks for information from a contact, thus incurring an obligation, he does so because the information may help him in addressing some needs and/or capturing some benefit (Jones *et al.*, 2005). For instance, the information may be critical to close a deal with a client. The manager does not consider that it does the other a benefit, instead he adds to a 'fund of social capital' that will be available in a time of need. This reinforces the relationship between the two actors by creating an environment for exchange of information – or favors. Similarly, trustworthiness is a source of social capital. A sales manager's trustworthiness will facilitate others' actions. A sales manager, who serves as a source of information for another individual, does so because he is well informed for his own benefit; not for the others who make use of such information. By means of such a fluid flow of information, we expect that the sales manager will increase his or her sales (Matsuo & Kusumi, 2002).

As sales managers are concerned about their own sales, it is expected that advice information is prioritized. These managers have been overloaded with bureaucratic work about customers' profiles, sales reports, expense reports, and activity reports (Sujan *et al.*, 1988). As time has become scarce for these managers, they will try to focus on work related information. In addition, sales managers tend to be physically separate, which requires certain resources to keep contacts viable. Resources like telephone and email are used to complement face-to-face contacts with others. Considering these thoughts, we hypothesize that:

H1: Sales managers with a high degree of centrality (*i.e.* closure structure) in an advice network achieve high performance.

Sales managers connected across a structural hole explore the benefits of **betweenness** centrality (Freeman, 1977). They have broader access to information because of the diversity of their contacts. This means they are aware of new opportunities earlier and more often than their close contacts. **Betweenness** centrality allows sales managers to get timely access to information from other divisions or the headquarters. Sales managers are also likely to be considered as potential candidates for inclusion in new job opportunities and they also have more control over some benefits. Sales managers located centrally within structural holes are likely to have sharpened and displayed their capabilities because they have more control over the essence of their work due to their relationships with subordinates, superiors and colleagues (Jones *et al.*, 2005). These benefits reinforce one another at any moment in time and accumulate over time.

As sales managers need complex technical and commercial information, one might suggest that they will focus on the advice network (Gonzalez *et al.*, 2007). In order to offer value to customers, the managers will create bridges between clusters separated by the holes. Information about work is critical and sales managers will look for it to achieve higher performance. Therefore, we expect that:

H2: Sales managers with a high **betweenness** centrality (*i.e.* brokerage position) in an advice network achieve high performance.

Tie strength has attracted the majority of research attention ever since Granovetter's seminal work about the strength of weak ties. Recent research has emphasized the importance of strong ties (Burt, 2007). Strong ties refer to the intensity of ties by means of the depth of friendship. These ties are complete with intimacy, animosity and emotional closeness. People feel more comfortable when they are among friends (Coleman, 1990). Sales managers may get access to valuable information in his or her group of close friends. The information on these structures may allow for cross-checking with close friends, and the reliability of the information and the details can be easily verified. Therefore, we hypothesize that:

H3: Sales managers holding strong ties achieve high performance.

In addition to the social network variables, we controlled for other factors that may impact performance. The age of a sales manager might positively influence his performance. One might suggest that with age, a manager gains experience and becomes better prepared for the challenges of selling. Years with the firm can impact performance for the same reasons as age and additionally managers more familiar with the firm's procedures tend to learn and use more efficient ways to deal with the system. The education level is also expected to have a positive impact on performance. Managers are required to engage in before and after sales activities. Most of the activities are related to complex technical methods related to the products. We do not develop specific hypotheses for each of these three factors, though they are included in the model estimation. Before presenting the analysis and results of the hypotheses test, we describe the methodology used in this study.

Methodology

Census data was collected from about 500 personnel of a retailer of agricultural input products in Brazil. The mix of products contains chemical, fertilizer, seed, irrigation equipment, animal feed, veterinarian medicines and general farm accessories. The firm purchases products from major national and international brands to sell in its stores to producers of agricultural products (*i.e.* mainly soy, corn, coffee, sugarcane, dairy products and cattle). The retailer has its own brands in several product lines: animal feed, fertilizer and seeds. Overall the firm's net sales in 2007 were over 300 million dollars, serving 1,100 clients. This retailer was selected due to the nature of the business, its territorial coverage and number of salespeople.

In this business, information is critical. Sales managers are always consulted for technical advice. They visit clients in order to identify specific needs and the array of products needed for the whole cycle of the clients' products. There are 23 divisions with independent stores for each one. A typical store has a manager in charge of operations and sales, supervising 5-7 sales managers with internal (*i.e.* at the store and by telephone) and external (*i.e.* visits to clients firms) activities. Each division has its own infrastructure and inventory to conduct sales independently and, in a certain way, competes with each other. There is a monthly meeting with division managers to evaluate results and update them on operational and strategic issues. The Commercial Director oversees the 23 divisions with the assistance of two Business Unit Managers (*i.e.* Animal Business and Agriculture Business). In total there are 148 salespeople spread out over 4 states. Sales managers earn a fixed annual salary and a bonus based on their own annual net sales and also on their divisions annual net sales. Field sales managers have all expenses covered by the firm (*e.g.* car, telephone, hotel, meals). To test our hypotheses, we considered the sub-sample of field and store salespeople (salespeople that work only in the store), for a total of 101 individuals.

We collected data about the network through a self-reported network assessment from all 472 firm employees in August 2006. We focused on the advice network that represents the instrumental, workflow-based network in the organization (Krackhardt, 1990). Basically, it addresses who goes to whom for work-related or technical advice (Cross & Prusak, 2002). The name generating questions used for this study were adapted from Burt (1992). The assessment consisted of two name-generating questions which asked respondents about their ties: Whom do you go to for help or advice at least once a week? Whom do you talk to when you miss a work-related meeting? Whom do you look for to gather information for an important project?

To ensure high quality responses, all directors and regional managers were personally informed about the importance of the research. The senior Human Resource (HR) Executive and the research team were in charge of follow ups. After a fifteen-day data collection effort, the survey produced a response rate of 98.3% yielding 464 completed questionnaires. Of the 109 targeted salespeople in the firm, 101 were eligible for inclusion in the study. There were 3 salespeople who did not return the questionnaire, and 5 who were not in their position long enough for their sales to be evaluated.

In January 2007, the company was asked to provide information about the financial performance of the sales force. The time lag between the name-generating questionnaire and the collection of performance data was adopted to reduce the likelihood of effects from reverse causality, a problem for cross-sectional network data (Moran, 2005). In addition, the firm provided the profile of each employee, including demographic characteristics and the region where they worked.

Three measures of performance were used. The measures of individual sales (US$) and sales margin (US$) were computed on the basis of the financial records from January through December of 2007. Sales Growth (US$) represents the growth in sales over the previous 3 years, 2005 through 2007.

Network structure is operationalized based on two centrality measures (*i.e.* degree and **betweenness**). We considered the first ten names generated in the questionnaire in order to guarantee

the relevance of the contacts mentioned by the respondents. All names were entered in UCINET 6 to draw the network and estimate the two centrality metrics. To estimate degree centrality we followed the procedure of Borgatti, Everett and Freeman (2002). It considers the number of direct contacts to a given point in the network (*i.e.* number of persons) in a symmetric graph. This allows an estimate of the number of ties received by the given point in the network and the number of ties initiated by the given point. The degrees (in and out) then consist of the sums of the values of the ties. The estimate is normalized by dividing it by the maximum possible degree, expressed as a percentage. The estimation of **betweenness** centrality also follows the procedure of Borgatti *et al.* (2002). Considering b_{jk} as the proportion of all geodesics linking vertex j and vertex k which pass through vertex i, the **betweenness** of vertex i is the sum of all b_{jk} where i, j and k are distinct. **Betweenness** is therefore a measure of the number of times a vertex occurs on a geodesic. The normalized **betweenness** centrality is the **betweenness** divided by the maximum possible **betweenness**, expressed as a percentage.

The measure of strong ties represents the intimacy and closeness of a specific tie. When reporting names for the advice network, we asked respondents to identify the persons who they use to discuss personal matters or the one to whom they confide private concerns. Strong ties measurement represents the number of ties within the network with whom the respondent maintains an emotional connection. The construct was normalized to be included in the regression estimations.

We included four control variables. The measure of **age** represents the number of years from the date of birth to the date of the data collection. The variable **years with firm** is the number of years since the first day at work in the firm. We also included a variable to control for the **education level** considering the number of years the employee took at school. This is a categorical variable ranging from analphabet (0) to graduate (8). There is a dummy variable for the kind of sales manager. We coded 1 for the sales people that are primarily in charge of field sales (*i.e.* visits clients in loco), while 0 represents sales managers that mainly stay at the stores.

Correlation matrix and descriptive statistics are shown in Table 2. The correlations between the measures do not suggest problems of pairwise colinearity that would preclude the use of all constructs in the estimation.

Table 2

Correlation Matrix and Descriptive Statistics

	Mean	SD	Sales	Margin	Sales Growth	DC	BC	Strong Ties	Age	Years	Educ. level
Individual											
Sales	2.40E+06	3.10E+06	1								
Margin	378488.7	5.01E+05	,985**	1							
Sales Growth	806215.1	1.83E+06	,624**	,600**	1						
DC	7.2833	4.43285	0.128	0.132	-0.128	1					
BC	286.3627	625.7095	0.106	0.099	-0.097	,661**	1				
Strong Ties	1.00002	1.00043	0.039	0.053	-0.008	-,627**	-,384**	1			
Age	33.7561	8.7247	,371**	,358**	-0.015	0.079	-0.013	0.084	1		
Years with firm	5.9915	4.31033	0.115	0.131	-0.195	,381**	,182*	-,206*	,429**	1	
Education level	7.122	1.0757	,291**	,246**	0.192	0.123	0.165	0.006	-0.106	-,243**	1
Field Sales	0.3252	0.47037	,260**	,195*	,249*	-,222*	-0.091	,206*	0.047	,355**	-,375**

Note. a. DC: Degree Centrality; BC: *Betweeness* Centrality.
* Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).

Results

We mapped 1,944 ties in the whole firm's advice network. The ego-network (*i.e.* contains only the direct people mentioned) of each sales manager was drawn representing 774 ties. Figure 3 shows the connections where at least one individual has referred to another in an advice setting of the sales force. The so called advice network reveals a concentration of ties on experts. People like business unit sales managers (#23 and #26), Commercial Director (#62) and supporting staff (Logistics Manager #295, Credit Manager #15, IT Manager #117 and Inventory Manager #50) are at the center of the network. This shows the importance of commercial information and also shows the value of information from critical supporting positions within the network.
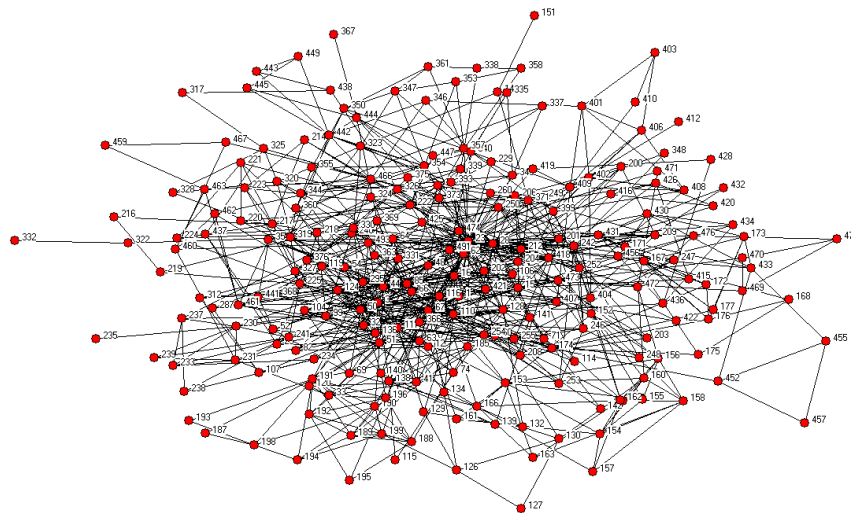

Figure 3. Sales People Advice Network.

Table 3 summarizes the results of ordinary least square regression analysis. This table presents the standardized coefficients of the estimated regression model. The standardized coefficient allows comparison of 'coefficient size' because all measures are in the same metric, namely, standardized normal deviates. The equations were statistically significant below the .01 level in the F-test. The adjusted R^2 for the significant equations are above .223, which indicates that the results of the estimated model present a robust explanatory power. The explanatory power of the equations supports the examination of individual coefficients testing the effects of each individual variable.

Table 3

Results of the Regression Analyses[a]

	Individual Sales Model 1	Individual Margin Model 2	Sales Growth Model 3	Hypothesis
Degree Centrality	. 0.49**	.53**	.38**	H1
	(3.24)	(3.36)	(2.05)	
Betweeness Centrality	-0.22**	-.23*	-.23†	H2
	(2.01)	(2.02)	(1.67)	
Strong ties	.34**	.39†	.11	H3
	(2.71)	(2.98)	(.75)	

Continues

Table 3 (continued)

	Individual Sales Model 1	Individual Margin Model 2	Sales Growth Model 3	Hypothesis
Control Variables				
Age	.40** (4.36)	.37** (3.90)	.27** (2.50)	
Years with firm	-.18† (1.72)	-.16 (1.50)	-.21† (1.76)	
Education level	.19† (1.90)	.18† (1.65)	.08 (.65)	
Field Sales	.20* (2.02)	.14† (1.28)	.25* (2.03)	
R^2	.424	.366	.295	
R^2 Adj	.377	.314	.223	
ΔF	9.038**	7.093**	4.074*	

Note.†p <.10; *p < .05; **p<.01
[a] n =101. Regression coefficients are standardized coefficients (β) and |t-test| within parentheses.

We find significant support for hypothesis 1. Sales managers with degree centrality in advice network achieve high performance in all measures: annual sales (β=.49, p<.01), margin (β=.53, p<.01) and sales growth (β=.43, p<.05). There is a significant negative impact of **betweenness** centrality in the network and a sales manager's annual sales (β=-.22, p<.05), margin (β=-.23, p<.05) and sales growth (β=-.23, p<.10), as opposed to hypothesis 2. Sales managers in brokerage positions have a decrease in performance. This result may suggest that a sales manager invests time and effort in maintaining his or her brokerage position, which does not pay off in the short or long term. The results of the estimations show significant impact of strong ties on two measures of performance: annual sales (β=.34, p<.01) and margin (β=.39, p<.01). This is in accordance with our hypothesis 3. There is no significant impact of strong ties on sales growth. One might suggest that in the long run maintaining strong ties does not necessarily imply an increase in sales. The paradox here lies in the nature of strong ties: intimacy and emotional bonds. To build a strong tie, a sales manager may need time to develop trust. It appears that sales managers that are quick in developing strong ties exploit the benefits of it in the short term, as it is shown in the positive impact of strong ties on annual sales and margin.

Several control variables have significant effect on sales managers' performance. Age significantly influences all three performance measures. The older the sales manager is, the higher the annual sales (β=.40, p<.01), margin (β=.37, p<.01) and sales growth (β=.27, p<.01). Interestingly, the longer the period a sales manager is with the firm, the lower his or her performance (annual sales: β=-.18, p<.10; sales force: β=-.22, p<.10). Additionally, there is a marginal positive impact of education on performance. The higher the level of education, the higher the annual sales (β=.19, p<.10) and margin (β=.18, p<.10). On the other hand, education does not significantly impact the long term measure of performance (*i.e.* sales growth). One might suggest that constant training and updating is necessary for sales managers. Our dummy variable for field sales is significantly related to annual sales (β=.20, p<.01) and sales growth (β=.25, p<.01).

Concluding Remarks

Our study aimed at the investigation of a sales manager's social network. While past studies in marketing have examined the direct effects of knowledge structure characteristics (Sujan *et al.*, 1988; Szymanski & Churchill, 1990) on performance, our findings show insights into the socio-cognitive perspective of sales management literature. In general terms, literature in the social network area puts forward the idea that the better your centrality in a network, the better your outcomes. This is associated with the information benefits one might explore in terms of information control or being the first one to access the information. People who do well are somehow better connected. The perspective we take in this paper follows the metaphor in which the social structure defines a kind of capital that can create an advantage for individuals or groups in pursuing their goals. Our study shows that sales managers central in closure structures of an advice network achieve high performance. The closure structure allows for sales managers to rely on social norms and trust. The closer the contacts are with each other, the better the performance in sales. Additionally, sales managers who maintain strong ties appear to perform well in the short-term. Sales managers need to quickly develop strong ties in order to achieve an increase in sales and margin. Literature about strong and weak ties (Granovetter, 1973; Lin, 1988) reinforces the way sales force must be managed.

Considering the results of our study and the discussion provided in the presentation of the hypotheses in Figure 2, it appears to be important for sales managers to have accurate perceptions of their network. Without this, any evaluation of the costs and benefits of alternative response to customers based on the information obtained from the network can be misguided. More specifically, if managers either under or overestimate the potential positive impact of the information obtained in their close group of advice contacts, their sales effort response can be set up improperly. Firms can foster managers' initiatives toward improving relationships with other sales managers and staff personnel that may form their own advice network. This will allow them to access valuable information that supports their sales efforts. The mere process of gathering information from known ties and developing new ties of information may substantially enhance the chances of sales success.

The implications of our study are best viewed within the context of a practice oriented approach on the trends towards increasing customer knowledge and sales performance. Almost without exception, such an approach tends to view customer relationships as a universally desirable idea – this is because some customers may not be as profitable as others. We advise managers to complement this approach with our hypotheses and results. Noteworthy, the basic postulate in our work is that a sales manager may increase their knowledge about customers by setting up advice relationships with others. In the settings we tested our hypotheses, sales managers have looked for new ways to satisfy customers. In this particular situation, there are enough advantages for sales managers to organize themselves to set up close advice network structures. In the absence of other competitive advantages, social networks do not have beneficial effects and, given the costs associated with maintaining the contacts within the network, it is likely to be detrimental to performance. At the very least, our study should serve as a cautionary tale about the conditions that evoke the need to craft network relationships. The value of a relationship is not defined inside the relationship; it is defined by the social context around the relationship (Burt, 2005).

In a future study, the relationship within a network might be investigated in terms of its intensity. Literature of network **multiplexity** (Mitchell, 1969) can present interesting findings in a context of sales force. Future research must consider other concepts studied in social capital literature. For instance, network diversity may cause an impact on sales performance. Network diversity has been studied as the wide variety of contacts a sales manager may have: be it in the commercial department or in other departments (*e.g.* administrative, financial, IT, and logistics).

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