

The undersigned

SURNAME: SMYRLAKIS

FIRST NAME: NIKOLAOS

Student ID no.: 1538453

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SURNAME : SMYRLAKIS

FIRST NAME : NIKOLAOS

## **ABSTRACT**

*In the first chapter essay the relationship between Organizational Citizenship Behaviors (OCBs) and centrality among various formal and informal organizational networks is analyzed and empirically examined. We try to unravel some of the foundations behind intraorganizational network behaviors by establishing organizational citizenship behaviors as an individual behavior governing network patterns. We analyze this relationship at two levels, the individual and the dyadic (tie level). More specifically at the individual level we establish OCBs as an antecedent of formal and informal intraorganizational network centrality and at the dyadic level as a predictor of tie formation and tie reciprocity.*

*In the second chapter we try to unravel and put into the test the effects of Organizational Citizenship Behaviors on individual performance. There exist different frameworks linking performance to OCBs with mixed findings. However there is no clear answer as to which extent OCBs contribute to individual level performance and under which conditions. We try to answer this question by applying various level moderators interfering between the engagement of OCBs and individual performance ratings. These are separated in three levels: on the individual level, the team level and the supervisor level. Next to individual level rank and experience, team level team size and density, we additionally apply some network variables, such as individual network centrality and supervisor level centrality and brokerage.*

*In the last chapter we focus on a 'leader – follower' relationship quality framework. We operationalize relationship quality with measures from informal organizational networks, as a proxy for leader follower exchange relationships. The already established relationship between 'leader – follower' relationship quality and Organizational Citizenship Behaviors is further analyzed. We examine the effects of leader sponsorship on follower OCBs. Consequently we develop two new leader network measures: "affectiveness" and "universality", or the extent to which a leader is affective and popular among affective and informal organizational networks at the local or the organizational level and test interaction effects with 'leader – follower' relationship quality. Finally we also incorporate the leader's informal brokerage as an attribute that interacts with the relationship quality with the focal leader on the follower's citizenship behaviors.*

*The data comes from a global luxury sunglasses firm with supervisor reported measures of employees OCBs and employees' reported network ties spanning across various departments and geographical locations. We incorporate three types of intraorganizational networks, namely the formal workflow network and the informal advice and affective (friendship) network.*

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## Introduction

The organizational networks literature has been related to a large number of theories, such as social capital (Burt, 1997, 1992; Coleman, 1988; Lin, 2001; Nahapiet & Ghoshal, 1998), the resource-based view (Gulati, 1999) resource dependence theory (Bonacich, 1987; Pfeffer & Salancik, 1978), social status (Podolny, 1993, 2005), trust (McEvily, Zaheer, Kramer, & Cook, 2004), and the relational view (Dyer & Singh, 1998) with many of these domains and theories having overlaps (Zaheer et al. 2012). There have been numerous advances in the organizational networks and network theory field in the past 20 years. Drawing from Granovetter's pioneering studies (Granovetter, 1973, 1985), many concepts have been introduced in the literature concerning core ideas of organizational social networks research such as structural holes and closure (e.g. Ahuja, 2000; R. Burt, 2004; Walker, Kogut, & Shan, 1997) or network structures (Amaral, Scala, Barthelemy, & Stanley, 2000; Guimerà, Uzzi, Spiro, & Amaral, 2005; Newman, 2001). Numerous other studies on organizational networks have been carried out since concerning among others corporate governance and interlocks (Haunschild, 1993; Mizruchi, 2004) creativity (Burt, 2004; Uzzi & Spiro, 2005), diffusion of innovation (Fleming, King, & Juda, 2007; Schilling & Phelps, 2007; Verspagen & Duysters, 2004) interfirm alliances (Baum, Calabrese, & Silverman, 2000; Powell, White, & Koput, 2005) and performance (Soda, Usai, & Zaheer, 2004; Tsai, 2001). However most of these studies share a 'snapshot' view of social networks. Little is known about how actors actually came to be in the network position they are (Guimerà et al., 2005), in other words the rules that govern organizational networks' structure and formation.

As Kilduff et al. (Kilduff & Brass, 2010) point out, the emphasis has been on how macro social conditions affect macro-level outcomes or on how micro factors affect micro-level outcomes and the micro - macro links between organizational networks and individual attributes or decisions have been relatively neglected. They also coin a so - called ‘agentic turn’ term (e.g. Emirbayer & Goodwin, 1994; Podolny & Page, 1998; Zuckerman, 1999), however still emphasize that there is a general lack of thorough research concerning how individuals make choices concerning the social networks that facilitate and constrain their actions. A so-called ‘black box of the coevolution of outcomes, behaviors, and structures’ (Zaheer, Gözübüyük, & Milanov, 2010) is just opening and a stream of literature is emerging. Kilduff & Brass (2010) identify the actor characteristics and the agency of actors as an under-researched area, and as a promising link between the micro decisions and the macro outcomes. What Zaheer et al. (2010) call the “black box”, Kilduff & Brass designate as the “Pandora’s Box” of individual differences, a possible cascade of hundreds of personality variables as possible explanations of why some people occupy certain network positions. They extend this notion to firm-specific characteristics, and not only individual characteristics. They report a turn towards actor agency as a possible explanation of behavioral strategies; however they conclude that there has been a relative lack of research concerning how individuals make choices concerning the social networks that facilitate and constrain their actions.

Thus there is a fruitful and rather under-examined area of research concerning individual behaviors and actions and their effects on a macro network scale (Kilduff & Brass, 2010;

Rivera, Soderstrom, & Uzzi, 2010; Sasovova, Mehra, Borgatti, & Schippers, 2010; Vissa, 2012). In the organizational networks literature there remains a theoretical and empirical gap of individual attributes or behaviors that might encourage the formation of network ties. The question on networks remains still open; “Does someone just have to be in the right place on the right time?” This general question is addressed here and will be looked into the whole of this research.

One promising set of individual behaviors that we look into is Organizational Citizenship Behaviors (OCB). Organ (Organ, 1988) defined organizational citizenship behavior as an “individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization. Discretionary means that the behavior is not an enforceable requirement of the role or the job description, that is, the clearly specifiable terms of the person’s employment contract with the organization; the behavior is rather a matter of personal choice, such that its omission is not generally understood as punishable”. Initial interest on work behavior that is discretionary and not explicitly recognized by the formal reward system can be traced back to Barnard (Barnard, 1968) and Katz (Katz, 1964). The term Organizational Citizenship Behaviors was first coined by Bateman and Organ (Bateman, Organ, & W., 1983; Smith, Organ, Near, et al., 1983), thus making the individuals that engage in such behaviors “good citizens”. These behaviors are also often described as extra- role behaviors e.g. cooperating with others, volunteering for additional tasks, orienting new employees, offering to help others accomplish their work, and voluntarily doing more than the job formalities requires (Borman & Motowidlo, 1993; Smith, Organ,



& Near, 1983). Although the field of OCBs did not develop instantly, the 1990s saw an exponential growth of research papers (Philip M Podsakoff, Mackenzie, Paine, & Bachrach, 2000).

Most studies have been involved mostly in investigating the antecedents of OCBs, these being mainly positive job attitudes, task characteristics and leadership behaviors, as Podsakoff et al. point out in their extensive review (Philip M. Podsakoff, MacKenzie, Paine, & Bachrach, 2000). Consequences of OCBs include effects on managerial evaluations of performance and judgments regarding pay raises, promotions, etc., and on organizational performance and success (Bateman et al., 1983; LePine, Erez, & Johnson, 2002; Podsakoff, Whiting, Podsakoff, & Blume, 2009; Philip M Podsakoff, Ahearne, & MacKenzie, 1997; Philip M. Podsakoff et al., 2000; Smith, Organ, Near, et al., 1983).

We will study OCBs through an intraorganizational network lens and investigate how these behaviors interact with the organizational formal and informal structures. We leverage the notion that OCBs “lubricate the social machinery of an organization” (Smith, Organ, & Near, 1983) and view citizenship behaviors as behaviors that take place within intraorganizational networks and therefore affecting their structure and formation. The central overarching idea of all chapters is the set of relationships governing how intraorganizational networks interact with individual citizenship behaviors, dyadic relationships and individual outcomes.

The network framework we apply is that of formal and informal intraorganizational

networks. Network scholars have identified an array of formal and informal workplace networks, including workflow, communication, advice, influence, and friendship networks (Klein, Saltz, & Mayer, 2004; Mehra, Dixon, Brass, & Robertson, 2006; Soda & Zaheer, 2012). More specifically we focus within the intraorganizational level on the formal workflow network and on the informal advice and affective friendship networks (Tiziana Casciaro & Lobo, 2008; Klein et al., 2004; Lincoln & Miller, 1979; Mehra, Kilduff, & Brass, 2001; Soda & Zaheer, 2012; Sparrowe, Liden, Wayne, & Kraimer, 2001). The formal components of organizational networks include connections among organizational members that reflect the hierarchical structure, processes and workflows, and enable accessing, exchanging, or transmitting critical organizational resources such as approvals, direction, task-related information, communication etc. In other words the formal or workflow network consists of the formally prescribed set of interdependencies between employees established by the division of labor in the organization. Alongside the formal structure and dependencies within an organization lies also a set of informal or affective relationships (Lincoln & Miller, 1979). Organizational formal networks might shape the formal structure in organizations, however informal organizational structure is very crucial as well and may even overshadow formal hierarchy of authority (Brass, Galaskiewicz, Greve, & Tsai, 2004). Informal social networks derive from mutual liking, similarity of attitudes or personal choice, representing individual choice and initiative and by factors such as homophily, agency, and attraction (Kilduff & Tsai, 2003). Here we will focus on two types of informal networks: the advice network and the affective or friendship network. The advice network is “comprised of relations through which individuals share resources such as information, assistance, and guidance” (Sparrowe et

al., 2001). The friendship network describes the ties of affection that link team members (Baldwin, Bedell, & Johnson, 1997; Tiziana Casciaro & Lobo, 2008).

In the first chapter we establish the link between citizenship behaviors and intraorganizational networks. First on the individual level citizenship behaviors are seen as an antecedent of formal and informal network centrality. In other words better citizens, individuals who do more than their formal role requires e.g. attending informal meetings, being helpful etc., are more popular in the intraorganizational structure. We theorize that members of the organization exchange more often workflow material, take advice and become friends with better citizens rather than bad citizens. We look into this behavior first on the individual level centrality and consequently on the tie (dyadic) level, where citizenship is established as a tie formation predictor. This way a holistic view of citizenship and networking behavior (centrality at the individual level and tie formation at the tie level) is instituted.

In the second chapter we look deeper into the relationship between Organizational Citizenship Behaviors and individual performance. Organizational Citizenship Behaviors have been shown to have an impact on performance evaluations, thus managers take extra – role engagement into account when evaluating an employee (MacKenzie, Podsakoff, & Fetter, 1991, 1993). However the extent to which citizenship behaviors account for individual performance and the possibility that extra role behaviors function at the expense of task behavior needs to be investigated (Bergeron, 2007; Borman & Motowidlo, 1993). We investigate a set of potential moderators to this relationship

(Podsakoff et al., 2009). The moderators applied are at three levels, at the individual level, the supervisor (evaluator) level and the team level. As potential moderators we utilize network constructs alongside other parameters, establishing therefore the interaction of formal and informal intraorganizational networks with the focal individual's citizenship behaviors, impacting individual performance. The novelty of this chapter is the introduction of an interaction between the intraorganizational networks and the citizenship behaviors leading to differential performance evaluations.

Finally in the last chapter we recalibrate our focus on a more specific set of dyadic relationships, of great importance within the organization: the relationships between leaders and followers, or in other words between the supervisor and the direct subordinates. There is a wide literature around this topic, more specifically the leader member exchange (LMX) relationships and LMX differentiation literature (Dulebohn, Bommer, Liden, Brouer, & Ferris, 2011; Graen & Uhl-Bien, 1995; Henderson, Liden, Glibkowski, & Chaudhry, 2009; Ilies, Nahrgang, & Morgeson, 2007; Liden & Graen, 1980). The leader-member exchange (LMX) theory of leadership has developed into a significant area of scientific inquiry and has received considerable empirical research attention in the organizational sciences. LMX over the past forty years has evolved to rely heavily on social exchange theory (Dulebohn et al., 2011). On this respect LMX is relationship-based, examining one-on-one dyadic reciprocal social exchanges between leader and follower (Graen & Uhl-Bien, 1995). Leader follower relationships have been linked with a number of outcomes such as job performance, organizational commitment, job satisfaction and citizenship behaviors among others (for an extensive review see

Dulebohn et al., 2011).

Organizational Citizenship Behaviors of the followers as one of the established outcomes of high quality leader follower relationship that is further examined in this chapter. We look into interaction effects of the formal and informal intraorganizational networks within the focal leader and follower relationship. We construct the leader's network connectivity and reach attributes and create two new variables that describe a leader or a supervisor in terms of the information signaled through her informal intraorganizational structure: leader affectiveness and universality. Along with leader informal brokerage we test the positive effects that these attributes might have on the engagement of the followers and the direct subordinate team.

The overall research setting is at the intersection of organizational networks and organizational behavior and at the doorstep of leadership with contributions along all three disciplines. Organizational Citizenship Behavior is a recurring variable in all chapters, as well as network measures of the intraorganizational workflow, advice and friendship networks. OCBs are incorporated as a predictor of network centrality and as an antecedent of tie formation, as well as a determinant of performance under certain moderators. On the other hand OCBs are also seen as an outcome of the relationship with certain leaders, who have inherited certain networking characteristics and carry on an advantageous effect on the follower's OCBs. The research design is moving along various levels. From the individual level of analysis, involving all organizational members of all levels to the tie level of all possible dyadic combinations within the given sample. Then we move on an intermediate level, focusing on the subset of the dyadic

relationships between supervisors and their direct reports. We examine interaction effects from different levels as well: the interaction of individual level attributes, of team level attributes and of supervisor level attributes. In this framework the intraorganizational networks are the host of all organizational actions and outcomes. They are formed through citizenship behaviors and interact with the focal individuals, leaders or followers, in various ways explained in the following essays.

## CHAPTER 1: Organizational Citizenship Behaviors & Networking patterns;

### Multilevel mapping of the formal and informal intraorganizational networks through an individual behavioral lens

#### Abstract

*In this essay the relationship between Organizational Citizenship Behaviors (OCBs) and centrality among various formal and informal organizational networks is analyzed and empirically examined. We try to unravel some of the foundations behind intraorganizational network behaviors by establishing organizational citizenship behaviors as an individual behavior governing network patterns. We analyze this relationship at two levels, the individual and the dyadic (tie level). More specifically at the individual level we establish OCBs as an antecedent of formal and informal intraorganizational network centrality and at the dyadic level as a predictor of tie formation and tie reciprocity. The data comes from a global luxury sunglasses firm with supervisor reported measures of employees OCBs and employees' reported network ties spanning across various departments and geographical locations. We incorporate three types of intraorganizational networks, namely the formal workflow network and the informal advice and affective (friendship) network.*

## Introduction

In this essay we will try to shed some light in individual behaviors that govern network formation. More specifically we will look into Organizational Citizenship Behaviors (Bateman et al., 1983; Organ, 1988a; Smith, Organ, Near, et al., 1983). We examine the helping, conscientiousness, civic virtue and sportsmanship dimensions (Koys, 2001; P M Podsakoff, Ahearne, & MacKenzie, 1997; Philip M Podsakoff et al., 2000; Podsakoff & MacKenzie, 1990; Smith, Organ, Near, et al., 1983; Yen & Niehoff, 2004) and their effects on the formal and informal intraorganizational structure. The focal variable is individual centrality, a measure of ‘popularity’ or in other words the degree to which an individual is sought after as a network tie by her work colleagues and peers. We apply this relationship in a formal and informal intraorganizational networks setting, namely the formal workflow and the informal advice and affective (friendship) networks. The workflow network depicts the formal organizational structure, or the formally prescribed set of interdependencies between employees established by the division of labor in the organization. The informal organizational structure in our framework consists of two components; the informal advice network and the affective (friendship) network (T Casciaro & Lobo, 2008; Klein et al., 2004; Lincoln & Miller, 1979; Mehra et al., 2001; Oh, Chung, & Labianca, 2004; Sasovova et al., 2010). Citizenship behaviors increase the social capital of an organization and encourage the participation in the social life of the organization (Bolino, Turnley, & Bloodgood, 2002). Furthermore through citizenship behaviors mutual trust and respect is developed, encouraging positive feelings and



making interaction easier. Based on these inferences and traces from social exchange theory (Blau 1964; Bowler & Brass, 2006; Settoon & Mossholder, 2002) we develop the notion that good citizens tend to be more central in the formal and informal organizational structure.

Consequently by digging deeper into the relationship between individual citizenship behaviors and network centrality, we downgrade the level and run tests on the dyadic – tie level, taking into perspective mechanisms of social exchange theory (Blau 1964; Bowler & Brass, 2006; Settoon & Mossholder, 2002). While at the individual level we look into individual centrality and being a good citizen as mechanism of ‘attraction’ of network ties, or as mechanisms of intraorganizational popularity, at the tie level we look OCBs as a tie formation antecedent. On this level of analysis we can also disentangle between the formal and informal intraorganizational tie formation. Tie formation is divided in different sets of hypotheses. First, good citizens are more likely to receive an intraorganizational tie. Second, on the condition that one is already a workflow contact, citizenship predicts the formation of an informal tie. In other words, a workflow contact who is a good citizen is more likely to become also a friend or advice giver. Finally we examine the interaction of the citizenship of the dyad: two good citizens are more likely to engage in reciprocal relationships, thus being mutual friends or giving advice and helping each other.

Organizational Citizenship Behaviors are shown to have networking outcomes, marking our results essentials and novel in both the domains of organizational behavior and

organizational networks. OCBs are a small building block to the answer of the question on networking behaviors and individual networking antecedents or attributes. Good citizens receive more network ties and this is crucial for the well-being of an organization and designates the pillars around which the informal, but the formal as well, organization structure is shaped.

## Theory

### Intraorganizational Networks Foundations

Lincoln & Miller (Lincoln & Miller, 1979) showed that within the organizational structure reside friendship as well as instrumental ties. Soda and Zaheer (Soda & Zaheer, 2012) have incorporated three formal networks (formal authority, reciprocal workflow, and sequential workflow) and one informal social network (advice and information exchange) on a study on mapping the formal and informal organization. In considering the importance of network position in an organization Mehra et al. (2001) take into account two types of networks: the workflow and informal networks. Klein et al. (2004) uses a homogenous classification of three types of informal networks, the advice network, the friendship network and the adversarial network. In detail, the advice network is “comprised of relations through which individuals share resources such as information, assistance, and guidance” (Klein et al., 2004). The friendship network describes the ties of affection and mutual liking that link team members (Baldwin et al., 1997; Mehra et al., 2006). Finally, an adversarial network described team members’ antagonistic ties (Labianca, Brass, & Gray, 1998). We incorporate the workflow, informal advice and

affective friendship networks from previous studies (Klein et al., 2004; Mehra et al., 2006, 2001; Soda & Zaheer, 2012).

The bulk of the primary work concerning the foundations of organizational networks concerns mainly behaviors at the dyadic level (Ahuja, Soda, & Zaheer, 2011; Rivera et al., 2010). Ahuja et al. (2011) try to compile the various explanations on the micro-foundations of organizational networks in a set. They shed some light on the under developed theme of the emergence and dynamic development of networks and group together several elements from the literature. The core argument made is that through the micro-dynamics of change (namely agency, opportunity, inertia and random) ties are formed, dissolved or maintained. These micro-foundations consequently lead to the following network rules: homophily, heterophily, prominence attraction and inertia. This classification is highly in line with Rivera et al. (2010) where they categorize the same network micro-dynamics into three distinct perspectives; assortative (heterophily, homophily), relational (prior ties, indirect ties, repetition) and proximity. Rivera et al. (2010) and Ahuja et al. (2012) are highly aligned in their findings. Another review by Brass et al. (Brass et al., 2004) is also examining the antecedents of intraorganizational networks at the dyadic level. The most widely mentioned variable is again homophily (Brass et al., 2004; Granovetter, 1973; Ibarra, 1992; Mcpherson, Smith-lovin, & Cook, 2001; Mehra, Kilduff, & Brass, 1998), defined in various dimensions such as age, sex, education, prestige, social class, tenure, and occupation. Another variable reviewed by Brass et al. is proximity and organizational structure, in terms of geographical proximity or workflow procedures or participation in working units or groups. These factors can

constrain or generate network ties.

There is however just some recent work focusing on individuals and their effects on network ties formation, although structuralists would argue that personality is a result of network position and not the other way around (Brass et al., 2004) and organizational sociologists would typically view network formation as driven by exogenous factors, such as the distribution of technological resources or the social structure of resource dependence (Gulati, 1995, 1999). Mehra et al. (Mehra et al., 2001) in a pioneering paper concerning individual differences and network positions showed that chameleon-like high self-monitors are more likely to occupy more central positions within organizations. Similarly, Sasovova et al. (2010) showed that high self-monitors were more likely than low self-monitors to attract new unknown friends and to occupy bridging positions over time. Klein et al. (2004) in a homologous approach examine the effects of the big five personality traits and demographic characteristics on the formation of ties. Their findings support that low neuroticism and high education in individuals and partially openness to experience predict centrality in organizational formal and informal networks.

Some studies also proposed another direction of tie formation and individual traits (Kleinbaum, Jordan, & Audia, 2015; Rubineau & Polman, 2012). More in detail, it is one's (the ego's) individual traits that attract others (the alters) to create a tie with the ego. We attempt to build on these paradigms and further extend our understanding of organizational network formation. In Table 1 we have collected the already intraorganizational networks foundations already established and discussed above.

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Insert Table 1 about here  
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### **Organizational Citizenship Behaviors as a networking behavior**

Organ (Organ, 1988a) defined organizational citizenship behaviors as an “individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization. Discretionary means that the behavior is not an enforceable requirement of the role or the job description, that is, the clearly specifiable terms of the person’s employment contract with the organization; the behavior is rather a matter of personal choice, such that its omission is not generally understood as punishable”.

OCBs have been a widely covered and influential topic in the field of organizational behavior with numerous antecedents and consequences (Philip M Podsakoff et al., 2000). There have been a few studies coupling OCBs and network theory (Bolino et al., 2002; Bowler & Brass, 2006; Settoon & Mossholder, 2002). Bowler & Brass (2006) based on social exchange theory develop a framework where the strength of friendship relations was related to receipt of interpersonal citizenship behaviors. Interpersonal citizenship behavior occurs when coworkers assist one another beyond their job requirements (Bateman & Organ, 1983; Settoon & Mossholder, 2002). Settoon & Mossholder (2002) established links between relationship quality variables such as trust and support and

relationship context variables such as network centrality or task interdependence to foster interpersonal citizenship behaviors. Bolino et al., based on the Nahapiet and Ghoshal formalization of social capital (Nahapiet & Ghoshal, 1998) create a theoretical framework of OCBs boosting the structural, relational and cognitive dimensions of social capital. The studies of Setton & Mossholder (2002) and Bowler & Brass (2006) investigate network antecedents of interpersonal citizenship behaviors, whereas Bolino et al. view organizational citizenship behaviors (not at the interpersonal dimension but as an individual behavior) as an antecedent of the creation of social capital.

Relationship quality and context, as well as centrality, have been seen as antecedents of interpersonal citizenship behaviors (e.g. coworker support, trust etc.) based on social exchange (Blau, 1964) and reciprocity (Gouldner, 1960) in studies regarding interpersonal citizenship behaviors (ICBs) (Bowler & Brass, 2006; Settoon & Mossholder, 2002). However here we differentiate in two ways; first the focal construct is not interpersonal citizenship behaviors (ICB) but rather organizational citizenship behaviors (OCBs), thus behaviors applicable at the organizational level and not only the interpersonal level, and secondly we reverse the relationship and view social networks as an outcome and not as an antecedent of OCBs. Possible reverse causality is further discussed and tackled with in the robustness checks section.

Having close interaction with the focal organization and by running a preliminary exploratory study we have narrowed down four relevant OCB dimensions that would apply to the specific organizational setting and were considered by the firm as more

easily observed and understood by the participants and are widely used in the literature, namely civic virtue, sportsmanship, helping behavior and conscientiousness (Koys, 2001; P M Podsakoff et al., 1997; Philip M Podsakoff et al., 2000; Podsakoff & MacKenzie, 1990; Smith, Organ, Near, et al., 1983; Yen & Niehoff, 2004). Helping behavior includes actions that help another person with a work related issue; instructing a new hire on how to use equipment, helping a colleague catch up etc. Sportsmanship implies a posture of tolerating the inevitable inconveniences and impositions of work without complaining or whining. Conscientiousness is a pattern of going well beyond minimally required levels of attendance, punctuality, housekeeping, conserving resources, and related matters of internal maintenance. Finally Civic Virtue brings about responsible, constructive involvement in the political process of the organization, attending meetings and sharing informed opinions and new ideas with others.

### **Individual level**

We focus on formal workflow and informal advice and affective friendship network centrality as outcomes of organizational citizenship behaviors. Centrality captures the extent to which individuals in the network identify the focal actor as one of their contacts in the network (Freeman, 1979; Kilduff & Krackhardt, 1994). Individuals with high advice centrality are sought after for their work-related input whereas individuals with high friendship centrality are sought after for their companionship (Klein et al., 2004). Individuals with high workflow centrality receive a lot of the formal organizational material such as reports, procedures' outcomes, work related material etc. and represent

important or high ranked individuals, or individuals that others seek to work with and cooperate.

Organizational citizenship behaviors enhance and foster social capital (Bolino et al., 2002) as well as "lubricate the social machinery of the organization" (Smith, Organ, Near, et al., 1983). These behaviors foster the development of liking, trust, and identification among employees (Bolino et al., 2002). Additionally good citizens by getting involved in discretionary, pro-social behaviors may advance their role in the formal and informal social and organizational structure. Individuals who engage in such behaviors tend to become more likable to their peers and colleagues. Other employees observe them and are able to anticipate their actions, being more likely to establish relationships with them. Citizenship behaviors such as civic virtue encourage the creation of contacts among employees (Bolino et al., 2002). Simply put, when employees participate in the social life of the organization (e.g. meetings or other events), they are likely to meet other people and make contacts with other employees in the organization and, thus, increase the number of their formal and informal network ties. Individuals who do more than is required of them, thus engaging in conscientiousness, tend to be viewed as competent, reliable, and trustworthy (Bolino et al., 2002; Kramer & Tyler, 1996). Other members of the organization are more likely to identify with individuals whom they like or view as reliable and competent (Bolino et al., 2002; Hogg & Terry, 2000). Thus, conscientious employees by being reliable and trustworthy can seem as more popular and likeable within the informal organizational structure. Helping behavior enhances team spirit, morale, the sense of belonging to a group and group cohesiveness



(P M Podsakoff et al., 1997; Philip M. Podsakoff et al., 2000). Furthermore helping behavior implies that the focal individual is eager and willing to help with work related matters. A natural consequence of this is that this individual is an advice giver, and thus central in the informal advice network. As social interaction tends to lead to interpersonal attraction (Insko & Wilson, 1977) that is, the degree of liking among individuals, advice givers interact more often with other organizational members and thus become more likeable. The latter should have an effect on their affective centrality. Good sportsmanship enhances the morale of the work group, and thereby helps to reduce employee turnover, and also ‘sportsmanlike behavior’ implies “rolling with the punches” and not complaining about trivial matters, setting an example for others (P M Podsakoff et al., 1997; Philip M. Podsakoff et al., 2000). This sort of ‘prototypicality’ may attract more popularity in the informal organizational structure. Such behavior reduces uncertainty and unpredictability and can make such an individual a point of reference in the everyday organizational formal and informal community.

*H1: Employees with higher OCBs will be more central in the informal friendship network (affective)*

*H2: Employees with higher OCBs will be more central in the informal advice network*

Connections established between individuals in informal (e.g., social) contexts may also be relevant in more formal (e.g., work) contexts. Thus, networks created for one purpose may often be useful for other purposes. (Bolino et al., 2002; Putnam, 1993)

Additionally Lincoln & Miller (Lincoln & Miller, 1979) show that high rank

organizational members, by definition high in formal centrality as their high hierarchical position implies a lot of workflow contacts, are also more central in the affective and instrumental organizational networks. Thus we expect that the behavioral networking patterns of informal networks stand also for the formal workflow network. The picture we frame is that a good citizen within an organization will be sought after as an informal and formal network tie more often than a 'worse' citizen. The formal workflow network has a degree of freedom as individuals can also choose with whom to work with. Also the central position in informal networks of good citizens also makes them receive more work related material. Therefore we hypothesize that;

*H3: Employees with higher OCBs will be more central in the formal workflow network*

### **Tie (dyadic) level**

We move our analysis to the dyadic level, putting OCBs into the test not only as an individual centrality predictor but also as a tie formation behavioral antecedent. Initial studies of OCB have used social exchange theory (Blau, 1964) as the basis for predicting citizenship behavior. Elements of social exchange theory predict that when employers provide their employees with positive work experiences, the employees will reciprocate through the performance of OCB. However OCB researchers have ignored individual relationships and possible exchange between employees, rather their focus has been on attitudinal variables such as job satisfaction that reflect an exchange between employee and organization (Bowler & Brass, 2006). Social exchange is a frame of reference within

which micro or macro perspectives can speak to each other, involving two sided actions and reactions mutually rewarding transactions or simply exchanges (Emerson, John, Harold, & Blau, 1976). Furthermore exchange theory considers social structure as a network of social relations involving exchange (Cook & Whitmeyer, 1992).

We are aligned with the notion of Homans (Homans, 1964) that social structures emerge from behavior and change over time in response to changes with this behavior. Homans talks about elementary forms of social behavior; however the dimensions of OCBs compose a predisposition to be socially active. Individuals are more likely to seek job-related resources within the organization such as work-related advice, work – material, new perspectives on work problems, factual information and direct assistance for solving problems from good citizens. Good citizens are more open and willing to receive such requests. As good citizens are more likely to be more popular and central in the formal and informal intraorganizational setting they should be more likely to receive one formal or informal tie. On the tie level where each tie is represented by a dyadic variable based on whether a given tie between two individuals exists or not, good citizens are more likely to have received one more tie rather than none, on this level.

Individuals are likely to match the goodwill and helpfulness toward the party with whom they have a social exchange relationship (Cropanzano, 2005; Settoon & Mossholder, 2002). According to this notion an employee who sees another employee as supportive, helpful or friendly is likely to return the gesture, leading to reciprocity. However we do not include the formal reciprocal relationships in this line of thinking because reciprocal

workflow captures reciprocal interdependence and its overlap with informal reciprocity is related to actor performance in a complex manner and (Anderson, 2009; Soda & Zaheer, 2012). Therefore we expect workflow reciprocity to be subject to different dynamics and interdependencies that the informal advice and affective networks:

*H2a: Employees with higher OCBs are more likely to receive an informal advice tie*

*H2b: Employees with higher OCBs are more likely to receive an informal friendship tie*

*H2c: Employees with higher OCBs are more likely to receive a formal workflow tie*

*H3a: Employees with higher OCBs are more likely to have a reciprocal informal advice tie with another employee with high OCBs*

*H3b: Employees with higher OCBs are more likely have a reciprocal informal friendship tie with another employee with high OCBs*

As explained before informal organizational structure may sometimes overshadow formal hierarchy of authority, and formal organizational structure coexists with friendship and instrumental structure (Brass et al., 2004; Lincoln & Miller, 1979; Soda & Zaheer, 2012). Given the formal division of labor and interdependencies in work material and feedback, a question one might ask is to what extent a colleague or peer is not only a workflow contact but also a friend or advice giver? We have already proposed that good citizens are more central in formal and informal networks. At the tie formation level one does not always choose workflow contacts, but she chooses the advice givers and the friends within the workplace. What does it take for a workflow contact to also be a friend

or advice giver? Based on the ‘good citizen’ prototypical characteristics described above we expect that a good citizen given that is already a workflow contact is more likely to be a friend and advice giver than a bad citizen.

*H4a: An employee with higher OCBs is more likely to receive an informal advice tie, given that she/he is already workflow tie.*

*H4b: An employee with higher OCBs is more likely to receive an informal friendship tie, given that she/he is already workflow tie*

The hypothesized relationships are depicted in the following Figures:

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Insert Figure 1 about here

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Insert Figure 2 about here

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## Methods

### Sample

The data was acquired via questionnaires submitted to employees of company ‘Luxottica’ in October 2013. Luxottica is the world's largest eyewear company with operations all around the world, counting more than 60.000 employees. The employees

that took part were the total number of 466 members of the HR department, with a response rate of 82,9% (381 respondents). The respondents were based in more than 26 locations across all five continents in more than 70 working teams. The sample consisted of 88 supervisors rating the OCBs of 341 subordinates (some supervisors were also rated themselves). Supervisors reported their direct reports' citizenship behaviors whereas everyone reported other members of the organization they consider as network ties. Everyone could choose from 0 to an unlimited number of friendship, workflow and advice ties. See also APPENDIX I for a description of the sample and the questionnaire items.

## Measures

**OCBs:** As mentioned before the relevant OCB dimensions applied are helping, sportsmanship, civic virtue and conscientiousness. These are measured with well established questionnaire items (Koys, 2001; P M Podsakoff et al., 1997; Philip M Podsakoff et al., 2000; Podsakoff & MacKenzie, 1990; Smith, Organ, Near, et al., 1983; Yen & Niehoff, 2004). The supervisors evaluated the OCBs of their direct subordinates, thus OCBs were not self-reported. In total 88 supervisors evaluated 341 subordinates, and most supervisors were also rated on their OCBs by their own supervisors.

The questionnaire items that the supervisors reported on their direct subordinates were the following:

*Helping*: “Willingly gives of her/his time to help colleagues who have work-related problems.”

*Sportsmanship*: “Consumes a lot of time complaining about trivial matters.”

*Civic Virtue*: “Attends and actively participates in meetings.”

*Conscientiousness*: “Attendance at work is above the norm.”

A confirmatory factor analysis showed that the four measures compose a single factor with a Cronbach Alpha of 0.6903. The respondents treated the different Organizational Citizenship Behavior items as capturing a single dimension of the subordinates' behavior. Also a principal factor analysis reveals only one factor for all items. Therefore in the analysis we treat the OCBs as a one-dimensional item.

**Network ties**: For identifying the network ties we use combined items from Mehra et al. (2001) and Klein et al. (2004). First respondents were asked to look down an alphabetical list of fellow employees and write the names of those individuals that "especially good friends". Friends were defined as "people with whom you like to spend your free time, people you have been with most often for informal social activities, such as visiting each other's homes, attending concerts or other public performances". For the advice network the question is defined as “people to whom you turn to seek advice on work-related issues” (Baldwin et al. 1997; Klein et al. 2004). The workflow network is described as materials and/or information that you need in order to do your job with different ties as inputs and outputs (Mehra et al. 2001). In all questions it was specifically mentioned that these individuals could be based geographically away, thus the network interactions can

be also made through emails, social networks (facebook, twitter etc) and similar means.

***Dependent variables:***

*Individual level:* The dependent variable is a measure of the extent to which each individual occupied a central position, by engaging in many ties, in the formal and informal networks, thus degree centrality (Freeman, 1979) is used. More specifically in-degree centrality is applied rather than out-degree centrality in the two sets of hypotheses.

In-degree centrality captures the extent to which other individuals in the network identify the focal actor as one of their contacts in the network (Kilduff & Krackhardt, 1994).

This way the centrality of an individual is judged by how many times his colleagues chose him as a tie, and not by how many ties are reported by herself/himself. Hence the in-degree centrality is the sum of the number of the incoming ties. We use Advice in-degree centrality, Friendship in-degree centrality and Workflow in-degree centrality.

*Tie level:* Dependent variable is a dummy variable representing whether the focal ego has created a (workflow / friendship / advice) tie with the focal alter in the given dyad.

***Controls:*** The controls used are age, tenure within the company, HR area, previous work experience, hierarchical position, country, region, team size, role, organization and scope. The sample is scattered in 7 regions among 26 countries. The HR area describes the more specific HR disciplines within the HR department (e.g. Compensation, HR management, Payroll administration etc) and organization refers to the different departments of the company that each respective HR discipline belongs to. Finally scope refers to the HR area and can be global, local (organization level) or regional (region



level). We also control for past ties from a previous survey. The past ties are derived from a questionnaire 6 months before the focal study, focusing on ties for knowledge, problem solving and energizing.

Control variables at the tie level are the demographics mentioned above at both the ego and alter level as well as at homophily controls at the dyadic level (same age, same gender, same country, same rank, same education).

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Insert tables 2a – 2b

about here  
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### Analysis

The dependent variables for the first set of hypotheses are advice, friendship and workflow in-degree centrality. In-degree centrality is a count variable, where the number of incoming ties for each network is monitored. In-degree centrality follows a negative binomial distribution, with a small number of nodes receiving a lot of ties or being good brokers, and a lot of nodes being less central and in a less advantageous position within the networks. In many social networks, researchers have found that most actors have only a few ties, while a small number have extraordinarily many ties (Barabási & Albert, 1999; Borgatti & Everett, 2000). Similar patterns exist in many different settings (Barabási, 2003; Guimerà et al., 2005; Newman, 2004; Uzzi & Guimera, 2007)

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Insert Graph 1 about here  
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For the first set of hypotheses we run 3 Models with a negative binomial regression. In the first Model the first set of controls (rank, supervisor, tenure, experience, education,

gender, team size) is applied and in the second model we add the Country, HR area, Scope, Role (task), and the past ties. In the last model we add also the centrality in the other networks.

For the tie (dyadic) level hypotheses we run logistic regressions at a dataset transposed to entail all possible pairwise ties (217156 observations). The ego and alter OCBs are centered in order to capture the base level interaction effects. We run a total of 31 different logistic regressions to investigate all possible combinations of outcomes. For brevity not all regression results are reported, but we have collected all results in a table, discussed later in the results section.

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 Insert table 3 about here  
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## Results

The regression results for the first set of hypotheses are shown in Tables 4a - 4c.

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 Insert Tables 4a – 4c about here  
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In all negative binomial regression Models the OCB predictor is significant, verifying

hypotheses 1a-1c. Other significant predictors are being a supervisor, which is prevalent with the highest coefficient among all models, the Rank and the Past ties, as well as the current ties from the other networks. This is intuitive, since by definition supervisors or high rank individuals should receive more ties in all kinds of formal and informal intraorganizational networks. Additionally popularity in one informal or formal network increases the probability of being popular in more networks, in line with Lincoln & Miller (Lincoln & Miller, 1979) and also remotely related to Barabasi's preferential attachment (Barabási & Albert, 1999).

As far as the second set of hypotheses is concerned the findings are reported in the following table, followed by the logistic regression models

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 Insert Table 5a about here  
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 Insert Table 5b - 5e about here  
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Hypotheses 2a-2c are confirmed (boxes B1 - E1 – H1). The tie creation direction is from the ego to the alter and we see that if the alter is having higher OCBs she is more likely to receive a friendship, advice tie or workflow tie. Furthermore another interesting fact is that also the OCBs of the ego as well as the interaction term between them are

significant, indicating a kind of ‘agency’ or ‘tendency’ of good citizens not only to receive ties, but also more likely to create ties as well, especially for the advice network. Hypotheses 3a-3b regarding reciprocity based on social exchange are also confirmed (boxes L1 & O1), implying that it takes two good citizens to reciprocate each other. Here is also notable that even without the interaction the citizenship behaviors of the ego or the alter are still significant on their own. Finally Hypotheses 4a-4b are partially confirmed. More specifically (boxes B2 & E2) if an alter is already a workflow tie, in order for the ego to choose her as an advice tie the OCBs of the alter are significant (hyp 4a). However the same does not stand for forming a friendship tie as well, breaking down hypothesis 4b and revealing a different dynamic in the creation of an advice ties versus an affective friendship tie. However it can be seen inside box F2 that for a friendship tie to be created, given that a workflow tie exists already, both individuals need to be good citizens. This is an interesting takeaway, showing that the nature of affectivity in the workplace is a mutual construct at the dyadic level, and doesn’t depend only on individual behaviors. Table 5e includes exploratory, non-hypothesized relationships. Some results will be discussed in the conclusion section. One of the most interesting patterns that arise from the logistic regressions is that gender homophily, or basically that being of the same gender is significant in predicting friendship ties and no other ties within the workplace.

### **Robustness checks**

In terms of model specification we have performed additional analyses with normal OLS

models, OLS models with log-transformed the dependent variables of centrality and models with clustering around the locational dummies (organization, country, team). For all models our results stand. The measures come from various sources; each person's colleagues (the community) rate in-degree centrality by choosing the focal person in question as a tie whereas the supervisor evaluates the focal person's OCBs. Thus the focal person has no influence on the centrality and OCBs ratings. The supervisor rates the OCBs and the community creates the "popularity" in degree centrality measure, so these two measures come from entirely independent sources. So the fact that a causal relationship is established between these two completely independent measures makes it quite robust.

However still a big challenge of the current theoretical framework is reverse causality. In other words why OCBs predict centrality and not network centrality increasing one's OCBs. This is partially solved by controlling for past ties. Past centrality significantly predicts current centrality, but OCBs remain a significant predictor of current centrality even after controlling for it. A second argument can be made by the dyadic level hypotheses, where it is shown that OCBs are behaviors associated with receiving and forming ties. However, in order to break down the reverse causality case completely we also instrument OCBs with another variable. We will use an instrument at the dyadic level of the relationship between the focal subordinate and her supervisor, who is the one to rate the OCBs. Therefore OCBs ratings should be affected and centrality not, as long as that instrument is unobservable by the community. For this reason we use the amount of reciprocal ties between a subordinate and her supervisor interacted with the gender of the supervisor. This forms a type of "relationship quality" which appears in the literature

to be strongly related to OCBs, or in other words a subordinate enjoying a good relationship with her direct supervisor is more likely to exhibit higher OCBs, or to be rated as having higher OCBs. However to tease out possible spillover effects from the supervisor to the subordinate we interact it with the gender dummy of the supervisor. Supervisor genders are completely random, and out of the sample of 443 observations, 220 have a male supervisor whereas 223 have a female supervisor. As an instrument we hypothesize that gender differences interacted with the relationship quality with the supervisor might have a marginal effect on the ratings of the OCBs of the focal individual. In other words having a good relationship with a female rather than a male supervisor might have a difference on the subordinate's OCBs ratings. On the other hand the gender of the supervisor should not have any effect whatsoever on the centrality of the subordinate, thus it should be uncorrelated with the number of incoming formal and informal ties. The aforementioned instrument (IV variable) is only valid for the formal workflow and the informal advice network. For the informal affective (friendship) network the first stage regression is insignificant. Therefore for the affective network we used a similar but slightly different instrument. Once more interacted with the random gender of the supervisor, we used the brokerage of the supervisor (IV2 variable). Informal brokerage of supervisor is irrelevant with the affective popularity of the subordinate, however it affects the OCBs of the follower, because the supervisor can observe better the subordinate's OCBs, or because a broker supervisor inspires more his subordinates to engage in OCBs. Correlational analysis confirms this notion:

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Insert Table 6 about here  
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For the instrumental variable analysis we use a two stages least squares approach. The dependent variables are the network in degree centralities log transformed to better fit the least squares model. The results of the two stage least squares test are reported below, as well as the post estimation tests, suggesting that actually the relationship is not endogenous making even stronger the case that OCBs predict network centrality and not the other way around.

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Insert Table 7 about here  
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## Conclusion

The current study provides with a behavioral antecedent of networking centrality, namely organizational citizenship behaviors. We have shown that OCBs play a one-way role and enhance formal and informal network centrality. Starting from the individual level we show that good citizens are more attractive advice givers, friends and workflow contacts within the organization confirming our notions that citizenship is a socially rewarded attribute within an organization.

Consequently by transposing the dataset to the dyadic (tie) level dyadic level, dynamics



of tie formation are brought forward. By taking the level of analysis from the individual level to the tie level we are able to get a “micro to macro” insight of this behavior. We not only show that OCBs predict network centrality, but also that good citizens are more likely to receive ties. Additionally we show that a tie takes two good citizens to be reciprocated, confirming a social exchange notion. This is a novel research design, where it is shown that at the dyadic level not only dyadic level mutual variables are important for tie formation, but also ego or alter level behaviors, such as OCBs here in particular.

Another finding at the tie level is a sort of “multiplexity” index. In other words, given that a network alter is a workflow tie, thus a person that has a work related relationship with the focal individual, citizenship of that alter predicts the formation of an extra advice or friendship tie. Thus citizenship makes work partners more attractive advice givers and friends, introducing OCBs not only as a networking behavior but also as a behavior that can cause an extra informal multiplex tie to be formed.

An interesting finding is that the citizenship of the ego (the individual who creates the tie) and not only of the alter (the individual who receives the tie) is significant. This result reveals a sort of ‘agency’ from the ego side. People may seek for good citizens in the organization to connect with them, but at the same time good citizens are also more socially active, as they are more likely themselves to engage in relationships with others. This justifies the statement that OCBs ‘lubricate the social machinery of the organization’ (Smith, Organ, Near, et al., 1983).

An overall pattern that arises from the logistic regressions on the tie level is the

differentiation in the creation of friendship ties, reciprocal or not. First of all in order for a workflow contact to become a friend as well, the OCBs of both the ego and alter are necessary, contrary to hypothesis 4b. In order for an individual to go for advice to a workflow contact, the alter's citizenship is significant. Thus it can be the case that bad citizens go to good citizens for advice. But bad citizens don't develop with their workflow contacts a friendship tie. Good citizens become friends with good citizens who are already workflow contacts. Another finding on friendship networks is that gender equality becomes significant only among friendship ties in an organizational setting. It is more likely that individuals of the same gender will be friends, whereas for advice or workflow cooperation it seems that it is insignificant. Given that gender differences are a dynamic topic in the organizational behavior literature, further research could look into affective organizational networks compared to informal or formal ones and examine their degree of overlaps or complementarities.

This essay is an attempt to combine organizational behavior and networking behavior, thus contributing both to social networks literature as well as organizational behavior literature. More specifically we identify OCBs as a new predictor of network centrality in the intraorganizational social network literature and networks centrality as a new individual level outcome of OCBs in the organizational behavior literature. This enriches what is already known on individual attributes behind intraorganizational networks, following the paradigms of Mehra et al. (2001) and Klein et al. (2004) and lays one more brick into unraveling and further understanding which exact mechanisms lie behind the backbone of organizational social networks and shape them. Additionally the results add

to the organizational behavior stream citizenship behaviors posing as behavioral antecedents of organizational networks.

Future research could look deeper into tie level dynamics, examining these dynamics across different levels of analysis, for example from the micro to the organizational or team level. On this direction we have already ran some exploratory analyses, concerning working relationships within and across teams (table 5e). This is not theorized in the paper, however creates an interesting path for more tie level and across levels OCBs dynamics and theory. Future research could look into more such dynamics within or across teams and the extent to which OCBs are a visible virtue across teams and locations or only locally, or incorporating other variables as well.

Another research setting could include examining deeper the complementarities or differences among the various intraorganizational networks, as witnessed already with friendship in the current setup. There are common elements concerning formal and informal networks on the individual level, such as centrality as already shown in the first set of hypotheses, but by taking a more micro perspective the differences begun to unravel. For example the fact that gender quality matters for friendship, whereas is insignificant for advice networks is one part of the informal network differences and more research is necessary in order to understand better the affective and informal components of the organizational structures.

Finally another interesting concept not addressed is that of bridging ties. We have looked

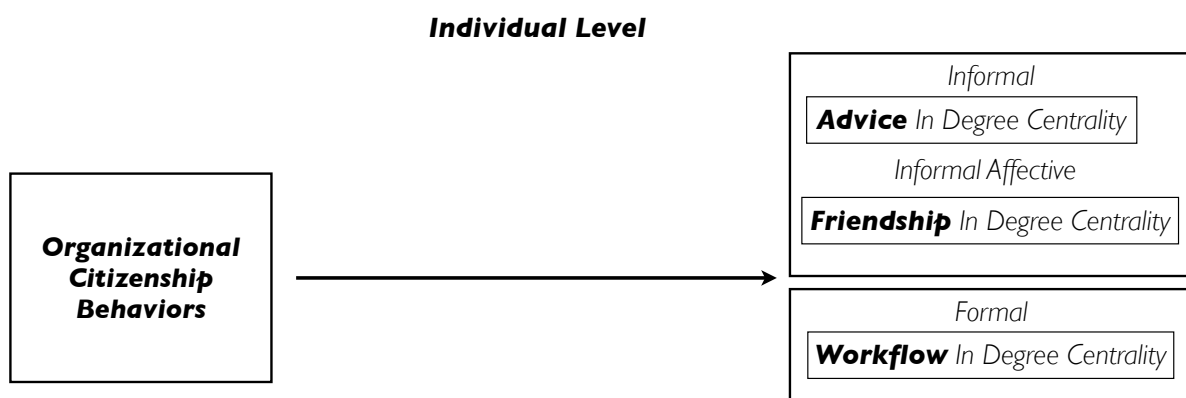
into tie formation and in-degree centrality, but there exist some ties that are bridging unconnected individuals and shortening the average path length of a network. These ties assign a “brokerage” informational advantage to their initiators. Future research could isolate the analysis into the subset of these ties and investigate possible antecedents of their formation or attributes of brokers.

## List of Tables I

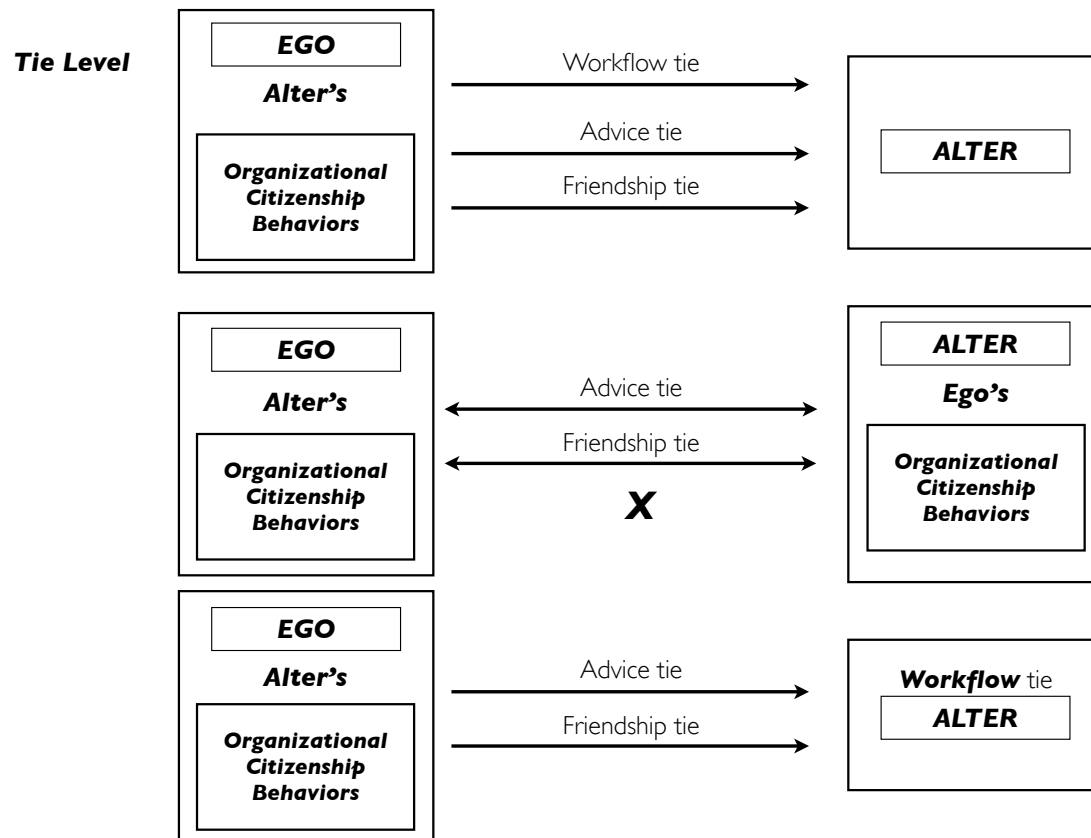
**Table 1: Dyadic and individual networks antecedents**

Dyadic Level	Individual Level
<i>(Ahuja, Soda, &amp; Zaheer, 2011; Rivera, Soderstrom, &amp; Uzzi, 2010; Brass, Galaskiewicz, Greve, &amp; Tsai, 2004; Mehra, A., Kilduff, M., &amp; Brass, D. J. 1998)</i>	<i>(Sasovova et al., 2010; Mehra et al., 2001; Klein et al., 2004; Kleinbaum, Jordan, &amp; Audia, 2015; Rubineau &amp; Polman, 2012)</i>
Homophily	Self - monitoring
Heterophily	Neuroticism
Prominence Attraction	Openness to Experience
Proximity	Narcissism
Inertia - Past Ties	Associability
	Education

**Figure 1: Summary of relationships – individual level**



**Figure 2: Summary of relationships – tie level**



**TABLE 2a: Descriptive statistics – individual level**

Variable	Obs	Mean	S.D.	Min	Max
Advice in degree	466	3.133047	4.742793	0	40
Workflow In degree	466	4.935622	5.520649	0	33
Friendship In degree	466	1.817597	2.160991	0	15
OCBs	341	3.87E-10	0.8059554	-3.803576	0.9418817
Rank	459	1.638344	0.7790448	1	4
SUPERVISOR	466	0.2296137	0.4210364	0	1
TENURE	458	2272.214	3649.717	22	41548
EXPERIENCE	459	2.847495	1.388761	1	6
AGE	466	2.351955	0.6552577	1	3
EDUCATION	466	2.507003	1.419702	1	5
gender	466	0.7467811	0.4353226	0	1
TEAM_SIZE	443	6.386005	3.527844	1	15

**TABLE 2b: Correlation table**

	Advice in degree	Workflow In degree	Friendship In degree	OCBs	Rank	SUPERVISOR
Advice in degree	1					
Workflow In degree	0.8533*	1				
Friendship In degree	0.4323*	0.4915*	1			
OCBs	0.1236*	0.1728*	0.2510*	1		
Rank	0.4674*	0.5121*	0.2820*	-0.1063	1	
SUPERVISOR	0.5038*	0.5310*	0.1312*	0.0104	0.4064*	1
TENURE	0.0845	0.0345	-0.0423	-0.0389	-0.0191	-0.0098
EXPERIENCE	0.2192*	0.1756*	-0.0116	-0.0587	0.1761*	0.1870*
AGE	-0.2133*	-0.1349*	0.0989*	-0.011	0.0166	-0.1566*
EDUCATION	-0.0458	-0.0767	-0.1035*	-0.0981	-0.037	-0.0707
gender	-0.1378*	-0.1759*	-0.0744	-0.0589	-0.1350*	-0.1514*
TEAM_SIZE	0.3404*	0.3867*	0.2120*	-0.0563	0.4470*	0.4098*

	TENURE	EXPERIENCE	AGE	EDUCATION	gender	TEAM_SIZE
TENURE	1					
EXPERIENCE	0.4677*	1				
AGE	-0.2993*	-0.4634*	1			
EDUCATION	0.3231*	0.2146*	-0.1858*	1		
gender	0.064	-0.0138	0.0387	0.0911*	1	
TEAM_SIZE	0.0568	0.1523*	-0.1653*	0.0701	-0.1485*	1

**Table 3: Descriptive statistics – Tie level**

<b>Variable</b>	<b>Obs</b>	<b>Mean</b>	<b>S.D.</b>	<b>Min</b>	<b>Max</b>
Workflow Tie	217156	0.0105915	0.1023686	0	1
Friendship Tie	217156	0.0039004	0.0623316	0	1
Advice Tie	217156	0.0067233	0.0817197	0	1
egoGENDER	217156	0.7467811	0.4348562	0	1
alterGENDER	217156	0.7467811	0.4348562	0	1
sameGENDER	217156	0.6218018	0.4849385	0	1
alterRank	213894	3.361656	0.7781975	1	4
egoRank	213894	3.361656	0.7781975	1	4
sameRank	217156	0.3898119	0.4877086	0	1
alter TENURE	213428	2272.214	3645.739	22	41548
ego TENURE	213428	2272.214	3645.739	22	41548
centered alter OCBs	158906	3.79E-10	0.8047753	-3.803576	0.9418817
centered ego OCBs	158906	3.79E-10	0.8047753	-3.803576	0.9418817
alter EXPERIENCE	213894	2.816993	1.437615	0	6
egoEXPERIENCE	213894	2.816993	1.437615	0	6
alterAGE	217156	2.351955	0.6545558	1	3
ego AGE	217156	2.351955	0.6545558	1	3
alter EDUCATION	217156	2.507003	1.418181	1	5
egoEDUCATION	217156	2.507003	1.418181	1	5



**Graph 1: Degree distributions**

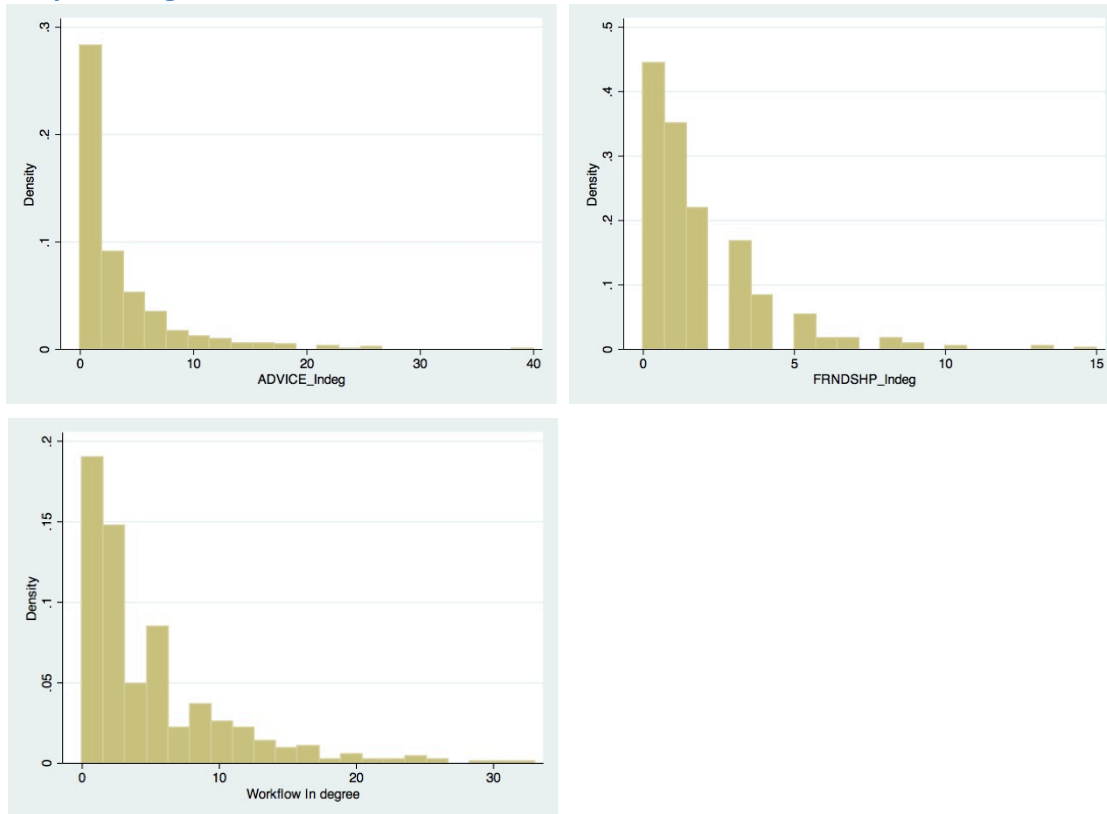


Table 4a: Hyp. 1

	MODEL I		MODEL II		MODEL III	
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Advice In Degree	Inalpha	Advice In Degree	Inalpha	Advice In Degree	Inalpha
Workflow In Degree					0.0610***	
					(1.30e-08)	
Friendship In Degree					0.0903***	
					(1.10e-06)	
<b>OCBs</b>	<b>0.406***</b>		<b>0.233***</b>		<b>0.125**</b>	
	(1.25e-07)		(0.000670)		(0.0393)	
Rank	0.505***		0.262***		-0.0414	
	(3.62e-09)		(0.00901)		(0.687)	
SUPERVISOR	0.691***		0.768***		0.585***	
	(7.47e-07)		(9.09e-07)		(0.000139)	
TENURE	1.03e-05		5.36e-05*		2.33e-05	
	(0.709)		(0.0894)		(0.437)	
EXPERIENCE	0.0668		-0.00759		0.0952*	
	(0.236)		(0.897)		(0.0962)	
AGE	-0.301***		0.0419		0.0517	
	(0.00199)		(0.632)		(0.522)	
EDUCATION	-0.0421		-0.0504		-0.0514	
	(0.344)		(0.155)		(0.109)	
GENDER	0.0233		0.0296		0.00791	
	(0.857)		(0.799)		(0.942)	
TEAM_SIZE	0.0248		-0.0482**		-0.0319	
	(0.223)		(0.0205)		(0.123)	
HR AREA			YES		YES	
SCOPE			YES		YES	
COUNTR			YES		YES	
ROLE			YES		YES	
PAST KNOWLEDGE In Degree			0.0500*		0.0478**	
			(0.0596)		(0.0397)	
PAST ENERGIZING In Degree			-0.0820***		-0.0452**	
			(0.000329)		(0.0288)	
PAST PROBLEM In			0.140***		0.0612**	

Degree						
			(1.28e-08)		(0.0116)	
Constant	0.375	-0.385***	0.777	-3.350***	0.0736	-16.56
	(0.291)	(0.00449)	(0.117)	(1.30e-05)	(0.877)	(0.963)
Observations	332	332	203	203	203	203
pval in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

Table 4b: Hyp. 2

	MODEL I		MODEL II		MODEL III	
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Friendship In Degree	Inalpha	Friendship In Degree	Inalpha	Friendship In Degree	Inalpha
Advice In Degree					0.0609**	
					(0.0108)	
Workflow In Degree					0.0105	
					(0.559)	
<b>OCBs</b>	<b>0.452***</b>		<b>0.412***</b>		<b>0.369***</b>	
	(1.46e-09)		(7.73e-06)		(4.99e-05)	
Rank	0.330***		0.245*		0.0950	
	(3.78e-05)		(0.0644)		(0.491)	
SUPERVISOR	-0.144		-0.110		-0.306	
	(0.303)		(0.565)		(0.123)	
TENURE	-1.06e-05		2.08e-05		9.97e-06	
	(0.690)		(0.665)		(0.831)	
EXPERIENCE	-0.00296		-0.107		-0.0492	
	(0.954)		(0.183)		(0.537)	
AGE	0.137		0.0804		0.0888	
	(0.142)		(0.447)		(0.385)	
EDUCATION	-0.0301		0.0131		0.00830	
	(0.468)		(0.769)		(0.849)	
GENDER	-0.00168		0.0804		0.0529	

	(0.989)		(0.553)		(0.690)	
TEAM_SIZE	0.0451***		-0.00795		0.00898	
	(0.00852)		(0.752)		(0.723)	
HR AREA			YES		YES	
SCOPE			YES		YES	
COUNTR			YES		YES	
ROLE			YES		YES	
PAST KNOWLEDGE In Degree			0.105***		0.0879**	
			(0.00383)		(0.0129)	
PAST ENERGIZING In Degree			-0.0886***		-0.0721**	
			(0.00683)		(0.0213)	
PAST PROBLEM In Degree			0.0656**		0.0114	
			(0.0431)		(0.746)	
Constant	-0.374	-0.922***	0.303	-3.327***	0.0376	-4.155*
	(0.261)	(6.67e-07)	(0.628)	(0.00470)	(0.952)	(0.0912)
Observations	332	332	203	203	203	203
pval in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

Table 4c: Hyp 3

	MODEL I		MODEL II		MODEL III	
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Workflow In Degree	Inalpha	Workflow In Degree	Inalpha	Workflow In Degree	Inalpha
Advice In Degree					0.0545***	
					(8.38e-07)	

Friendship In Degree					0.0293**	
					(0.0385)	
<b>OCBs</b>	<b>0.334***</b>		<b>0.193***</b>		<b>0.130**</b>	
	(9.63e-10)		(0.000298)		(0.0104)	
Rank	0.400***		0.296***		0.176**	
	(0)		(0.000139)		(0.0192)	
SUPERVISOR	0.510***		0.462***		0.327***	
	(1.01e-06)		(4.52e-05)		(0.00284)	
TENURE	4.16e-06		-3.25e-06		-2.45e-05	
	(0.830)		(0.882)		(0.292)	
EXPERIENCE	0.0370		-0.0138		0.0420	
	(0.354)		(0.738)		(0.319)	
AGE	-0.0888		-0.0248		-0.0502	
	(0.207)		(0.714)		(0.431)	
EDUCATION	-0.0190		-0.00627		-0.00852	
	(0.554)		(0.819)		(0.744)	
GENDER	0.00432		0.0758		0.0734	
	(0.963)		(0.376)		(0.359)	
TEAM_SIZE	0.0245*		-0.0131		-0.00224	
	(0.0751)		(0.385)		(0.878)	
HR AREA			YES		YES	
SCOPE			YES		YES	
COUNTR			YES		YES	
ROLE			YES		YES	
PAST KNOWLEDGE In Degree			0.0147		-0.00295	
			(0.469)		(0.876)	
PAST ENERGIZING In Degree			-0.0521***		-0.0321**	
			(0.00185)		(0.0402)	
PAST PROBLEM In Degree			0.0747***		0.0178	
			(8.25e-05)		(0.376)	
Constant	0.766***	-1.100***	1.839***	-4.143***	1.682***	-16.36
	(0.00320)	(0)	(9.70e-07)	(6.68e-06)	(2.21e-06)	(0.961)
Observations	332	332	203	203	203	203
pval in parentheses						
*** p<0.01, **						

p<0.05, * p<0.1						
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**Table 5a: Tie Level Results**

EGO->ALTER			A	B	C	D	E	F	G	H	I
			Advice Tie			Friendship Tie			Workflow Tie		
			Ego OCBs	Alter OCBs	ego X alter OCBs	Ego OCBs	Alter OCBs	ego X alter OCBs	Ego OCBs	Alter OCBs	ego X alter OCBs
1	Generally		0.2***	0.15**		0.145*	0.29***	0.49***		0.18***	
2	workflow tie ?	Y		0.27**				0.86***			
3		N	0.3***		0.25**		0.43***	0.28**			
4	within team ?	Y				0.92***	0.29*	0.75***		0.28**	
5		N	0.22***	0.22**			0.39***	0.35***		0.23**	
EGO->ALTER			J	K	L	M	N	O			
			Advice Reciprocity			Friendship Reciprocity					
			Ego OCBs	Alter OCBs	ego X alter OCBs	Ego OCBs	Alter OCBs	ego X alter OCBs			
1	Generally		0.41**	0.36**	0.46***	0.4**	0.39**	0.69***			
2	workflow tie ?	Y			0.35*			0.7***			
3		N	1.2***	0.89**	0.98***	0.48**	0.6***	0.77***			
4	within team ?	Y				1.2***	0.92***				
5		N	0.42**	0.48**	0.47***			0.6***			

**Table 5b: Tie level logistic regressions**

	(1)	(2)	(3)
VARIABLES	Advice tie dummy	Advice tie dummy (if workflow=0)	Advice tie dummy (if workflow=1)
Friendship tie dummy	1.500*** (0)	2.342*** (0)	0.852*** (4.40e-05)
Workflow tie dummy	3.231*** (0)		
egoGENDER	0.0881 (0.468)	-0.257 (0.119)	<b>0.469***</b> (0.00415)
alterGENDER	0.0662 (0.585)	-0.0411 (0.802)	0.203 (0.233)
sameGENDER	-0.0222 (0.849)	-0.0158 (0.921)	0.0337 (0.833)
alterRank	-0.675*** (0)	-0.696*** (0)	-0.611*** (6.90e-08)
egoRank	0.0912 (0.226)	-0.0730 (0.473)	0.448*** (0.000133)
sameRank	0.339*** (0.00293)	0.345** (0.0271)	-0.0485 (0.766)
alterPERFORMANCE	0.181* (0.0941)	0.270* (0.0623)	0.00527 (0.974)
egoPERFORMANCE	0.295*** (0.00597)	0.243 (0.104)	0.199 (0.204)
alter TENURE	5.19e-05*** (0.00337)	5.80e-05** (0.0123)	7.04e-05 (0.129)
ego TENURE	-4.36e-05 (0.166)	-7.94e-05 (0.102)	-5.68e-05 (0.248)
alter OCBs	<b>0.151**</b> <b>(0.0394)</b>	<b>0.0207</b> <b>(0.827)</b>	<b>0.270**</b> <b>(0.0199)</b>
egoOCBs	<b>0.200***</b> <b>(0.00783)</b>	<b>0.296***</b> <b>(0.00994)</b>	<b>0.0501</b> <b>(0.633)</b>
ego OCBs X alterOCBs	<b>0.115</b> <b>(0.181)</b>	<b>0.254**</b> <b>(0.0146)</b>	<b>-0.0962</b> <b>(0.491)</b>
alterEXPERIENCE	-0.0337 (0.483)	-0.0948 (0.131)	-0.0379 (0.676)
egoEXPERIENCE	0.0220 (0.718)	0.0161 (0.852)	0.122 (0.181)

alter AGE	-0.286*** (0.000956)	-0.434*** (0.000213)	-0.0866 (0.506)
ego AGE	-0.244*** (0.00446)	-0.235** (0.0440)	-0.189 (0.157)
alter EDUCATION	-0.0363 (0.389)	-0.0140 (0.801)	-0.0382 (0.554)
ego EDUCATION	0.0667* (0.0979)	0.0661 (0.231)	0.0480 (0.432)
PAST_PRBLMdummy	1.557*** (0)	1.899*** (0)	0.660*** (0.00623)
PAST_NRGdummy	0.726*** (0.000912)	1.119*** (0.000608)	0.274 (0.287)
PAST_KNOWdummy	1.187*** (1.33e-08)	0.909*** (0.00300)	1.232*** (1.13e-06)
sameCOUNTRY	1.536*** (0)	2.497*** (0)	-0.357* (0.0749)
sameROLE	0.345** (0.0161)	0.512*** (0.00712)	-0.0859 (0.681)
sameAGE	0.195* (0.0810)	0.291* (0.0556)	0.0603 (0.713)
sameEDUCATION	0.0719 (0.539)	0.221 (0.166)	-0.107 (0.519)
Advice tie dummy			
Constant	-4.696*** (0)	-4.326*** (2.62e-06)	-0.958 (0.341)
Observations	46,018	45,046	972
pval in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

**Table 5c: Tie level logistic regressions**

	(4)	(5)	(6)	(7)
VARIABLES	Friendship tie dummy	Friendship tie dummy (if workflow=0)	Friendship tie dummy (if workflow=1)	
				Workflow tie dummy
Friendship tie dummy				1.305***



Workflow tie dummy	1.506***			(0)
	(0)			
egoGENDER	-0.0896	0.00924	-0.150	
	(0.520)	(0.961)	(0.477)	<b>-0.508***</b>
alterGENDER	-0.0358	0.110	-0.176	(5.85e-09)
	(0.798)	(0.563)	(0.415)	-0.111
sameGENDER	<b>0.327**</b>	0.260	0.355*	(0.205)
	(0.0151)	(0.159)	(0.0838)	-0.0506
alterRank	0.0918	-0.106	0.434***	(0.546)
	(0.306)	(0.368)	(0.00273)	<b>-0.597***</b>
egoRank	-0.466***	-0.412***	-0.523***	(0)
	(1.21e-07)	(0.000404)	(0.000840)	<b>-0.523***</b>
sameRank	0.598***	0.746***	-0.0566	(0)
	(1.21e-06)	(2.05e-06)	(0.783)	0.430***
alterPERFORMANCE	0.236*	0.198	0.239	(1.96e-07)
	(0.0533)	(0.204)	(0.248)	0.0563
egoPERFORMANCE	0.207*	0.112	0.227	(0.492)
	(0.0847)	(0.474)	(0.241)	-0.101
alter TENURE	-4.47e-06	-1.88e-06	-4.35e-06	(0.215)
	(0.881)	(0.961)	(0.947)	-1.44e-05
ego TENURE	2.45e-05	2.30e-05	2.64e-05	(0.509)
	(0.319)	(0.362)	(0.699)	<b>-7.80e-05***</b>
<b>alter OCBs</b>	<b>0.291***</b>	<b>0.430***</b>	<b>-0.00935</b>	(0.00309)
	<b>(0.00196)</b>	<b>(0.000499)</b>	<b>(0.953)</b>	<b>0.176***</b>
<b>egoOCBs</b>	<b>0.145*</b>	<b>0.114</b>	<b>0.171</b>	<b>(0.00132)</b>
	<b>(0.0894)</b>	<b>(0.314)</b>	<b>(0.222)</b>	<b>0.0511</b>
<b>ego OCBs X alterOCBs</b>	<b>0.493***</b>	<b>0.277**</b>	<b>0.858***</b>	<b>(0.322)</b>
	<b>(4.97e-10)</b>	<b>(0.0410)</b>	<b>(1.81e-06)</b>	<b>0.0773</b>
alterEXPERIENCE	-0.139**	-0.101	-0.205*	<b>(0.202)</b>
	(0.0239)	(0.206)	(0.0782)	-0.0389
egoEXPERIENCE	-0.0780	-0.0856	-0.113	(0.363)
	(0.184)	(0.231)	(0.348)	0.00351
alter AGE	0.335***	0.191	0.340**	(0.939)
	(0.00155)	(0.172)	(0.0430)	-0.0111
ego AGE	0.228**	0.562***	-0.0548	(0.869)
	(0.0332)	(0.000120)	(0.750)	0.0294
alter EDUCATION	0.0268	0.0254	-0.0118	(0.667)
	(0.584)	(0.684)	(0.888)	0.0232
ego EDUCATION	0.104**	0.250***	-0.0877	(0.477)
	(0.0274)	(2.84e-05)	(0.270)	0.0975***
PAST_PRBLMdummy	1.025***	0.607*	0.997***	(0.00235)
	(2.20e-06)	(0.0721)	(0.000269)	0.582***
PAST_NRGdummy	0.606**	0.755**	0.451	(0.00483)

	(0.0116)	(0.0403)	(0.140)	0.773***
PAST_KNOWdummy	0.890***	1.703***	0.521*	(0.000543)
	(5.95e-05)	(1.38e-08)	(0.0752)	0.259
sameCOUNTRY	2.604***	2.836***	1.252***	(0.212)
	(0)	(0)	(8.83e-05)	2.215***
sameROLE	1.301***	1.465***	0.716***	(0)
	(0)	(0)	(0.00192)	0.151
sameAGE	0.570***	0.660***	0.281	(0.191)
	(8.61e-06)	(8.06e-05)	(0.173)	0.00286
sameEDUCATION	0.162	0.412**	-0.278	(0.974)
	(0.208)	(0.0115)	(0.193)	0.327***
Advice tie dummy	1.589***	2.490***	0.901***	(0.000198)
	(0)	(0)	(2.00e-05)	3.200***
Constant	-8.728***	-9.629***	-3.927***	(0)
	(0)	(0)	(0.00182)	-1.755***
				(0.000555)
Observations	46,018	45,046	972	
pval in parentheses				46,018
*** p<0.01, ** p<0.05, * p<0.1				

**Table 5d: Tie level logistic regressions**

	(8)	(9)	(10)	
VARIABLES	Advice reciprocity dummy	Advice reciprocity dummy (if workflow=1)	Friendship reciprocity dummy	11
egoGENDER	0.172	0.561*	-0.0649	Friendship reciprocity dummy (if workflow=1)
	(0.515)	(0.0908)	(0.767)	0.109
alterGENDER	0.396	0.781**	-0.0737	(0.737)
	(0.130)	(0.0243)	(0.735)	0.0654
sameGENDER	-0.135	0.0616	0.532**	(0.844)
	(0.591)	(0.850)	(0.0123)	0.513
alterRank	-0.344**	0.125	-0.112	(0.110)

	(0.0189)	(0.506)	(0.431)	0.181
egoRank	-0.465***	-0.0549	-0.409***	(0.384)
	(0.00118)	(0.774)	(0.00391)	-0.383*
sameRank	-0.0914	-0.597*	0.773***	(0.0835)
	(0.698)	(0.0646)	(3.79e-05)	-0.123
alterPERFORMANCE	0.473**	0.338	0.382**	(0.684)
	(0.0375)	(0.254)	(0.0396)	0.145
egoPERFORMANCE	0.307	0.624**	0.366*	(0.618)
	(0.166)	(0.0265)	(0.0512)	0.256
alter TENURE	-6.47e-05	-0.000191**	2.48e-05	(0.361)
	(0.314)	(0.0232)	(0.446)	-5.70e-05
ego TENURE	-0.000161**	-0.000105	2.69e-05	(0.582)
	(0.0213)	(0.217)	(0.432)	5.86e-06
alter OCBs	<b>0.360**</b>	<b>0.106</b>	<b>0.390**</b>	(0.956)
	<b>(0.0347)</b>	<b>(0.587)</b>	<b>(0.0109)</b>	<b>-0.0387</b>
egoOCBs	<b>0.415**</b>	<b>0.118</b>	<b>0.401***</b>	<b>(0.861)</b>
	<b>(0.0162)</b>	<b>(0.536)</b>	<b>(0.00848)</b>	<b>0.318</b>
ego OCBs X alterOCBs	<b>0.457***</b>	<b>0.353*</b>	<b>0.691***</b>	<b>(0.136)</b>
	<b>(0.00345)</b>	<b>(0.0925)</b>	<b>(2.24e-09)</b>	<b>0.703***</b>
alterEXPERIENCE	-0.0858	0.199	-0.308***	<b>(0.000686)</b>
	(0.470)	(0.211)	(0.000275)	-0.217
egoEXPERIENCE	0.163	0.148	-0.313***	(0.203)

	(0.178)	(0.360)	(0.000239)	-0.252
alter AGE	-0.341**	-0.298	0.221	(0.149)
	(0.0415)	(0.162)	(0.159)	0.150
ego AGE	-0.504***	-0.767***	0.0139	(0.525)
	(0.00254)	(0.000569)	(0.928)	-0.311
alter EDUCATION	0.0725	0.150	0.124*	(0.195)
	(0.407)	(0.169)	(0.0885)	-0.0347
ego EDUCATION	0.0579	0.00417	0.167**	(0.766)
	(0.486)	(0.966)	(0.0184)	0.00947
PAST_PRBLMdummy	1.722***	0.310	1.894***	(0.931)
	(5.59e-06)	(0.441)	(2.18e-10)	1.270***
PAST_NRGdummy	0.531	0.720*	0.546	(0.000787)
	(0.196)	(0.0839)	(0.107)	0.120
PAST_KNOWdummy	1.226***	0.0535	1.461***	(0.782)
	(0.00221)	(0.900)	(3.19e-06)	0.826**
sameCOUNTRY	3.438***	1.233**	2.996***	(0.0407)
	(0)	(0.0264)	(0)	2.230***
sameROLE	0.197	-0.558	1.435***	(0.00327)
	(0.530)	(0.203)	(0)	0.999***
sameAGE	0.0245	0.0971	0.640***	(0.00152)
	(0.914)	(0.728)	(0.00112)	0.374
sameEDUCATION	0.487**	0.202	0.323*	(0.202)

	(0.0353)	(0.488)	(0.0919)	-0.254
Constant	-6.809***	-5.693***	-8.978***	(0.419)
	(1.88e-06)	(0.00130)	(0)	-4.251**
				(0.0189)
Observations	46,018	972	46,018	
pval in parentheses				972
*** p<0.01, ** p<0.05, * p<0.1				

**Table 6: Instrumental Variables Correlation Table**

	Log Advice In degree	Log Workflow In degree	Log Friendship In degree	OCBs_factor	IV1	IV2
Log Advice In degree	1					
Log Workflow In degree	0.7788*	1				
Log Friendship In degree	0.3753*	0.3984*	1			
OCBs_factor	0.1405*	0.1520*	0.1778*	1		
IV1	0.0651	0.0729	0.1013	0.1479*	1	
IV2	0.0116	0.074	0.0919	0.1877*	0.4034*	1

Table 7a: Second stage regressions

	(1)	(2)
VARIABLES	logADVICE_Indeg	logWorkflow_Indeg
<b>OCBs_factor</b>	<b>1.075*</b>	<b>0.944**</b>
	(0.0567)	(0.0399)
Rank	0.587***	0.433***
	(2.06e-06)	(1.03e-06)
SUPERVISOR	0.485***	0.579***
	(0.00177)	(2.71e-05)
TENURE	-2.01e-06	-3.28e-06
	(0.962)	(0.933)
EXPERIENCE	0.0731	0.0601
	(0.367)	(0.409)
AGE	-0.229**	-0.0490
	(0.0290)	(0.588)
EDUCATION	-0.00811	-0.00429
	(0.873)	(0.923)
gender	0.153	0.0946
	(0.382)	(0.474)
TEAM_SIZE	0.00421	0.0296
	(0.869)	(0.113)
Constant	0.0669	0.231
	(0.916)	(0.642)
Observations	240	299
R-squared	0.015	0.073
pval in parentheses		
*** p<0.01, ** p<0.05, * p<0.1		

Tests of endogeneity log ADVICE in degree

Ho: variables are exogenous

Durbin (score) chi2(1) = 3.12227 (p = 0.0772)

Wu-Hausman F(1,229) = 3.01844 (p = 0.0837)

log Workflow in

Tests of endogeneity degree

Ho: variables are exogenous

Durbin (score) chi2(1) = 3.51917 (p = 0.0607)

Wu-Hausman F(1,288) = 3.43008 (p = 0.0650)

**TABLE 7b: Second stage regressions**

	(1)
VARIABLES	logFRNDSHP_Indeg
OCBs_factor	<b>0.666**</b>
	<b>(0.0384)</b>
Rank	0.277***
	(0.00175)
SUPERVISOR	-0.198
	(0.149)
TENURE	-1.81e-05
	(0.594)
EXPERIENCE	0.0277
	(0.655)
AGE	0.172**
	(0.0369)
EDUCATION	0.0203
	(0.609)
gender	0.0727
	(0.522)
TEAM_SIZE	0.0361**
	(0.0149)
PAST_TIES_withAVG	0.339
	(0.293)
Constant	-0.462
	(0.261)
Observations	243
pval in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

**Tests of endogeneity**

Ho: variables are exogenous

Durbin (score)  $\chi^2(1)$  = 2.84778 (p = 0.0915)  
Wu-Hausman F(1,231) = 2.73925 (p = 0.0993)

**Table 5e: Additional tie level results**

		TABLE 5E ADDITIONAL RESULTS					
EGO->ALTER		A	B	C	D	E	F
		Advice Tie			Friendship Tie		
		Ego OCBs	Alter OCBs	ego X alter OCBs	Ego OCBs	Alter OCBs	ego X alter OCBs
1	Is Workflow tie within the team ?		0.56*		1***		1.4***
2	Is Workflow tie outside the team ?		0.24*				0.61***
3	Is within the team no Workflow tie ?	0.53**			0.92***		
4	Is outside the team no Workflow tie ?	0.49***		0.28**		0.53***	0.27*



## CHAPTER 2: Do OCBs matter for Individual Performance after all? Individual, Team and Supervisor level moderators

### Abstract

*We try to unravel and put into the test the effects of Organizational Citizenship Behaviors on individual performance. There exist different frameworks linking performance to OCBs with mixed findings. However there is no clear answer as to which extent OCBs contribute to individual level performance and under which conditions. We try to answer this question by applying various level moderators interfering between the engagement of OCBs and individual performance ratings. These are separated in three levels: on the individual level, the team level and the supervisor level. Next to individual level rank and experience, team level team size and density, we additionally apply some network variables, such as individual network centrality and supervisor level centrality and brokerage. The data comes from a survey in the HR department of a multinational company, spanning across many departments, locations and countries and the intraorganizational network in question is the advice network.*

## Introduction

Extra-role performance is distinguished as a specific type of individual performance involving behaviors that support the organization but are not normally found in an individual's job description and normally exceed the minimum role requirements of the job, are not easily enforceable, and are discretionary (Organ, 1988). Thus, individuals who spend time on these support activities are considered "good citizens" and the behaviors Organizational Citizenship Behaviors, or OCBs (Bateman & Organ, 1983). Recent research has focused on consequences of OCBs regarding managerial evaluations of performance and judgments regarding pay raises, promotions on the individual level and organizational performance and success on the organizational / group level (Philip M. Podsakoff et al., 2000). As far as the organizational level there are several reasons why citizenship behaviors might enhance organizational effectiveness, for example by enhancing coworker and managerial productivity, freeing up resources, helping to coordinate activities within and across work groups among others (Organ, 1988b; Philip M Podsakoff et al., 1997; Philip M. Podsakoff et al., 2000).

However what applies to the organizational level of analysis may not apply necessarily to the individual level (Ostroff, 1992). At the individual level, job performance consists of task performance and extra role performance, like OCBs. Organ has disentangled between managerial evaluation of job performance and managerial rewards and citizenship behaviors in the original definition of OCBs (Organ, 1988). Later findings however reported by MacKenzie et al. (MacKenzie et al., 1991, 1993) indicated that managers

actually take OCBs into account when evaluating the performance of their subordinates and not only task performance, thus confusing the two. Podsakoff et al. (2000) in their extensive review on OCBs collected a number of reasons why OCBs might influence managerial evaluations of performance (e.g. norms of Reciprocity/Fairness, Implicit Performance Theories and others). They also included studies that were testing for common method variance, as well as studies that used objective measures of performance, and not only managerial evaluations. They conclude that although controlling for these biases generally weakens the relationship between OCBs and individual performance, but does not eliminate it. However a better understanding of the reasons why managers might include citizenship behavior in their evaluations, given the relatively limited number of studies looking at OCBs performance consequences is still necessary. Podsakoff et al. (2000) suggested future research on the moderating effects of organizational context (i.e., the level of turnover, the nature of the compensation system, etc.) and task and technological requirements (i.e., the nature of the technology and/or tasks that employees perform, the amount of teamwork required across jobs, etc.). In addition, they proposed that future research should also investigate the potential moderating effects of individual differences such as ability, experience, training, and knowledge and other moderators (Podsakoff et al., 2009).

Another recent paper by Bergeron (Bergeron, 2007) suggests an alternative route, arguing that task performance has stronger effects on performance evaluations than do OCBs theorizing a potential trade – off between task and extra role performance, indicating clearly that additional research needs to be conducted on this issue. While both task

performance and OCB are taken into account in determining performance evaluations and rewards, task performance is typically weighted more heavily than OCBs (Borman & Motowidlo, 1993; MacKenzie et al., 1991, 1993). Based on this, Bergeron (2007) introduced the idea that OCBs may come at the expense of task performance, given that engaging in OCBs takes time and resources that would alternatively be used for improving task performance. All these pave the way for our research; a lot of moderating variables on the relationship between OCBs and individual performance remain unexplored.

The aforementioned issues frame the research question of this essay. There is a link between citizenship behavior and individual performance, however there are many missing pieces to understand the exact dimensions of this relationship. The relationship between individual OCBs and individual performance will be tested with moderators from different levels. We test individual level dimensions, such as individual experience and rank, team level dimensions and supervisor level dimensions. Beyond specific attributes like rank and experience, the informal organizational structure is taken into account. We use network measures such as the informal organizational centrality and brokerage. Such networking variables introduce an advantageous access to resources and information, as well as quicker reach, a shorter path, across the organization. We theorize that such properties interact with the focal individual's OCBs either as a spillover effect from the supervisor or as the focal individual's own values. Building on the trade – off suggested by Bergeron (2007) we investigate the potential interactions of OCBs towards facilitating or hampering individual performance. Additionally differential team features such as density and team

size provide different resources, or group social capital (Oh et al., 2004), conditioning the relationship between team members OCBs and their performance.

## Theory

### A closer look on task performance in three levels

Bergeron (2007) suggests a trade-off between OCB and task performance, setting forth a theoretical possibility that OCB could be good for the organization but costly to the individual. Bergeron (2007) grounds the theory on resource allocation and more specifically on time allocation devoted to task performance or OCB. Any change in time allocated to OCBs comes at a cost to task performance and vice versa, making the two types of performance are not independent. Four types of moderators that might affect the OCB – performance relationship are described: organizational moderators, situational moderators, individual differences and types of OCBs. Organizational moderators include the type of reward systems (behavioral or outcome based), situational moderators include reciprocity of OCBs and visibility of OCBs, while individual differences include hours worked and the level of OCBs.

Having close interaction with the focal organization and by running a preliminary exploratory study we have narrowed down four relevant OCB dimensions that would apply to our specific organizational setting and were considered by the firm as more easily observed and understood by the participants. These are the dimensions widely used in the literature, namely civic virtue, sportsmanship, helping behavior and conscientiousness (Koys, 2001; P M Podsakoff et al., 1997; Philip M Podsakoff et al., 2000; Podsakoff &

MacKenzie, 1990; C. A. Smith et al., 1983; Yen & Niehoff, 2004).

Helping behavior includes actions that help another person with a work related issue; instructing a new hire on how to use equipment, helping a colleague catch up etc.

Sportsmanship implies a posture of tolerating the inevitable inconveniences and impositions of work without complaining or whining. Conscientiousness is a pattern of going well beyond minimally required levels of attendance, punctuality, housekeeping, conserving resources, and related matters of internal maintenance. Finally Civic Virtue brings about responsible, constructive involvement in the political process of the organization, attending meetings and sharing informed opinions and new ideas with others.

### Individual level

Borman and Motowidlo (1993) discussed how some jobs, such as sales, contribute to the “technical core” of the organization while other jobs, such as managerial ones, contribute indirectly via efforts as planning, organizing, and supervising (Bergeron, 2007). Organ (1988) comments, “The higher the rank of an organizational member, the more diffused are the expected, role-related obligations of that member”. Studies using managers show a more equal distribution of the value given to task performance and OCBs (MacKenzie et al., 1993) and Bergeron (2007) theorizes that OCBs may have a higher relationship to outcomes for ambiguous jobs than for non-ambiguous jobs. Additionally Podsakoff & MacKenzie (MacKenzie et al., 1993; Podsakoff, Mackenzie, & Posdakoff, 1994) showed

a potential moderating role of experience on OCBs effects on performance, at the team level, because of experienced individuals helping out inexperienced ones. At these studies the overall effect was negative for the team, confirming some of Bergeron's (2007) arguments about time allocation, but the effect on the individual level remained unknown. Given that managerial jobs are more ambiguous (Bergeron, 2007), require higher level skills in order to supervise effectively or engage in other motivational or administration tasks and are by definition tasks that are at a higher rank at the organization and require more experience, we suggest that:

*H1a: The relationship between individual OCBs and Performance is moderated positively by the rank of the individual*

*H1b: The relationship between individual OCBs and Performance is moderated positively by the experience of the individual*

Intraorganizational networks facilitate the access, exchange and transmission of organizational resources, information and communication. An individual's position in these networks can be advantageous. More specifically network brokerage captures the access to work related resources and information of an individual and reflects the structural ('gatekeeper') advantage that the bridging ties entail (Ahuja, 2000; Burt, 2004; Fleming, Mingo, & Chen, 2007; Freeman, 1979; Granovetter, 1973). For example it has been widely shown that network structures and ties provide various advantages and individuals with networks rich in "structural holes" are more likely to be promoted early, enjoy greater career mobility or adapt to changing environments more successfully (Burt,

1992; Gargiulo & Benassi, 2000; Podolny & Baron, 1997). There are also links between network centrality and individual performance, e.g. informal communication centrality with promotion (Brass, 1984) or workflow centrality with supervisor ratings (Mehra et al., 2001) or centrality in information networks in a knowledge intensive environment with individual performance ratings (Cross & Cummings, 2004). Sparrowe & Liden (Sparrowe et al., 2001) also showed that individual job performance was positively related to centrality in informal networks.

Network scholars have identified an array of formal and informal workplace networks, including communication, advice, influence, and friendship networks (Klein et al., 2004; Mehra et al., 2006; Soda & Zaheer, 2012). Although organizational structure shapes networks in organizations, informal organizational structure is very crucial as well and may even overshadow formal hierarchy of authority (Brass et al., 2004). In the current study we incorporate the informal advice network which is “comprised of relations through which individuals share resources such as information, assistance, and guidance” (Klein et al., 2004). Centrality in the advice network reflects an individual's involvement in exchanging assistance with coworkers and engaging in mutual problem solving as well as sharing resources such as information, assistance, and guidance (Sparrowe et al., 2001). This advantageous access to resources can enhance the positive effect of OCBs on the evaluation of performance. Brokers and central people need to allocate less time to engage in OCBs, since that they are already centrally linked in the advice network active in engaging in citizenship behaviors. Therefore the trade off between OCBs and task performance because of time allocation is positive for brokers and popular individuals, because they need to allocate less time for the same level of OCBs. Access to more



diverse resources in the organization should also leverage the advantageous effects of OCBs on task performance. Additionally Bergeron (2007) suggested that there is an interaction between OCBs and task performance on performance evaluations. Therefore we expect that:

*H1c: The relationship between individual OCBs and Performance is positively moderated by the informal advice brokerage of the individual*

### **Group level**

A set of resources that inheres within a structure of relations of individual actors coincides with the definition of social capital (Burt, 1992; Coleman, 1988; Nahapiet & Ghoshal, 1998). Oh, Chung & Labianca (Oh et al., 2004; Oh, Labianca, & Chung, 2006) create the concept of group social capital as the “configuration of a group’s members’ social relationships within the social structure of the group itself, as well as in the broader social structure of the organization to which the group belongs, through which necessary resources for the group can be accessed”. They focus on informal socializing ties and show that group social capital enhances group performance.

The effects of dense and frequent work relationships have been very influential in the literature, stemming from Coleman’s “closure” (Coleman, 1988). Sparrowe and Liden (2001) showed as well that density of an advice network within a group is positively related to group performance. When group members exchange advice with a larger proportion of other group members, the group benefits in terms of greater cooperation, greater information sharing, a stronger sense of accountability, greater agreement on

expectations, and less tendency to engage in social loafing (Sparrowe et al., 2001). A typology of social capital focuses on features that support cohesiveness and thereby facilitate the pursuit of collective goals within groups (Adler & Kwon, 2002). Access to more information and resources within a group is enhanced by denser groups or larger groups, which by definition are composed by more members and consist of more possible ties and resources. Group social capital entails the idea that people or groups with more social capital can more effectively employ other types of capital they possess (such as financial resources, knowledge, skills, and abilities), and develop common norms (Coleman, 1988). Therefore the bigger availability of resources should decrease again the time needed to engage in OCBs, and as well leverage the advantageous effects of OCB on individual performance. We expect that:

*H2a: The relationship between individual OCBs and Performance is positively moderated by the informal density of the team*

*H2b: The relationship between individual OCBs and Performance is positively moderated by the team size*

### **Supervisor level**

Leader or supervisor level moderators are important for various reasons. First supervisors might observe at different levels the OCBs of their subordinates and secondly they might inspire their subordinates differentially to engage in OCBs. OCBs may vary in their level of visibility or distinctiveness and managers search for distinctive information when asked

to make evaluations of employees (Bergeron, 2007; DeNisi, Cafferty, & Meglino, 1984). Additionally OCBs are more likely to be rewarded if they are visible to others (Bergeron, 2007). Supervisors that are well connected in the informal organization structure have more access to information and people, and therefore can observe the OCBs of their subordinates and 'sense' the effects of their behaviors across the organization. Centrally located leaders in informal networks, such as the advice network also perceive their groups' attitudes toward group relevant issues more accurately than others (Oh et al., 2006).

Another reason is that an advantageous network position of a supervisor gives informational advantage and access to resources to her and consequently the team members. It can be the team leader's or the supervisor's position that also affects the whole team performance, as one task of the group leader is to serve as a bridge between formal organizational groups (Burt, 2000). The formal structure of most organizations provides limited opportunities for contact among members of different work groups, and it is the also the informal structure centrality of group leaders among other leaders to increase a group's performance (Mehra et al., 2006). This can be translated into an advantage that team members of a well – connected team supervisor have. A team leader spends time and energy pursuing important external ties that will assist in gaining valuable resources for the group (Oh et al., 2004, 2006). According to the norm of reciprocity (Gouldner, 1960) individuals respond positively to favorable treatment received from others (Blau, 1964). These exchange models focus on the inducements or stimuli provided by the relationship. Employees attempt to reciprocate these possible advantageous

inducements provided by their employers by engaging in OCB (Coyle-Shapfro, 2002).

Therefore leader centrality provides more visibility and information to the leader on the subordinates' behavior and leader brokerage provides more resources to the team, increasing the performance. We expect that:

*H3a: The relationship between individual OCBs and Performance is positively moderated by the informal advice brokerage of the direct supervisor*

*H3b: The relationship between individual OCBs and Performance is positively moderated by the informal advice popularity of the direct supervisor*

The hypothesized relationships are depicted in the following Figure:

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Insert Figure 1 about here  
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## Methods

### Sample

The data was acquired via questionnaires submitted to employees of company 'Luxottica' in October 2013. Luxottica is the world's largest eyewear company with operations all around the world, counting more than 60.000 employees. The employees that took part were the total number of 466 members of the HR department, with a response rate of 82,9% (381 respondents). The respondents were based in more than 26 locations across all five continents in more than 70 working teams. The sample consisted of 88 supervisors rating the OCBs of 341 subordinates (some supervisors were also rated themselves). Supervisors reported their direct reports' citizenship behaviors whereas everyone reported other members of the organization they consider as network ties. Everyone could choose from 0 to an unlimited number of friendship, workflow and advice ties. See also APPENDIX I for a description of the sample and the questionnaire items.

### Measures

#### *Dependent Variable*

*Performance:* By Performance individual level performance is implied. Performance is evaluated from the supervisor on the direct subordinates, the same way as the OCBs, in a scale from 1 to 3 (low, good, outstanding). The evaluation of performance took place at a different point in time than the OCB evaluation, thus making the two measures independent.

#### *Independent Variables:*

*OCBs*: The relevant *Organizational Citizenship Behaviors* (OCB) dimensions applied are *helping, sportsmanship, civic virtue* and *conscientiousness*. These are measured with well established questionnaire items (Koys, 2001; P M Podsakoff et al., 1997; Podsakoff, MacKenzie, Moorman, & Fetter, 1990; Philip M Podsakoff et al., 2000; Smith, Organ, Near, et al., 1983; Yen & Niehoff, 2004). The supervisors evaluated the OCBs of their direct subordinates, thus OCBs were not self-reported. In total 88 supervisors evaluated 341 subordinates, and most supervisors were also rated on their OCBs by other supervisors. A confirmatory factor analysis showed that the four measures compose a single factor with a Cronbach Alpha of 0.6903. The respondents treated the different Organizational Citizenship Behavior items as capturing a single dimension of the subordinates' behavior. Also a principal factor analysis reveals only one factor for all items. Therefore in the analysis we treat the OCBs as a one-dimensional item.

The questionnaire items that the supervisors reported on their direct subordinates were the following:

*Helping*: “Willingly gives of her/his time to help colleagues who have work-related problems.”

*Sportsmanship*: “Consumes a lot of time complaining about trivial matters.”

*Civic Virtue*: “Attends and actively participates in meetings.”

*Conscientiousness*: “Attendance at work is above the norm.”

Common method variance with Performance is not an issue although supervisors reported both measures. Firstly the two measures were collected at different time periods, and more specifically performance was reported a few months later than OCBs and secondly the two

measures are not even correlated at the correlational analysis.

*Informal network (advice):* For identifying the network ties we use combined items from Mehra et al. (2001) and Klein et al. (2004). Respondents were asked to look down an alphabetical list of fellow employees and write the names of those “people to whom you turn to seek advice on work-related issues” (Baldwin et al., 1997; Klein et al., 2004).

*Rank:* The rank refers to the rank of the individual, as taken from the company records.

Ranks vary from 1 to 4, where 4 is the highest rank

*Experience:* Experience refers to the individual’s professional experience (outside or within the company), taken as well from the company records. It is divided in 6 stages (<2 years, 2-5 yrs., 5-10 yrs., 10 -15yrs., 15-20yrs., >20yrs.)

*Scope:* The scope is a company measure referring to the scope of the role of each individual. It illustrates whether that individual’s reach is restricted at a local, regional or global level.

*Centrality:* To measure degree centrality, in- degree centrality is applied (Freeman, 1979). This way the centrality of an individual is judged by how many times his colleagues chose him as a tie, and not by how many ties are reported by herself/himself. To measure brokerage the betweenness centrality measure is applied.

*Density:* A group’s density is the sum of the valued tie strengths in the group divided by the total possible sum of tie strengths among all members in the group (Scott, 2012), calculated with UCINET ‘density by groups’ routine.

*Team size* is the size of the working group that is monitored by each individual. We define as working group the group of subordinates that have the same direct supervisor.

*Controls:* The controls used are age, tenure within the company, HR area, country, region, role, organization and scope. The sample is scattered in 7 regions among 26 countries. The HR area describes the more specific HR disciplines within the HR department (e.g. Compensation, HR management, Payroll administration etc) and organization refers to the different departments of the company that each respective HR discipline belongs to.

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 Insert Table 1 about here  
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 Insert Table 2 about here  
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## Analysis

We investigate the hypotheses using OLS regression analysis, with the respective interaction term for each hypothesis. For each set of hypotheses we apply two models, one with the basic control variables and one including additional controls (country, organization, hr area and role). The OCBs are centered, so the main effect of the interaction concerns the mean OCBs. On the other hand Rank and Experience are rated from 0 to 3 and from 0 to 5 respectively, with enough observations at the lower end of 0 (APPENDIX I). Thus the main effects of the interactions with the Rank and the



Experience are meaningful, as the zero value represents the minimum Experience (less than 2 years in this case) and the lowest rank, which is the majority of the observations. We also ran robustness regressions with dummies for low and high rank and experience and the results are the same. Team density, advice in degree and advice betweenness centrality have also meaningful zero values representing most observations in the sample. Team size was also centered as its minimum value of 1 was producing a non-meaningful main effect.

## Results

Hypotheses 1a – 1b are confirmed as illustrated in Table 3.

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 Insert Table 3 about here  
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As it is shown, the main effect of rank is significant as well as the moderation effect with the OCBs, whereas experience is significant only when being interacted with OCBs. An interesting fact is that the main effect of OCBs on performance is negative for less experienced individuals or low rank individuals. This is an interesting finding, in line with Bergeron's (2007) theoretical arguments, which will be further discussed in the discussion section. The interaction and the main effect are graphically depicted in graphs 1 -2. For individuals with very low experience or at the lowest rank the slope of the effect of the OCBs on their individual performance is significantly downward, whereas for very

experienced or individuals at the highest rank turns upwards.

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 Insert Graph 1 about here  
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 Insert Graph 2 about here  
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Hypothesis 1c is also confirmed as shown in Table 4

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 Insert Table 4 about here  
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Being a broker in the informal advice network accounts as well as an individual level positive moderator of performance. Betweenness centrality is normalized and has meaningful zero values for the main effects. However the main effects are not significant, in contrast with rank and experience.

Hypotheses 2a – 2b on the team level interaction effects are also verified as shown in Table 5, validating our conjectures for team density and size effects:

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Insert Table 5 about here

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Finally the set of hypotheses 3a – 3b concerning the supervisor level moderators are also verified. Thus, as hypothesized the supervisor by means of having the potential to observe the subordinates OCBs or by actually providing to the subordinate more motivation and resources can have an effect on the OCBs influence on the subordinate's performance. Once more there is a negative main effect of OCBs for non connected supervisors, providing further support for the hypothesized relationship.

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Insert Table 6 about here

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### **Robustness checks**

To confirm the results we perform a series of additional tests. In terms of model specification we have performed additional analysis models with clustering around the locational dummies (organization, country, team). For all different specifications our results stand.

To further analyze the rank and experience interaction effects we do the OLS regression tests with a split sample around the median value of the rank and experience respectively.

We create a dummy for High – Low Rank and High – Low Experience and interact this

dummy with the OCBs. The results remain the same confirming the positive interaction effect as rank and experience increase and the negative main effect of OCBs for low rank – low experience individuals.

To account for the theoretical value of an individual's reach and access to resources through informal in – degree centrality and betweenness centrality we incorporate one more available variable, more specifically the scope of the individual's task. This is a firm specific measure in three levels, local – regional – global, and refers on whether the focal individual's responsibilities and duties are applied at either the local, regional or global level. In our models we use it as a control, without theorizing on its role, because it is a firm specific variable. However it is useful to the extent that it verifies and proxies a local – regional – global reach of an individual. By interacting the scope with the OCBs individual's OCBs we get the same pattern of results as with the in – degree and betweenness centrality: the more global the more positive the effect of OCBs on individual performance. This acts as an additional verification of the validity of the centrality measures and their moderating role.

Concerning the supervisor level moderators (in-degree and betweenness advice centrality) we have theorized that better interconnected supervisors can either monitor better their direct subordinates' OCBs or provide them with more resources and motivation stemming from their central position. In order to tease out the possibility that such supervisors just rate the subordinates' OCBs or Performance in a different way because of other individual antecedents they might have that bring about their centrality we run our models with one

more control. From the sample of 344 rated subordinates there is a small subset of 20 subordinates whose OCBs have been rated by more than supervisors, because in the questionnaire the choice concerning the subordinates selection was open and any supervisor was asked to rate their direct reports. Apparently 6% of the subordinates were rated by more than one supervisors, revealing a little ambiguity on reporting within the organization, but offering an interesting control to see whether it makes a difference. The subset is very small and controlling for it doesn't change the results, however strengthens a bit our claim that it is the resources and motivation offered by the supervisor and not so much the fact that individual attributes predispose a differential OCB and Performance rating.

## Conclusion

The goal of this paper is to shed more light in the relationship between OCBs and individual Performance. The existing literature presents different and sometimes even competing views of how important OCBs or extra role behaviors are in performance evaluations. Another part of the theory, raised theoretically by Bergeron (2007) has also focused on the extent to which OCBs might actually drive away time and resources from in role or task performance. Additionally previous research called for potential moderators of this relationship at the individual or firm level. We have answered to this call and have been able to tackle some of these questions at different levels.

We established individual (subordinate) level moderators of the relationship between individual OCBs and Performance evaluations. More specifically in the first set of our hypotheses the interaction effects of the individual rank and experience are established. This confirms the theory: more experienced individuals or individuals higher in the hierarchy have different needs and different resources in the workplace which has an effect on the way they engage in OCBs and on the possible outcomes of their OCBs on individual Performance. In terms of rank, as already presented before, more advanced tasks (administration, supervision etc.) and higher positions require more extra role behaviors and higher level skills than lower level ones, such that OCBs might be efficient or sometimes even discretionary for such tasks and higher ranked individuals. With a similar reasoning one's experience helps in the same direction by handling OCBs and task performance in a more effective way, requiring less resources (time as Bergeron (2007) has theorized) for the same OCB behaviors, shifting the trade off between engaging in OCBs versus task behaviors towards positive overall performance.

What is interesting here and strengthens even more the hypothesized relationships is the fact that the main effect of OCBs on low rank and low experience is negative. In other words, not only these variables have a positive interaction with the focal individual's OCBs, but also if the focal individual is inexperienced or low in the hierarchy, engaging in OCBs is actually bad for her individual performance. This has been theorized on with the time resource trade-off suggested, or that engaging in OCBs takes away time from the actual job of low rank and inexperienced people, whose task doesn't require any citizenship behaviors in order to be performed more effectively. Thus supervisors might

actually observe this behavior and rate those individuals less favorably. For example a low level trainee who is all the time participating in meetings and events or is constantly networking and seeking or giving advice can be seen as doing things that she should not do and rather focus on required tasks. On the other hand social participation, advice giving and positive attitude are more aligned with a manager's required behavior and performance. This is reflected in our results and is an extremely important finding for citizenship behaviors in an organizational context, as the downside of citizenship behaviors is illustrated empirically.

Apart from rank and experience we apply also informal betweenness centrality as a moderator on the individual level. The informal network in our setting is the advice network, a well established intraorganizational network in the literature where work related advice is flowing in. Betweenness centrality, or brokerage, is generated by the community and is not an objective attribute like experience and rank. To the extent that betweenness advice centrality represents an advantageous access to resources within the organization, we theorize that this benefit will interact positively with the practice of OCBs. More specifically this favorable access to resources should decrease the necessary time for engaging in OCBs, while it leverages the results of OCBs as well through the network.

We also show that team level variables are important for the cultivation of a positive effect of team members' OCBs on individual level performance. Denser and bigger teams provide with more resources and social capital making it easier for the team members to

engage in OCBs and to leverage those OCBs without shifting away many resources from the task performance. Finally supervisor level access to resources and centrality in the organization is important for the above-mentioned reason and for the fact that a socially rewarded and important supervisor can better stimulate and motivate her team.

There are various contributions from this research. First of all it is adding up to the conversation on the impact of OCBs on individual performance, and more specifically individual performance evaluations. We also address the issue of the potential moderated relationships previously suggested in the literature. It also presents a response to the recently developed theory of Bergeron (2007) that OCBs might actually degrade task performance and performance evaluations, and not always contribute in a positive way.

Advancing these thoughts further we introduced moderators on three levels, on the individual, the team and the supervisor level. Variables or attributes on all these three levels interact with the impact of OCBs on individual performance. This is important because it shows there is an interplay and interaction between individuals, teams and supervisors within an intraorganizational framework, with outcomes on the individual level. Future research could advance our findings into the team and organizational level and investigate performance and OCBs at these levels. Next to the individual trade off between OCBs and task performance there exists also a potential trade off between OCBs of different individuals and collective team or organization level results. These trade offs on different levels with outcomes and consequences on a more macro level could be



further investigated in order to acquire a more full picture of the downsides and advantages of citizenship behavior within organizations.

## List of Tables II

Figure 1: Summary of hypotheses

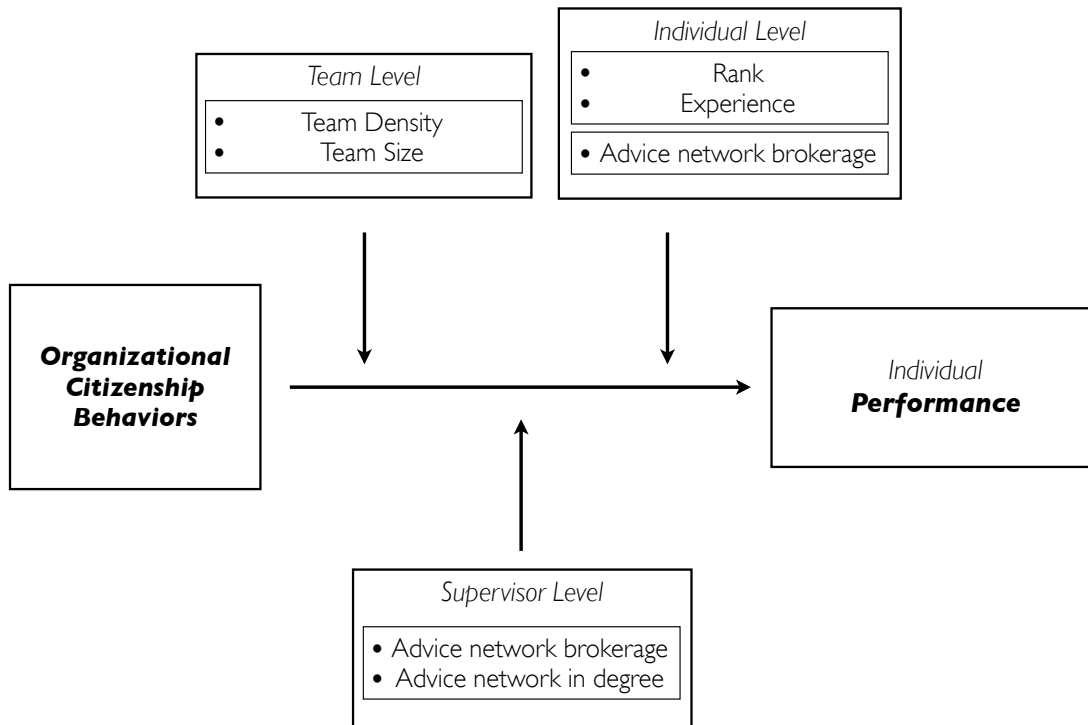


Table 1: Descriptive statistics

**TABLE 1**

Variable	Obs	Mean	S.D.	Min	Max
Performance	459	2.189542	0.5086797	1	3
OCBs	341	6.021689	0.8317904	2.25	7
Advice Indegree of sup	443	9.832957	7.689924	0	40
Advice betweenness of sup	436	0.3355517	1.132384	-0.5933449	3.692601
Advice in degree	466	3.133047	4.742793	0	40
Advice Betweenness	408	2.85E-09	1	-0.3736215	8.073895
Rank	459	0.638344	0.7790448	0	3
EXPERIENCE	459	1.847495	1.388761	0	5
SUPERVISOR	466	0.2296137	0.4210364	0	1
TENURE	458	2272.214	3649.717	22	41548
AGE	466	2.351955	0.6552577	1	3
EDUCATION	466	2.507003	1.419702	1	5
gender	466	0.7467811	0.4353226	0	1
TEAM_SIZE	443	6.386005	3.527844	1	15
Team density	426	3.78E-09	1	-0.3366691	6.151657

Table 2: Correlation table

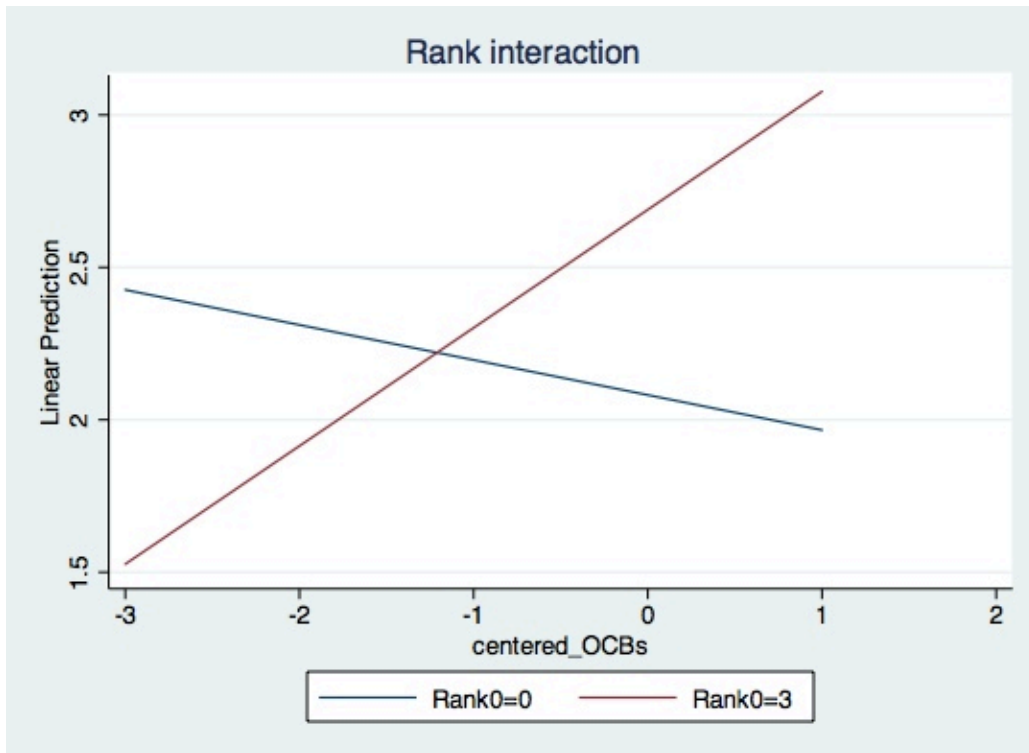
TABLE 2								
	Performance	OCBs	Advice Indegree of sup	Advice betweenness of sup	Advice in degree	Advice Betweenness	Rank	EXPERIENCE
Performance	1							
OCBs	0.0537	1						
Advice Indegree of sup	0.1335*	0.089	1					
Advice betweenness of sup	0.1613*	0.0458	0.4379*	1				
Advice in degree	0.2674*	0.1101*	0.3550*	0.3263*	1			
Advice Betweenness	0.1951*	0.0194	0.2352*	0.2298*	0.5796*	1		
Rank	0.2780*	-0.0843	0.4410*	0.2960*	0.4674*	0.3718*	1	
EXPERIENCE	0.0462	-0.0544	0.2123*	0.2189*	0.2192*	0.1448*	0.1761*	1
SUPERVISOR	0.1745*	0.0188	0.2965*	0.2689*	0.5038*	0.3664*	0.4064*	0.1870*
TENURE	0.0067	-0.0569	0.0898	-0.0006	0.0845	-0.0148	-0.0191	0.4677*
AGE	0.0371	-0.0052	-0.1083*	-0.0958*	-0.2133*	-0.0925	0.0166	-0.4634*
EDUCATION	0.0691	-0.1003	0.0246	-0.0296	-0.0458	-0.0003	-0.037	0.2146*
gender	-0.0396	-0.0548	-0.033	-0.0608	-0.1378*	-0.1579*	-0.1350*	-0.0138
TEAM_SIZE	0.1213*	-0.0351	0.5151*	0.3913*	0.3404*	0.1860*	0.4470*	0.1523*
Team density	0.0664	-0.064	0.0564	0.0807	0.0558	0.0267	0.1429*	0.0416
SCOPE	0.1005*	0.1956*	0.2392*	0.3547*	0.3259*	0.3491*	0.1025*	0.0622

	SUPERVISOR	TENURE	AGE	EDUCATION	gender	TEAM_SIZE	Team density	SCOPE
SUPERVISOR	1							
TENURE	-0.0098	1						
AGE	-0.1566*	-0.2993*	1					
EDUCATION	-0.0707	0.3231*	-0.1858*	1				
gender	-0.1514*	0.064	0.0387	0.0911*	1			
TEAM_SIZE	0.4098*	0.0568	-0.1653*	0.0701	-0.1485*	1		
Team density	0.2291*	-0.0006	0.0119	-0.0269	-0.0478	0.1886*	1	
SCOPE	0.1290*	-0.0663	-0.1101*	-0.1448*	-0.1614*	0.0926	-0.0758	1

Table 3: Hyp. 1a – 1b

	(1)	(2)	(3)	(4)
VARIABLES	Performance	Performance	Performance	Performance
OCBs	-0.0527 (0.227)	<b>-0.115**</b> <b>(0.0257)</b>	-0.0545 (0.367)	<b>-0.119*</b> <b>(0.0936)</b>
Rank	0.196*** (2.00e-06)	0.203*** (0.00405)	0.201*** (1.79e-06)	0.223*** (0.00199)
<b>c.OCBs#c.Rank</b>	<b>0.139***</b> <b>(6.92e-05)</b>	<b>0.168***</b> <b>(1.29e-05)</b>		
EXPERIENCE	-0.00743 (0.763)	-0.00668 (0.826)	-0.0181 (0.475)	-0.0273 (0.383)
SUPERVISOR	0.109 (0.134)	0.160 (0.122)	0.121 (0.101)	0.190* (0.0734)
TENURE	2.82e-06 (0.778)	5.04e-07 (0.964)	9.10e-07 (0.929)	-1.17e-06 (0.920)
AGE	0.0413 (0.383)	0.0972* (0.0955)	0.0445 (0.357)	0.0819 (0.173)
EDUCATION	0.0428** (0.0400)	0.0593** (0.0126)	0.0496** (0.0187)	0.0682*** (0.00493)
gender	0.00506 (0.934)	0.0682 (0.328)	0.00231 (0.970)	0.0596 (0.404)
TEAM_SIZE	0.00528 (0.557)	-0.0180 (0.157)	0.00270 (0.767)	-0.0231* (0.0742)
HRAREA		YES		YES
SCOPE		YES		YES
ORGANIZATION		YES		YES
ROLE		YES		YES
<b>c.OCBs#c.EXPERIENCE</b>			<b>0.0595**</b> <b>(0.0191)</b>	<b>0.0756***</b> <b>(0.00908)</b>
Constant	1.841*** (0)	3.244*** (3.20e-08)	1.842*** (0)	2.908*** (3.66e-05)
Observations	332	316	332	316
R-squared	0.186	0.309	0.159	0.275
pval in parentheses				
*** p<0.01, ** p<0.05, * p<0.1				

Graph 1



Graph 2

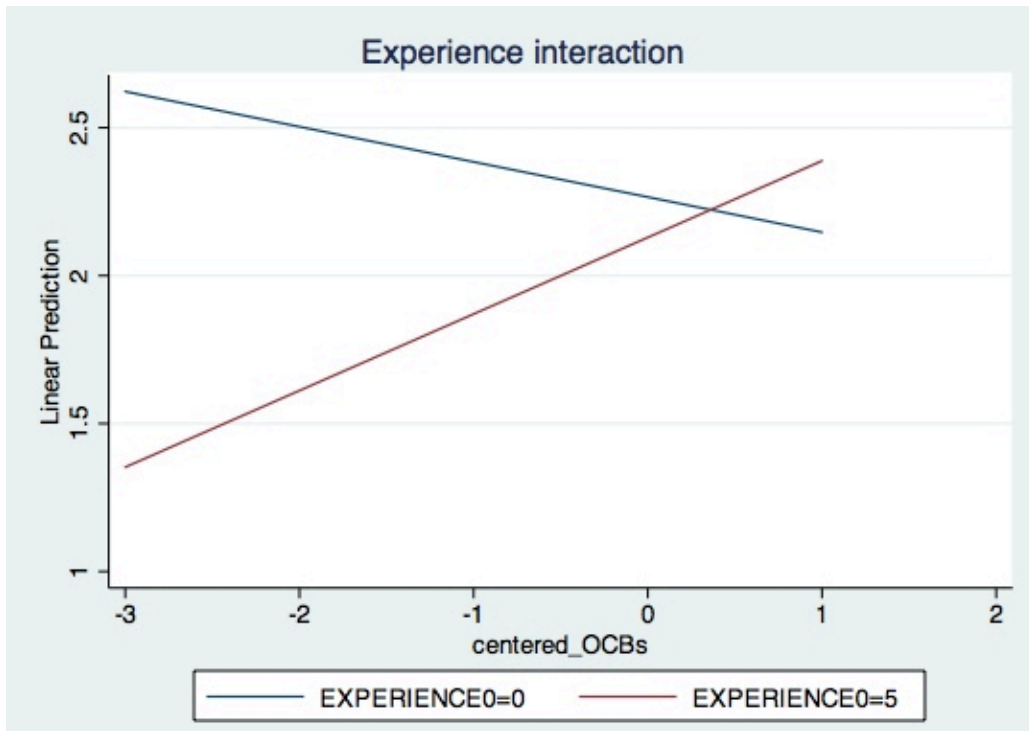


Table 4: Hyp. 1c

	(1)	(2)		
VARIABLES	Performance	Performance		
OCBs	0.00496 (0.896)	0.00886 (0.848)		
normADVICE_Between	0.135 (0.620)	0.182 (0.552)		
<b>c.OCBs#c.normADVICE_Between</b>	<b>0.734***</b> <b>(0.00240)</b>	<b>0.687***</b> <b>(0.00890)</b>		
normADVICE_Indeg	0.0166** (0.0282)	0.0176 (0.103)		
EXPERIENCE	-0.0104 (0.691)	-0.0220 (0.501)		
Rank	0.152*** (0.00106)	0.180** (0.0162)		
SUPERVISOR	0.0335 (0.670)	0.0933 (0.404)		
TENURE	-1.30e-06 (0.899)	3.56e-06 (0.762)		
AGE	0.0775 (0.122)	0.0834 (0.180)		
EDUCATION	0.0495** (0.0225)	0.0670*** (0.00735)		
gender	-0.00800 (0.901)	0.0758 (0.308)		
TEAM_SIZE	-0.00111 (0.905)	-0.0246* (0.0645)		
HRAREA		YES		
SCOPE		YES		
ORGANIZATION		YES		
ROLE		YES		
Constant	1.636*** (0)	1.685*** (5.73e-06)		
Observations	305	290		
R-squared	0.181	0.305		
pval in parentheses				
*** p<0.01, ** p<0.05, * p<0.1				

Table 5: Hyp. 2a – 2b

	(1)	(2)	(3)	(4)
VARIABLES	Performance	Performance	Performance	Performance
OCBs	0.0312 (0.363)	-0.00521 (0.897)	0.0203 (0.581)	-0.00344 (0.937)
TEAM_SIZE	-0.00893 (0.375)	-0.0311** (0.0277)	-0.00848 (0.405)	-0.0329** (0.0228)
c.OCBs#c.TEAM_SIZE	<b>0.0354***</b> <b>(6.78e-05)</b>	<b>0.0442***</b> <b>(2.69e-05)</b>		
Rank	0.241*** (4.71e-08)	0.251*** (0.000492)	0.218*** (7.42e-07)	0.236*** (0.00135)
TEAM_ADVICEdensity	7.855** (0.0422)	7.621 (0.157)	8.435** (0.0321)	7.597 (0.169)
EXPERIENCE	-0.0485 (0.152)	-0.0546 (0.202)	-0.0543 (0.114)	-0.0420 (0.337)
SUPERVISOR	0.133* (0.0736)	0.155 (0.147)	0.113 (0.136)	0.131 (0.234)
TENURE	2.50e-05 (0.199)	2.29e-05 (0.354)	2.71e-05 (0.170)	1.21e-05 (0.631)
AGE	0.0412 (0.409)	0.0864 (0.144)	0.0445 (0.379)	0.0865 (0.155)
EDUCATION	0.0500** (0.0178)	0.0681*** (0.00462)	0.0546** (0.0109)	0.0756*** (0.00214)
gender	0.00806 (0.897)	0.0889 (0.212)	-0.0201 (0.750)	0.0616 (0.397)
HRAREA		YES		YES
SCOPE		YES		YES
ORGANIZATION		YES		YES
ROLE		YES		YES
c.OCBs#c.TEAM_ADVICEdensity			<b>11.84***</b> <b>(0.00366)</b>	<b>13.36**</b> <b>(0.0166)</b>
Constant	2.892*** (2.93e-09)	3.399*** (4.57e-08)	1.688*** (0)	1.469*** (3.48e-05)
Observations	318	303	318	303
R-squared	0.201	0.340	0.182	0.307
pval in parentheses				
*** p<0.01, ** p<0.05, * p<0.1				

Table 6: Hyp. 3a – 3b

	(1)	(2)	(3)	(4)
VARIABLES	Performance	Performance	Performance	Performance
OCBs	-0.0600 (0.192)	<b>-0.105*</b> <b>(0.0540)</b>	-0.117* (0.0631)	<b>-0.209***</b> <b>(0.00508)</b>
normADVICE_Between_ofsup	0.145 (0.341)	-0.00149 (0.994)	0.264* (0.0752)	0.0941 (0.621)
c.OCBs#c.normADVICE_Between_ofsup	<b>0.535***</b> <b>(0.000214)</b>	<b>0.603***</b> <b>(0.000189)</b>		
normADVICE_Indeg_ofsup	0.123 (0.582)	0.0288 (0.930)	0.190 (0.399)	0.140 (0.664)
Rank	0.199*** (6.06e-06)	0.226*** (0.00163)	0.189*** (1.65e-05)	0.223*** (0.00183)
EXPERIENCE	-0.0177 (0.486)	-0.0101 (0.752)	-0.0175 (0.494)	-0.0143 (0.651)
SUPERVISOR	0.121* (0.0972)	0.125 (0.230)	0.134* (0.0679)	0.163 (0.119)
TENURE	2.70e-06 (0.788)	1.05e-06 (0.927)	2.57e-06 (0.799)	-1.39e-07 (0.990)
AGE	0.0310 (0.525)	0.0751 (0.216)	0.0376 (0.441)	0.0823 (0.173)
EDUCATION	0.0456** (0.0296)	0.0626*** (0.00867)	0.0544*** (0.00946)	0.0722*** (0.00235)
gender	-0.00900 (0.883)	0.0653 (0.354)	-0.00964 (0.876)	0.0687 (0.329)
TEAM_SIZE	-0.000593 (0.952)	-0.0162 (0.258)	-0.00647 (0.511)	-0.0221 (0.120)
HRAREA		YES		YES
SCOPE		YES		YES
ORGANIZATION		YES		YES
ROLE		YES		YES
c.OCBs#c.normADVICE_Indeg_ofsup			<b>0.648***</b> <b>(0.000984)</b>	<b>0.885***</b> <b>(0.000109)</b>
Constant	1.700*** (3.40e-08)	1.824*** (1.64e-05)	1.633*** (0)	1.535*** (7.69e-06)
Observations	325	310	325	310
R-squared	0.197	0.319	0.190	0.321
pval in parentheses				
*** p<0.01, ** p<0.05, * p<0.1				



**CHAPTER 3:**  
**Leader - Follower relationship quality in a global environment;**  
**Network attributes of leaders and employee outcomes**

Nikolaos Smyrlakis

Bocconi University, Milan – Italy

nikolaos.smyrlakis@phd.unibocconi.it

**Abstract**

*We incorporate data from our network survey on a global corporation within a ‘leader – follower’ relationship quality framework. We operationalize relationship quality with measures from informal organizational networks, as a proxy for leader follower exchange relationships. The already established relationship between ‘leader – follower’ relationship quality and Organizational Citizenship Behaviors is further analyzed. We examine the effects of leader sponsorship on follower OCBs. Consequently we develop two new leader network measures: “affectiveness” and “universality”, or the extent to which a leader is affective and popular among affective and informal organizational networks at the local or the organizational level and test interaction effects with ‘leader – follower’ relationship quality. Finally we also incorporate the leader’s informal brokerage as an attribute that interacts with the relationship quality with the focal leader on the follower’s citizenship behaviors.*

## Introduction

In this paper we apply network attributes of leaders interacting with the quality of the relationship with their followers, within a formal and informal intraorganizational structure. In our current framework team supervisors and their direct subordinates represent this relationship. We investigate the interaction effects on follower outcomes, namely organizational citizenship behaviors. The relationship quality refers to the dyadic level relationship between leader and follower, whereas the leader attributes and the follower outcomes are at each individual level respectively.

In a global organization of today reside various formal and informal organizational networks. This structure may hide “affective” leaders that lie in the backbone of formal intraorganizational networks and at the forefront of the affective network and act as pillars of trust, friendship and inspiration. Thus we introduce leader “affectiveness”; the extent to which a leader is central not only in the formal hierarchy but also to the affective, friendship organizational networks. We also introduce leader “universality”, or the extent to which a leader is central not only to the local organizational network of the direct reports, or her working team, but across teams and locations. Furthermore there is the well established attribute of brokerage, or the property of having bridging ties, or connected otherwise unconnected others. Informal brokerage of a leader brings about access to more resources and information within the organization. Association with those leaders may enhance the feeling of organizational membership and identification, reflected on the follower’s citizenship behavior.

There exists in the literature a more specific leader follower relationship framework, namely the leader – member exchange (LMX) theory. The leader-member exchange (LMX) theory of leadership has developed into a significant area of scientific inquiry and has received considerable empirical research attention in the organizational sciences. LMX over the past forty years has evolved to rely heavily on social exchange theory (Dulebohn et al., 2011). On this respect LMX is relationship-based, examining one-on-one dyadic reciprocal social exchanges between leader and follower (Graen & Uhl-Bien, 1995). A good quality relationship between a leader and a follower, like close friendships, is characterized by high trust, mutual influence, reciprocal liking and mutual disclosure relationship cognition (Thomas, Martin, Epitropaki, Guillaume, & Lee, 2013). However rather than assuming that leaders develop relationships of equal quality with individual members, the LMX theory suggests that leaders may form differentiated relationships with their followers (Boies & Howell, 2006; Henderson & Wayne, 2008; Liden & Graen, 1980; Sparrowe & Liden, 1997). That is leaders establish high quality relationships with a few followers and lower quality relationships with the rest. This so called LMX differentiation has been examined at various levels (e.g. individual, within group or group level) with various outcomes (Boies & Howell, 2006; Henderson et al., 2009; Henderson & Wayne, 2008; Liden, Erdogan, Wayne, & Sparrowe, 2006; van Breukelen, van der Leeden, Wesselius, & Hoes, 2012). LMX differentiation remains a critical issue in organizations because of its potential to affect multiple levels of an organization. We incorporate aspects of this theory and use a relationship quality framework, between leaders and followers. LMX focuses on rather specific characteristics of leaders, whereas we use a more general

model of relationship quality.

More specifically we focus on the dyadic relationship between leaders and followers and investigate further its effect on the followers citizenship behaviors. We look into network attributes of the leader and suggest that these characteristics change the way that the leader is influencing the followers. Firstly we examine not the dyadic relationship but the sponsorship, or the degree to which the leader and the follower have shared network ties and similar contacts. We propose that the participation in the same network of people, or the same ‘clique’, makes the follower feel an ‘insider’ sponsored by the leader, enhancing her sense of membership and citizenship. Then we analyze the quality of the dyadic relationship, by proxying it with different measures: multiplexity of ties, reciprocity of ties and a motivation dummy between the leader and the follower. Thus the more multiple ties a follower has with her leader (affective, formal, informal), the more the leader reciprocates those ties and the existence of a motivational tie from the leader to the follower, as reported by the follower’s side, then the higher the quality of the leader – follower relationship. Leader – follower relationship quality has an established effect on various follower outcomes, citizenship behaviors being one of them. We interact network attributes on the leader level to test this effect. We construct two new leader network attributes, leader “affectiveness” and leader “universality” and complement them with leader informal brokerage. We incorporate three types of intraorganizational networks: the formal workflow network, the informal advice network and the affective friendship network. Leader affectiveness depicts the extent to which a leader is popular in the affective friendship network relative to her formal workflow (or importance in the

workflow procedures) popularity. Leader universality divides the leader's informal advice popularity in two sets: within the working group of direct subordinates and outside. The more incoming advice ties originating from outside rather than within the group the more universal the leader. Finally leader informal brokerage reports the leader's bridging role, or connecting unconnected others, in the informal advice network.

## Theory

### Leader – member relationship quality and networks

The application of leader - follower relationships within a network framework is not something new in the literature. Leadership is essentially an influence process that can be described as a network phenomenon (Brass et al., 2004; Graen & Uhl-Bien, 1995; Sparrowe & Liden, 1997; Thomas et al., 2013). After all “leadership requires the management of social relationships” (Balkundi & Kilduff, 2006). According to this notion it is in the end the social structure that facilitates the exchange relationship between leaders and members. Sparrowe and Liden (1997) used a social network analysis frame to review the interplay between organizational structure and exchange relationships, reciprocity and sponsorship and leader and member outcomes. The same authors later (Sparrowe & Liden, 2005) also showed that leader - follower relationships are embedded in larger networks of informal relationships whose structure is important for understanding the differentiation process. More specifically they showed how members' influence and centrality is affected by the relationship with the leader and the sponsorship of the leader (the degree to which the member and the leader have structurally equivalent networks of intraorganizational ties). Venkataramani et al. (Venkataramani, Green, & Schleicher,

2010) also stressed that most studies on leader – member dyads are overlooking the fact that these dyads exist alongside other formal and informal organizational relationships in which leaders and members are embedded. They investigated how leaders' social network ties in the larger organization influence the quality of their relationship with their followers and the outcomes on their followers. Goodwin et al. also investigated the effects of both a leader's and a follower's informal social networks starting from a macro organizational level to the micro level of the leader - member dyad (Goodwin, Bowler, & Whittington, 2008). Sherony & Green (Sherony & Green, 2002) extended the leader - member framework towards a more general relationship framework looking into relationships between coworkers alongside relationships between leaders and members. Mehra et al. (Mehra et al., 2006) stress once more the importance of leaders being embedded in social structures of interpersonal relationships, or social networks, with subordinates, peers, and superiors. They looked into the leaders' social network relationships and their effects on their group's level outcomes and their own reputational advantages.

More specifically in the aforementioned studies an array of leader - member and network related constructs were used. We try to collect them and have a closer look at the constructs and hypotheses and sketch the frame where our own research is also based on. Starting from antecedents, leader and member organization wide advice centrality, or the degree to which leaders and members are popular in the advice giving intraorganizational community, as well as relationship frequency were shown to improve leader – member relationship quality (Goodwin et al., 2008). In the same study advice centrality within a

working group, moderated positively by the advice centrality outside the focal working group, also affected leader – member relationship quality. Leader advice centrality has also been shown to boost leader status and moderate positively the relationship between leader status and leader – member relationship quality (Venkataramani et al., 2010). Similarly to leader status, Mehra et al. (2006) showed that a leader's friendship centrality, or the degree of popularity in the affective network, increased a leader's reputation, as well as the group level performance. Finally transformational leadership has been shown to boost a member's advice centrality and influence (Bono & Anderson, 2005), as well as the OCBs of the member, mediated by the leader – member relationship quality. As far as network outcomes are concerned Sparrowe & Liden (2005) showed that leader – member relationship quality and member advice centrality is related to influence centrality and brokerage of the member enjoying that relationship. This relationship is moderated by sponsorship and the advice centrality of the leader, also noting that sponsorship can a blessing and a curse; being sponsored by a central leader is advantageous for the member, whereas being sponsored by an unconnected leader also impacts the member's influential capacity within the organization. These established results are depicted in figure 1 and outline the frame within which the current research setting is placed in:

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Insert Figure 1 about here  
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### Leader – member relationship quality and OCBs

Organ (Organ, 1988a) defined organizational citizenship behaviors as an “individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization”. These behaviors are also often described as extra- role behaviors e.g. cooperating with others, volunteering for additional tasks, orienting new employees, offering to help others accomplish their work, and voluntarily doing more than the job requires (Borman & Motowidlo, 1993; Smith, Organ, & Near, 1983). Having close interaction with the focal organization and by running a preliminary exploratory study we have narrowed down four relevant OCB dimensions that apply to the specific organizational setting and were considered by the firm as more easily observed and understood by the participants and are widely used in the literature, namely civic virtue, sportsmanship, helping behavior and conscientiousness (Koys, 2001; P M Podsakoff et al., 1997; Philip M Podsakoff et al., 2000; Podsakoff & MacKenzie, 1990; Smith, Organ, Near, et al., 1983; Yen & Niehoff, 2004).

Helping behavior includes actions that help another person with a work related issue; instructing a new hire on how to use equipment, helping a colleague catch up etc.



Sportsmanship implies a posture of tolerating the inevitable inconveniences and impositions of work without complaining or whining. Conscientiousness is a pattern of going well beyond minimally required levels of attendance, punctuality, housekeeping, conserving resources, and related matters of internal maintenance. Finally Civic Virtue brings about responsible, constructive involvement in the political process of the organization, attending meetings and sharing informed opinions and new ideas with others.

Leader – member relationship quality has been widely linked to the enhancement of the members' OCBs in the literature (Dulebohn et al., 2011; Gerstner & Day, 1997; Goodwin et al., 2008; Hackett & Lapierre, 2004; Ilies et al., 2007; Rockstuhl, Dulebohn, Ang, & Shore, 2012; Wang, Law, & Hackett, 2005). High-quality leader–member relationships are characterized by high levels of trust, interaction, support, and formal and informal rewards (Dienesch & Liden, 1986). Thus a way in which 'leader – follower' relationship quality contributes to organizational effectiveness is through the enhancement of employees' engagement in behaviors beyond their prescribed roles. Studies have shown empirically a positive association between leader – member relationship quality and Organizational Citizenship Behaviors (Dulebohn et al., 2011; Ilies et al., 2007; Wang et al., 2005). Subordinates in higher quality leader – member relationships “pay back” their leaders by engaging in citizenship (i.e., discretionary) behaviors that benefit the leader and others in the work setting based on social exchange and reciprocity mechanisms (Blau, 1964; Gouldner, 1960). These exchange models focus on the inducements or stimuli provided by the relationship. Employees attempt to reciprocate these possible

advantageous inducements provided by their employers by engaging in OCB (Coyle-Shapfro, 2002). Sparrowe & Liden (1997, 2005) have shown that being sponsored by a leader is advantageous for the member's influence and centrality, whereas being sponsored by an unconnected leader also impacts badly the member's influential capacity within the organization. Sponsorship implies membership in the 'in – group' of the leader and members developing reciprocity relationships are more likely to reciprocate this sponsorship in the leader's network, by means of generalized exchange and engaging in Organizational Citizenship Behaviors. Furthermore the member who has been incorporated into the leader's network of trusted peers gains an advantage over those members who remain outside of the inner circle and the members feel more attached and identified with the group and organization, again engaging in OCBs.

*H1: Being sponsored by a leader is associated with higher OCBs of the follower*

### **Leader characteristics**

Previous studies mentioned leader characteristics that play a role in the establishment of a high quality leader – member relationship and subsequently impacting its outcomes. Some of these were leader advice centrality, leader status, leader reputation, transformational leadership (Bono & Anderson, 2005; Goodwin et al., 2008; Mehra et al., 2006; Sparrowe & Liden, 1997, 2005; Venkataramani et al., 2010; Wang et al., 2005). Mehra et al. (2006) showed that a leader's friendship centrality matters for group performance. Organizations assign formal leaders whereas groups and working teams themselves also create

“informal” leaders within the group, or individuals who are more central in the informal interaction patterns of the organization (Freeman, Roeder, & Mulholland, 1979). In the same line of thinking, looking closer into organizations, along with the formal leaders of a group, thus the supervisors that lead their direct reports, there should exist more ‘affective’ leaders. Such individuals may be leaders in a formal, classic way, hence high in the hierarchy, but another characteristic of theirs is that their relationships and their influence also reside in the affective informal organizational networks. Thus where supervising or leading a group and having direct subordinates reporting through the formal hierarchy or the workflow characterize leaders, a more affective leader is popular also amongst the affective organizational networks of friendship. Lincoln & Miller (Lincoln & Miller, 1979) explain that high rank organizational members, by definition high in formal centrality as their high hierarchical position implies a lot of workflow contacts, are also more central in the affective and instrumental organizational networks. But to what extent is this same for all leaders?

A popular leader in informal networks could be a pillar of inspiration and information within an organization, through the informal intraorganizational channels. We hypothesize that the ‘affectiveness’ of a leader is reflected to their followers; when a leader is at the same time popular among affective organizational networks this popularity can be observed by the followers, inspiring them and boosting their own sense of citizenship, since they are associated with an important, socially rewarded, leader. Sparrowe and Liden (2005) showed that centrality of leaders in the advice network reflects their access to potential resources for exchange with members, affecting also the member’s access to

resources given a high quality leader – member relationship. Mehra et al. (2006) incorporated one more measure of centrality, the friendship centrality; “A leader with direct and indirect friendship ties to a specific group, is in a better position to create a favorable personal reputation for leadership among the members of that group than a leader with few such ties”. Intraorganizational social networks not only provide access to resources and information but also channel information about leaders to others in the organization (Burt, 1992; Mehra et al., 2006). A continuum can be implied where on one end one is the affective leader, a leader who is also very friendly within an organization, whereas on the other end is the formal leader that lacks recognition in the ‘social machinery’ of an organization and leads only ‘by the book’ in the hierarchy. The former, through mechanisms of social exchange, but also because she signals that she is more friendly and affective, should impact her followers OCBs, given a high quality dyadic relationship:

*H2: The leader’s “affectiveness” moderates positively the effect of leader – follower relationship quality on the follower’s OCBs*

Given the nature of a global modern corporation, there exist multiple groups and working teams nested in various departments that can be located in several physical locations.

Networks within groups are smaller and denser relative to the organization-wide network, and, thus, might be denser with fewer structural holes (Burt, 1992). Formal and informal network ties span across departments and even countries or continents in many cases, drawing a more complex picture of leadership and supervision.

Followers may be involved with more than one leader in several occasions, either on a formal or informal basis. Seeing an organization as such a network of formal and informal connections we incorporate the ‘*universality*’ of a leader. A leader is more universal when she is popular among informal networks not only in her direct subordinate group, but also across teams and locations. Thus a universal leader who is central in the informal networks across the organization, is valued as a network tie, from many followers outside his direct working group, even not hierarchically or associated with the focal leader in the division of labor. We define as a universal leader one that her incoming informal network ties do not only originate from the group of his direct reports, her team, but also outside her own team. That could be the case e.g. of a subordinate getting advice from a different manager than her own. As explained before, networks emit information on leaders, and a leader who is informally socially rewarded across the organization increases his social capital, and thus her instrumental value to others (leaders or followers in our case), is also likely to increase (Goodwin et al., 2008; Lin, 2001). Therefore we expect the followers to respond to high quality relationship with such a leader by becoming even better organizational citizens:

*H3: The leader’s “universality” moderates positively the effect of leader – follower relationship quality on the follower’s OCBs*

However a universal leader as defined before, is only universal in terms of location, meaning ties originating from within or outside own working groups. This definition does

not entail the nature of the ties, or if they actually bridge unconnected others or span structural holes, in order to create an advantage in information or resources. We know that OCBs play a role in the reciprocal social exchange process between leaders and members, hypothesized by Graen & Scandura, Settoon et al. and Wayne et al. (Graen & Scandura, 1987; Settoon, Bennett, & Liden, 1996; Wayne, Shore, & Liden, 1997).

A leader central in an informal network within a workgroup would not bridge many structural holes because of the group's density, compared to the organization as a whole (Goodwin et al., 2008). Conversely, a leader or follower central in the organization-wide advice network would bridge more structural holes. The latter leader would have access to more resources and information across the network.

Leaders have more to gain from informal relationships with organizational members who also are central outside the workgroup than from members only within the workgroup. Similarly, followers stand to gain more from relationships with leaders who are influential across the organization (Goodwin et al., 2008). Team leaders, formally the head of the team, are required to regularly interact with team members from diverse functional and task backgrounds, as well as to occupy "linking-pin" positions connecting their team members with other members of the organization (Oh et al., 2006). Leaders who occupy liaising positions (i.e., betweenness centrality) in organizational networks are provided with novel information about potential opportunities for creative development (e.g., Burt, 2004) and exposure to pockets of local expertise. The leaders' own teams can then tap into this advantageous access to information and resources. Such knowledge may in turn ensure that subordinates do not duplicate efforts, or "reinvent the wheel," but rather

concentrate their energies on the development of ideas that are topical and necessary (Oh et al., 2006) and therefore reciprocate to their leaders by engaging in higher citizenship behaviors. (checkback) Thus leader characteristics are important in inspiring members to become better citizens and therefore we expect members enjoying high quality relationships with leaders who are brokers of information and resources in the organization, to be more motivated and engaging more in OCBs:

*H4: The leader's informal brokerage moderates positively the effect of leader – follower relationship quality on the follower's OCBs*

The summary of hypotheses is depicted in figure 2

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Insert Figure 2 about here  
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## Methods

### Sample

The data was acquired via questionnaires submitted to employees of company 'Luxottica' in October 2013. Luxottica is the world's largest eyewear company with operations all around the world, counting more than 60.000 employees. The employees that took part were the total number of 466 members of the HR department, with a response rate of 82,9% (381 respondents). The respondents were based in more than 26 locations across all five continents in more than 70 working teams. The sample consisted of 88 supervisors rating the OCBs of 341 subordinates (some supervisors were also rated themselves). Supervisors reported their direct reports' citizenship behaviors whereas everyone reported other members of the organization they consider as network ties. Everyone could choose from 0 to an unlimited number of friendship, workflow and advice ties. See also APPENDIX I for a description of the sample and the questionnaire items.

### Measures

We applied three well-established organizational networks, namely friendship, advice and workflow networks, as described above, coupled with the motivation network as an additional proxy for leader – member exchange relationship quality. The latter was observed in the workplace and that the top management desired to map and monitor. We operationalized those networks as well according to feedback from supervisors and employees. In summary the motivation network covers those ties that provide with inspiration and positive energy in work related issues.



For identifying the network ties we use combined items from Mehra et al. (2001) and Klein et al. (2004), as well as a new definition of motivation network that was developed according to organizational and employee feedback. First respondents were asked to look down an alphabetical list of fellow employees and write the names of those individuals that "especially good friends." Friends were defined as "people with whom you like to spend your free time, people you have been with most often for informal social activities, such as visiting each other's homes, attending concerts or other public performances." For the advice network the question is defined as "people to whom you turn to seek advice on work-related issues" (Baldwin et al. 1997; Klein et al. 2004). The workflow network is modeled after Brass (1981: 332) (Mehra et al. 2001) where workflow is described as materials and/or information that you need in order to do your job with different ties as inputs and outputs respectively. Finally motivational ties were described as people with whom you have interactions that inspire you, make you feel more positive, focused and interested in work related issues. In all questions it was specifically mentioned that these individuals could be based geographically away, thus the network interactions can be also made through emails, social networks (facebook, twitter etc) and similar means.

*We proxy leader - follower relationship quality using reciprocity, multiplexity and motivation* measures among the various networks. In the literature leader – member relationships are usually measured with a questionnaire scale (e.g. LMX7) (Boies & Howell, 2006; Goodwin et al., 2008; Sherony & Green, 2002). Here instead we will construct a network (community) derived measure, as various elements that compose a

good relationship quality according to these scales are already present in our variables.

When a leader or employee provides benefits to the other party engaging in a high quality exchange relationship, reciprocity should come into play (Gouldner, 1960; Wayne et al., 1997). With reciprocity, thus reciprocal ties, it is implied that if a leader and a follower share a reciprocal tie in the e.g. advice network it means that a follower may take advice from a leader whereas the leader also takes advice from the focal subordinate.

Multiplexity measures the amount of overlap between the different formal and informal networks, and therefore the strength of the relational attachment of the follower to the leader. More specifically a given individual may share friendship, motivation and workflow ties with another individual instead of being just a work colleague, thus having a more multiplex connections between them. Motivation implies that her leader motivates the follower: the direct supervisor is an outgoing motivation tie of the follower.

Motivation is a common component in transformational leadership and directly implies an effect of the leader to the follower (Dulebohn et al., 2011; Rockstuhl et al., 2012; Vidhyarthi & Liden, 2010). By running a factor analysis, we confirm that the relationship quality proxies compose a single factor with a Cronbach Alpha of 0.5836, and we construct a single measure by applying the weights from the analysis. For additional controls we perform the hypotheses tests for all three items separately as well (reciprocity, motivation dummy and multiplexity).

We operationalize leader “*affectiveness*” as the extent to which a leader is central to affective networks versus formal networks. Thus a more affective leader is relatively more popular and central to the affective organizational networks than in the formal ones, given

a certain formal centrality and hierarchical level. In other words “affectiveness” can be described with the phrase “more friends relative to workflow ties”. To calculate affectiveness we use the ratio of the friendship incoming ties of a given supervisor divided by the total workflow and friendship incoming ties. Thus the more “affective” a leader the more friends she has relative to workflow contacts within the organization.

Leader “*universality*” is calculated by the extent to which a given leader is reported as a tie in informal networks outside her own direct reports, or workgroup. We define as working groups the subordinates that have the same supervisor, according to the formal hierarchy. We construct universality as the sum of all incoming ties outside one’s team minus all incoming ties within one’s team and divide it by the total sum of incoming ties. Thus the higher the universality the more the ties coming outside the team rather than within, describing the extent to which a supervisor is chosen as a tie in the informal organizational network not only within but also outside the working team. We apply the universality measure in the informal advice network.

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 Insert Graph 1 about here  
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*Sponsorship* reflects the extent to which the member shares her leader's circle of trusted contacts (Sparrowe and Liden 2005). Therefore in a given leader - follower relationship, sponsorship is measured by indicating the number of shared ties in the informal advice

network between a leader and a follower by using the structural equivalence routine in UCINET (Borgatti, Everett, & Freeman, 2002).

*Brokerage* is measured with betweenness centrality as a measure of the extent to which each individual occupies a central position bridging unconnected alters (Borgatti, 2005; Freeman, 1979) is used. This way the centrality of an individual is judged by how many times his colleagues chose him as a tie, and not by how many ties are reported by herself/himself. Brokerage was calculated with UCINET routine on betweenness centrality, with the network data on the informal advice network.

The relevant *Organizational Citizenship Behaviors* (OCB) dimensions applied are *helping, sportsmanship, civic virtue* and *conscientiousness*. These are measured with well established questionnaire items (Koys, 2001; P M Podsakoff et al., 1997; Podsakoff et al., 1990; Philip M Podsakoff et al., 2000; Smith, Organ, Near, et al., 1983; Yen & Niehoff, 2004). The supervisors evaluated the OCBs of their direct subordinates, thus OCBs were not self-reported. In total 88 supervisors evaluated 341 subordinates, and most supervisors were also rated on their OCBs by other supervisors.

The questionnaire items that the supervisors reported on their direct subordinates were the following:

Helping: “*Willingly gives of her/his time to help colleagues who have work-related problems.*”

Sportsmanship: “*Consumes a lot of time complaining about trivial matters.*”

Civic Virtue: “*Attends and actively participates in meetings.*”

Conscientiousness: “*Attendance at work is above the norm.*”

A confirmatory factor analysis showed that the four measures compose a single factor with a Cronbach Alpha of 0.6903. The respondents treated the different Organizational Citizenship Behavior items as capturing a single dimension of the subordinates’ behavior. Therefore in the analysis we treat the OCBs as a one-dimensional item.

*Controls:* The controls used are age, tenure within the company, team size, HR area, previous work experience, Rank, education, country, organization, HR area and team size. The sample is scattered in 7 regions among 26 countries. The HR area describes the more specific HR disciplines within the HR department (e.g. Compensation, HR management, Payroll administration etc) and organization refers to the different departments of the company that each respective HR discipline belongs to. Finally scope refers to the HR area and can be global, local (organization level) or regional (region level).

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 Insert Table 1 about here  
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## Analysis

For hypotheses 1-4 we run OLS regressions on OCBs using the leader – follower relationship quality proxy. We run 2 models for each hypothesis, including different sets of controls. A nested approach was not necessary as the relationship and the sponsorship constructs are at the dyadic level, and already refer the specific leader – follower dyad. The network variables (in-degree centrality, brokerage, sponsorship) were calculated with the UCINET platform (Borgatti et al., 2002), where the tie data was fed as a table for each network with tie dummies representing all ties reported by each individual as network contacts. The relationship quality proxy, universality, affectiveness and informal brokerage were centered in order to capture also the main effect of the interaction terms.

## Results

Hypothesis 1 is strongly confirmed with significant predictors for all models. Therefore it is confirmed that being sponsored by a supervisor makes the subordinate engage in more OCBs. The existing theory is also strongly confirmed since the leader follower relationship quality is always a significant predictor for OCBs, as shown many times before.

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Insert Table 3 about here  
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Hypothesis 2 is also confirmed as seen on Table 4. The interaction term of leader – follower relationship quality with leader affectiveness is significant and positive. Thus having a good leader – follower relationship quality with an “affective” leader further boosts a follower’s OCBs as theorized.

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Insert Table 4 about here  
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However hypothesis 3 is strongly contradicting our theory, as seen in the same table. The interaction term is significant but negative, implying that a follower’s OCBs are enhanced not by a universal leader, one that is popular across the organization, but on the other hand her OCBs decline if related with such a leader. This is a very important finding, as it could imply that in the given organization followers value a leader that is close to them and not neglecting her working group, raising a new discussion.

Finally hypothesis 4 is also supported. In light of hypothesis 3 not being supported, this casts an even more important message. Universality of a leader is a negative moderator for follower OCBs, however leader brokerage is a positive moderator. This could be very important, as it is a strong argument towards ties that matter and ties that are irrelevant if not negative for the followers’ perceptions.

## Robustness checks

To confirm the results we perform a series of additional tests. In terms of model specification we have performed additional analysis models with clustering around the locational dummies (organization, country, team). For all different specifications our results stand.

To check the robustness of the relationship quality proxy operationalization we have also run the same models with the three variables that construct the single factor construct of relationship quality, one by one. Therefore we reran the analysis using the motivation tie dummy, the reciprocity score and the multiplexity score with the supervisor, instead of the relationship quality factor. The results were the same for all single items, predicting the same pattern of results, however with the combined three-way item the explained variance was higher.

In order to corroborate our theory on affectiveness, and its relationship with a leader's friendship centrality and workflow centrality, we run the same set of hypotheses concerning the affectiveness by using only the friendship in degree centrality of the leader and not the affectiveness. The result is similar, friendship in degree centrality of a leader is moderating the effect of leader – follower relationship on the follower's OCBs, however the coefficient is less significant (at the  $p < 0.1$  level) and significantly different. Therefore affectiveness is actually showing something different than leader's friendship in – degree centrality. Friendship in degree is also important, however the affectiveness of a leader relative to her formal workflow centrality is illustrating in a more explicative way the



‘friendliness’ of a focal leader compared to her importance or centrality in the formal organizational workflow procedures.

One of the most interesting results is the negative moderation effect of leader universality. This can probably be attributed to the fact that such leaders are neglecting their own team and that followers of such leaders are not motivated or don’t feel identified with them. Our universality measure captures this kind of leader ‘extraversion’ and in order to confirm this we ran the same hypothesis by using the leader’s total advice in degree centrality as a moderator, and not the outside minus within team advice ties. The total advice in degree centrality is not a significant moderator and has no impact in the effect of leader follower relationship quality on follower OCBs. Therefore universality captures a different dimension of in degree centrality: the relative extraversion of the incoming ties of a leader and how this is reflected upon the team members and their respective citizenship behaviors. In support of the universality variable we also used just the ratio of ties originating outside the team to ties originating from within the team, as a similar but simpler operationalization as a robustness check. The results hold again, hence the negative interaction effect, clarifying that regardless of the exact operationalization or definition of universality, the effect remains significantly negative, confirming our notion of establishing leaders’ universality attribute.

Another fact in support of the different dimension of centrality that universality is capturing is the subsequent hypothesis on a leader’s advice brokerage, which has a positive interaction effect. This could be attributed to the fact that as long as a leader is

forming relationships with unconnected alters, even when they are outside of the team, this poses an informational advantage for the team and an increased leader status.

However less meaningful ties outside the team perhaps create a different in – group, which doesn't coincide with the formal working group, leaving the team members dissatisfied or disappointed.

## Conclusion

With this study we combine a leader follower relationship quality framework with an organizational networks toolbox. This way the complexity of the various relationships that reside within the networks is leveraged to reveal leadership effects. By distinguishing between formal and affective organizational networks and the respective centrality, the concept of “affective” leadership is unraveled. Furthermore we extend it to see the reach of a leader's influence or their “universality” and their informal brokerage. We confirm the well-established effect of leader – follower relationship quality on follower's OCBs and establish as well the effect of the sponsorship of a leader on the follower's OCBs. We unravel the positive interaction on the follower's OCBs of having a high leader – follower relationship quality with an “affective” leader. Furthermore, surprisingly we discovered the opposite for “universality”: OCBs are enhanced with relationships with ‘non-universal’ leaders, revealing a localized leader influence, or that followers are more engaged with leaders socially active close to the team and not across all the organization.

This result becomes even more captivating when in the next hypothesis the advice brokerage of a leader is a positive moderator for the same relationship. As explained before we also ran a robustness analysis with the in degree centrality measure of the leader. Thus in the end we have available three different interaction tests concerning the informal advice network: universality (outside – within team incoming advice ties), advice brokerage (betweenness centrality) and advice in – degree centrality (robustness check). The interaction effects are all different for the three moderators. Universality is a negative moderator, advice brokerage is a positive moderator and advice in – degree is insignificant. This reveals the different dimensions of leader centrality. More specifically a “universal” leader is not only focused on her direct team, as most incoming ties are outside the team, but on a more extensive network. This has a negative effect on the citizenship of the followers, as they might feel neglected and unidentified with their leader, thus not engaging in positive citizenship behaviors. Inside the team, leaders assume the role of an “integrator” (e.g., Oh et al., 2006), integrating the many concerns, issues, resources, and contributions of team members as they strive toward achieving the team’s goals. As leaders are forgetting the role as integrators by spanning more outside ties than within, it seems that they become a kind of “disintegrators” as the citizenship of their followers, direct subordinates, is hammered.

However when the ties of the leader are bridging, thus when the leader is an advice broker within the organization, followers can gain more from relationships with those leaders who are more influential in the organization (Goodwin et al., 2008) and return this by becoming more motivated and better citizens. Thus incoming ties are not only a number:

the origin matters and more specifically if they are outside or within one's team, as well the novelty of the tie content, to the extent that it would be inaccessible otherwise and available through the bridging ties from the leader. Bridging ties also create a reputational advantage of the leader (Venkataramani et al., 2010; Venkataramani, 2014) reinforcing this effect. Total advice in – degree centrality is a control for these two differential positive and negative interactions effects (universality and brokerage) and is insignificant.

Thus we reveal a new dimension of leaders' intraorganizational networks and their influence. In terms of the nature of ties, a leader can be more affective or less affective relative to her workflow centrality, with a positive interaction effect on the follower OCBs. In terms of the informal advice tie importance there is a differential effect: if these ties are just outside the team but not necessarily bridging, increasing a leader's universality, they have a negative interaction -a 'disintegrating'- effect on the followers' OCBs, whereas if these ties are bridging, creating a broker – leader, they have a positive interaction effect on the follower's OCBs.

Another finding is the effect of follower sponsorship with the leader on the OCBs of the follower. In other words if the follower and the leader share common network ties, or are members of the same clique, the follower becomes a better citizen, as explained before. There is already a widely established effect of leader – follower relationship quality on the OCBs of the follower. However this is a dyadic level relational effect and refers to an actual exchange taking place between leader and follower whereas within the sponsorship framework there doesn't need to be an exchange involved, but the mere fact that leaders

and followers have structurally equivalent informal networks is enough to boost the citizenship of the follower.

The two novel interaction terms, affectiveness and universality create new space and directions for future research. The ‘affectiveness’ of a leader is first put into a leadership frame. A leader should not only be active in the hierarchy and the workflow processes; a leader that has friends within an organization matters to the followers. On the other hand followers don’t feel motivated by leaders that are very ‘universal’. Having close relationships with leaders that are popular across the organization reduces the OCBs of the followers. Perhaps followers feel confused, frustrated or less valuable and thus their citizenship is reduced, or not observed by the ‘universal’ leader.

A potential limitation could be that it is not the actual followers that have different OCBs, but it is the different characteristics of the leaders that make them rate their followers differently. To the extent that leader universality, affectiveness and brokerage are variables not acquired by the leader but objective measures acquired by the community, via questionnaires on ties given to all respondents, and are not self selected attributes of the leaders making the ratings of followers’ OCBs, thus not subject to common method variance or any other bias.

Another point of criticism could be that close interaction by means of reciprocity and multiplexity naturally makes leaders rate their followers’ OCBs subjectively because they are close to them. However leaders are unaware which followers have chosen them as

motivational alters, or as having multiplex ties with them. Furthermore by running the same models with the motivation dummy as a robustness check (that a follower drives inspiration from his leader), all the results still stand. Thus a leader can't rate what she doesn't know, she just rates the OCBs of the follower and hasn't evaluated the mutual relationship in some way and is not aware of the exact way that she has been chosen as a network tie by the followers.

Affective leaders can be ambassadors of organizational inspiration and well – being, and far more important than leaders that stick just to formal workflow relations. Furthermore such community derived constructs offer a new basis for evaluation through intraorganizational networks. Finally we offer a viewpoint across organizational levels of analysis; from individual measures such as OCBs, to a dyadic relationship level with leader – follower relationship quality and sponsorship and finally at the group and organizational level observations of formal/informal leadership and universality. The current research yields promising results from the data, offering an interesting starting point towards a more social and multilevel analysis of leadership and leader – follower relationship quality. Future research could incorporate more measures and antecedents as well as potential outcomes at the organizational or team level, and not only at the individual level. Other potential outcomes could be performance, innovation, productivity and others at different levels.

List of Tables III

Figure 1: LMX relationships and network attributes from previous literature

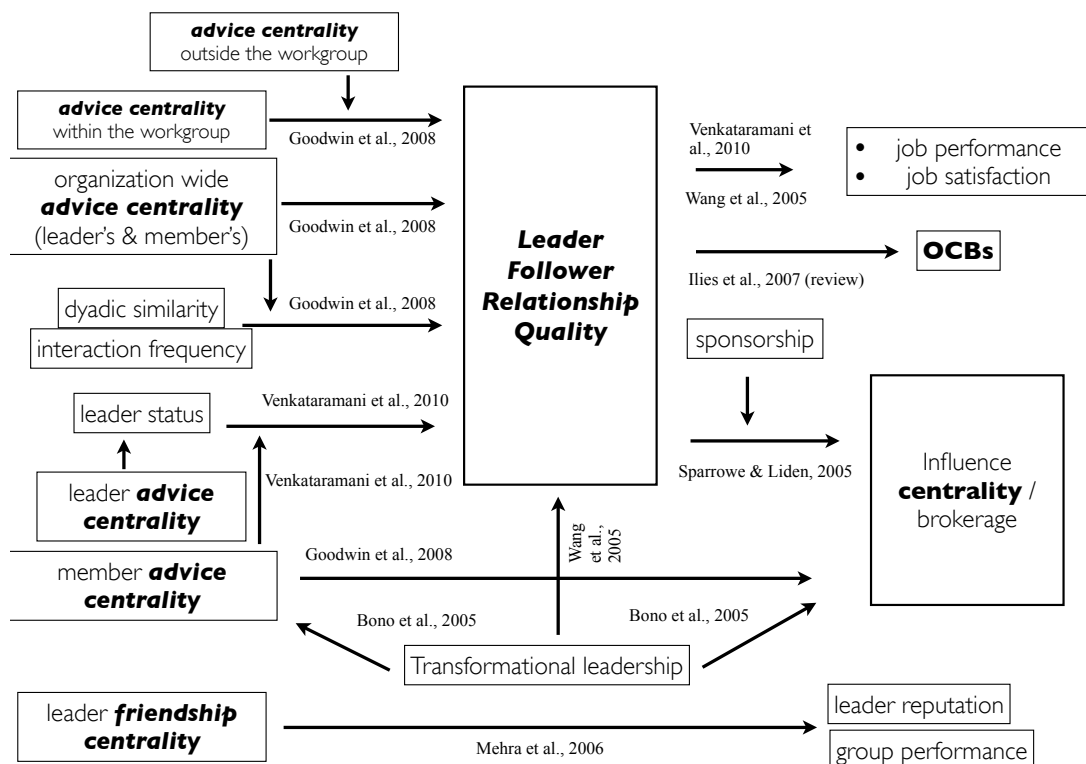
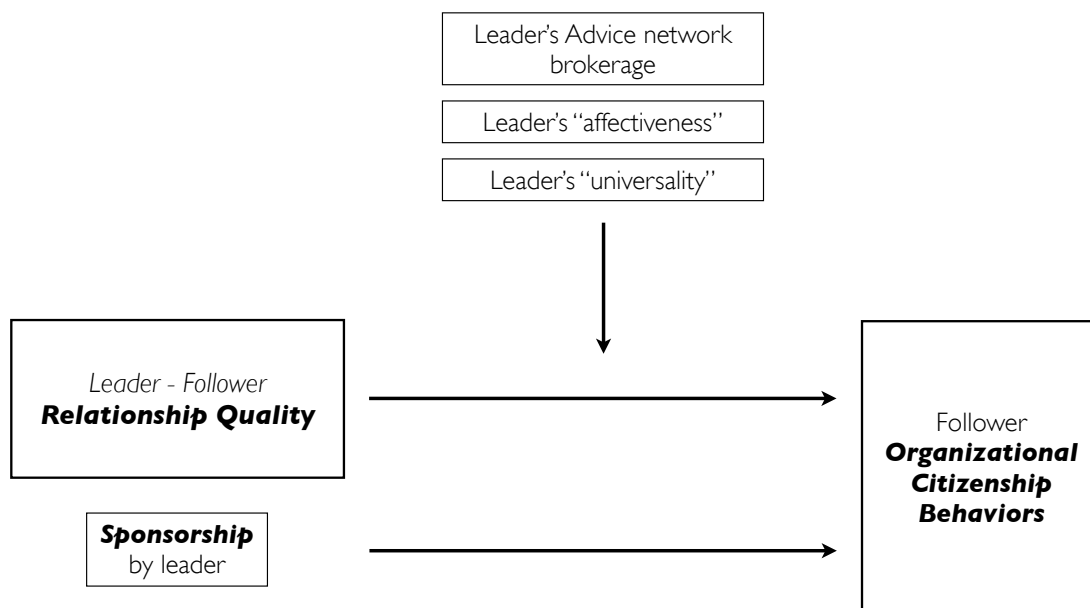


Figure 2: Summary of hypotheses



**Table 1: Descriptive statistics**

Variable	Obs	Mean	S.D.	Min	Max
OCBs	341	3.87E-10	0.8059554	-3.803576	0.9418817
Relationship Quality	466	2.53E-09	0.9010669	-0.9500257	1.766922
ADVICE Between of sup	436	0.3355517	1.132384	-0.5933449	3.692601
affectiveness	434	0.1287155	0.124797	0	1
universality	416	-1.17E-08	0.9531155	-2.501104	1.113371
Friendship In degree of sup	440	2.659091	2.15084	0	9
EDUCATION	357	2.507003	1.622552	1	5
TENURE	458	2272.214	3649.717	22	41548
EXPERIENCE	459	2.847495	1.388761	1	6
TEAM_SIZE	443	6.386005	3.527844	1	15
sponsorship by leader	428	0.1031129	0.1504355	0	1
Rank	459	1.638344	0.7790448	1	4
gender	466	0.7467811	0.4353226	0	1
AGE	358	2.351955	0.7478328	1	3



**Table 2: Correlation Table**

	OCBs	Relationship Quality	ADVICE Between of sup	affectiveness	universality	Friendship In degree of sup	EDUCATION
OCBs	1						
Relationship Quality	0.2269*	1					
ADVICE Between of sup	0.0455	0.1919*	1				
affectiveness	0.0492	0.0132	0.0564	1			
universality	0.034	-0.0365	0.0937	0.1586*	1		
Friendship In degree of sup	0.1375*	0.2908*	0.3804*	0.5137*	0.1502*	1	
EDUCATION	-0.108	-0.0373	-0.0337	-0.092	-0.0476	-0.048	1
TENURE	-0.0389	-0.0062	-0.0006	-0.059	0.009	0.024	0.3376*
EXPERIENCE	-0.0587	0.0513	0.2189*	-0.0336	0.0461	0.093	0.2395*
TEAM_SIZE	-0.0563	0.1127*	0.3913*	-0.1495*	-0.3182*	0.2717*	0.077
sponsorship with sup	0.2590*	0.1422*	0.0132	-0.0475	-0.0976*	0.0114	-0.0376
Rank	-0.1063	0.1756*	0.2960*	-0.0883	-0.0057	0.1263*	-0.0409
gender	-0.0589	-0.1257*	-0.0608	-0.0195	0.0917	-0.0535	0.1017
AGE	-0.012	0.0732	-0.1089*	0.0321	0.0605	-0.1228*	-0.1860*

	TENURE	EXPERIENCE	TEAM_SIZE	sponsorship with sup	Rank	gender	AGE
TENURE	1						
EXPERIENCE	0.4677*	1					
TEAM_SIZE	0.0568	0.1523*	1				
sponsorship with sup	0.0585	0.1210*	0.0293	1			
Rank	-0.0191	0.1761*	0.4470*	0.1397*	1		
gender	0.064	-0.0138	-0.1485*	-0.0093	-0.1350*	1	
AGE	-0.3126*	-0.5166*	-0.1816*	-0.1077*	0.0187	0.0433	1

**Graph 1: Universality and affectiveness of supervisors**

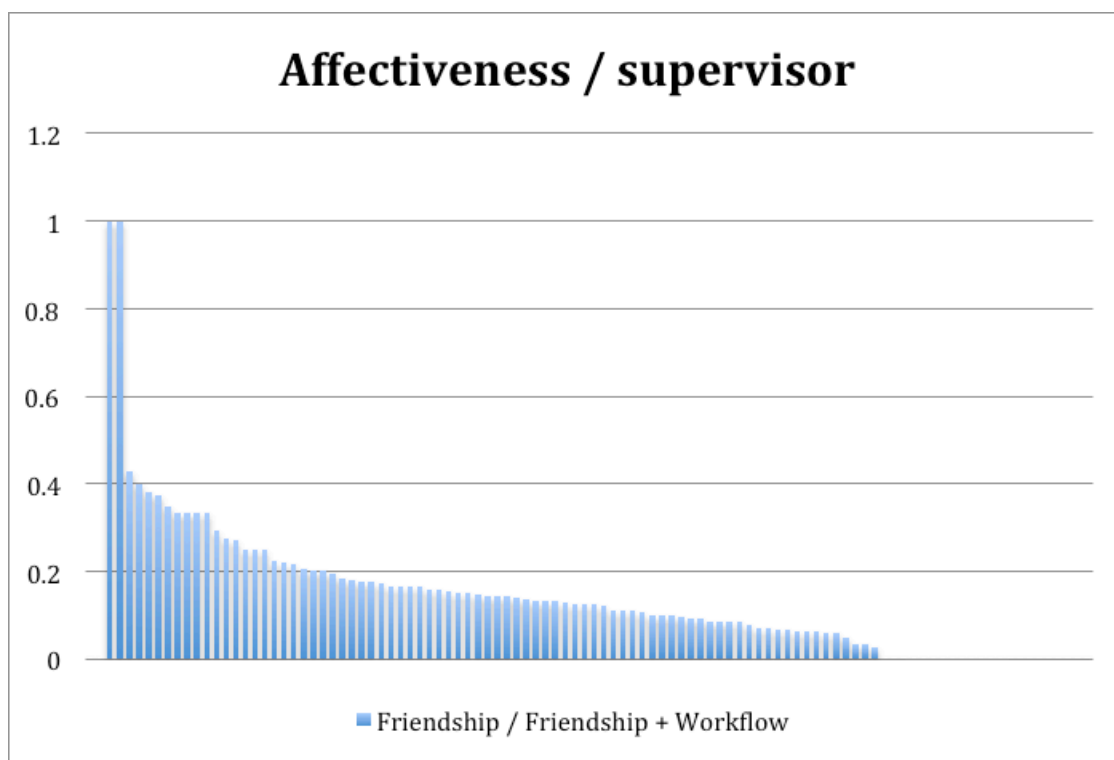
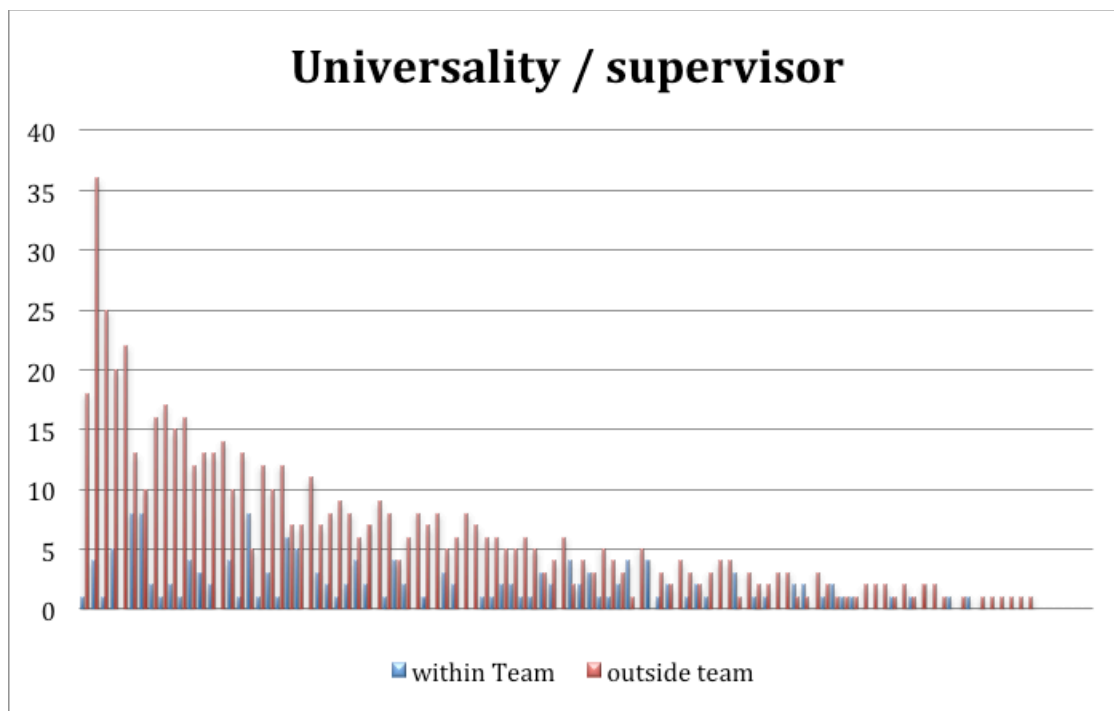


Table 3: Hyp. 1

	TABLE 3	
	(1)	(2)
VARIABLES	OCBs	OCBs
LMX_proxy	0.241***	0.239***
	(1.79e-05)	(0.000132)
Sponsorship	<b>1.400***</b>	<b>1.546***</b>
	<b>(4.83e-05)</b>	<b>(9.43e-05)</b>
EDUCATION	-0.0462	-0.0327
	(0.151)	(0.349)
TENURE	-5.72e-06	1.02e-05
	(0.714)	(0.645)
EXPERIENCE	-0.0377	-0.0409
	(0.362)	(0.447)
TEAM_SIZE	-0.00900	0.00119
	(0.533)	(0.950)
Rank	-0.128*	0.0853
	(0.0536)	(0.397)
gender	-0.160	-0.0942
	(0.121)	(0.406)
AGE	-0.0560	0.124
	(0.465)	(0.196)
COUNTRY		YES
ORGANIZATION		YES
HRAREA		YES

ROLE		YES
Constant	0.550*	-0.879
	(0.0554)	(0.114)
Observations	266	256
R-squared	0.176	0.456
pval in parentheses		
*** p<0.01, ** p<0.05, * p<0.1		

Table 4: Hyp. 2 - 4

	TABLE 4					
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	OCBs	OCBs	OCBs	OCBs	OCBs	OCBs
Relationship Quality	0.229***	0.235***	0.244***	0.271***	0.189* **	0.201***
	(9.41e-05)	(0.00023 2)	(2.72e-05)	(2.14e- 05)	(0.004 51)	(0.00548)
affectiveness	-0.151	-1.058	0.327	-0.759	0.250	-0.709
	(0.799)	(0.182)	(0.540)	(0.323)	(0.649)	(0.360)
Relationship Quality * affectiveness	<b>1.150*</b>	<b>1.313**</b>				
	(0.0608)	(0.0376)				
universality	0.229	-0.193	0.491*	0.0315	0.210	-0.154
	(0.349)	(0.543)	(0.0619)	(0.923)	(0.400)	(0.637)
EDUCATION	-0.0425	-0.0279	-0.0505	-0.0328	0.0434	-0.0332
	(0.189)	(0.423)	(0.118)	(0.345)	(0.182)	(0.344)
TENURE	-3.32e-06	1.05e-05	-2.91e-06	7.03e-06	-4.64e- 06	3.62e-06
	(0.833)	(0.643)	(0.852)	(0.753)	(0.769)	(0.874)
EXPERIENCE	-0.0500	-0.0434	-0.0426	-0.0435	0.0466	-0.0247
	(0.231)	(0.425)	(0.301)	(0.421)	(0.272)	(0.654)
TEAM_SIZE	-0.00249	-0.00477	-0.00145	-0.00354	0.0061	-0.00206
					-	

					5	
	(0.872)	(0.816)	(0.924)	(0.863)	(0.705)	(0.922)
Sponsorship	1.464***	1.489***	1.490***	1.479***	1.459* **	1.461***
	(3.08e-05)	(0.00020 8)	(1.95e-05)	(0.00021 7)	(3.54e- 05)	(0.00029 1)
Rank	-0.124*	0.0933	-0.146**	0.115	- 0.114*	0.130
	(0.0656)	(0.355)	(0.0291)	(0.256)	(0.096 5)	(0.209)
gender	-0.173*	-0.0729	-0.165	-0.0591	-0.161	-0.0825
	(0.0950)	(0.525)	(0.107)	(0.606)	(0.121)	(0.475)
AGE	-0.0728	0.117	-0.0551	0.129	- 0.0662	0.129
	(0.347)	(0.219)	(0.473)	(0.174)	(0.395)	(0.179)
COUNTRY		YES		YES		YES
ORGANIZATION		YES		YES		YES
HRAREA		YES		YES		YES
ROLE		YES		YES		YES
Relationship Quality * universality			<b>-0.717***</b>	<b>-0.715**</b>		
			<b>(0.00748)</b>	<b>(0.0154)</b>		
Brokerage of sup					- 0.0219	-0.0896
					(0.664)	(0.119)

Relationship Quality *						
Brokerage of sup					<b>0.0683</b>	<b>0.0771*</b>
					<b>(0.124)</b>	<b>(0.0854)</b>
Constant	0.541*	-0.783	0.530*	-1.009*	0.544*	-0.969*
	(0.0600)	(0.162)	(0.0636)	(0.0700)	(0.061 1)	(0.0870)
Observations	264	254	264	254	264	254
R-squared	0.193	0.474	0.204	0.478	0.190	0.472
pval in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

## General Discussion

The three essays compose a broad understanding of intraorganizational networks and individual behaviors within an organization. We have tapped into the formal and informal backbone of a global corporation and came up with various novel concepts. First citizenship behaviors have been established as a behavioral antecedent of networking behavior. In the first chapter citizenship behaviors predict formal and informal network centrality. We provide robust evidence of the direction of this relationship, grounding firmly that these behaviors are not a networking outcome, but have an actual active role in the networking procedures within an organization. This is an important contribution on the individual networking behaviors and to how actors obtain certain positions within networks.

Moving on, we have showed that beyond affecting network centrality, citizenship is influential in the formation of intraorganizational ties. Good citizens receive more ties but are more likely to create ties at the same time, revealing a sort of individual agency in tie formation. Additionally good citizens create reciprocal informal and affective relationships with other good citizens. Perhaps this finding paves the way to view networking behavior within an organization as a way of engaging in citizenship behavior. The fact that good citizens receive and form ties could be viewed as an extension of citizenship behavior or as another dimension of it. Concluding on this level, we unraveled also that multiplexity beyond a formal workflow relationship requires citizenship



behavior. Or said differently, a good citizen that is a workflow tie becomes also a friend or advice giver if she exhibits citizenship behaviors as well.

Beyond affecting networking behaviors, citizenship has been known to affect individual performance in differential ways. We tried to tackle this question by using multiple moderators in different levels and discover how OCBs interact with individual attributes and with informal organizational networks. Individual attributes such as rank and experience and network variables at the individual, team and supervisor level are important in determining the effect of individual citizenship on performance evaluations, demonstrating that citizenship is not always a straightforward performance indicator. OCBs interact positively with advantageous network resources through brokerage and group social capital on performance. But it seems that there is a very important trade off and a negative side of citizenship for low rank inexperienced individuals. The strong negative main effect of citizenship behavior for low ranked inexperienced individuals explicates that either citizenship behavior is seen as a negative behavior by supervisors for such subordinates as these behaviors may be “out of their waters” or that these individuals actually take away resources, they have limited access to, to engage in citizenship, decreasing their actual performance. For higher ranked and more experienced individuals these moderators turn positive, as citizenship tends to become less discretionary for their role and they can mobilize resources more effectively.

After looking at the relationship between citizenship behaviors and network centrality, tie formation and performance we shift the frame towards leader and follower relationships.

These relationships are a subset of the total tie level dyadic relationships analyzed in the first chapter and refer only to the dyads of each subordinate with her respective direct supervisor, hence the follower and leader or the member and leader characterization. We also change the frame of reference and validate citizenship behaviors as an outcome of high quality leader follower relationships. OCBs as an outcome of high quality dyadic leader member relationship are a very well established result both empirically and theoretically. Also the application of leadership and leader member dyadic relationships effects within networks, based on social exchange and reciprocity theories, is also a flourishing field of research. We put a few original ideas into the grid of existing effects of leader follower relationships and citizenship. We introduce two new leadership attributes that emerge from the leaders' informal and affective ties. Previous theory has shown that leaders' social networks and ties are important for team level outcomes. We dig deeper into the leaders' ties concept and introduce the variables of leader *affectiveness* and leader *universality*. These variables not only take into account the incoming informal and affective ties of team leaders, but also their relative number to workflow ties as well as their position outside or within the team. Affectiveness is an indication as to the friendliness -the incoming affective ties of a leader, relative to formality- the incoming workflow ties. Universality is an indication of the extent to which a leader receives informal ties outside her own team of direct reports or within. We disentangle between universality and informal brokerage of the leader; in fact we test informal brokerage as well. These network attributes provide the subordinates and the team with differential resources and signal as well what kind of leader is the team supervisor. Results prove that affectiveness and brokerage interact positively with the effect of leader follower

relationship quality on the follower's citizenship behavior, validating the friendliness signaling and the resource supply. Followers reciprocate this advantageous treatment by engaging in citizenship behaviors.

Beyond the expected positive interaction of leader affectiveness and informal brokerage with leader follower relationship quality on the follower's citizenship, we obtain an unexpected and strongly negative interaction of leader universality with the same relationship. First of all this illustrates clearly the difference of leader universality and brokerage. Both are inferred from the leader's informal advice network. Universality is the relative amount of outside the team incoming ties minus the within the team ones, whereas brokerage is the extent to which the focal leader occupies a bridging position connecting unconnected others. Our results introduce a very novel finding in the theory; that leader universality can be damaging the team members' citizenship and therefore the team's motivation or cohesiveness, whereas leader brokerage provides the hypothesized advantageous resource enhancing members' citizenship. This effect can be subject to various explanations. Universality doesn't imply any bridging ties and apparently does not deliver the same informational advantage as brokerage. However there should be a relative advantage of more 'outside the team' ties, which is counterbalanced by a negative effect on within team level consequences. This could happen because team members might feel neglected by a leader who is more focused outside the team than within, thus reducing their citizenship behaviors. Another possible explanation could be that supervisors who span their attention relatively more outside their team are not able to observe in an adequate way the behaviors of their direct reports, underestimating what they are doing.

Except for the observed hypothesized or contradictory outcomes mentioned above, some emerging patterns from the results shape a promising outline for future research. First of all the agentic trails spotted in the logistic regressions of the first chapter. More research needs to clarify the extent to which citizenship is an extension of networking behavior and a consistent factor of tie formation and shaping the intraorganizational structure.

Additionally from the same set of regressions different dynamics for the affective intraorganizational network come out. Friendships are formed between individuals of the same gender for example. This is interesting for two reasons; first because gender related network research is an extremely interesting field and secondly because it shows the differential dynamics of affective versus informal advice or formal workflow networks.

An extension of this notion is the different dynamic that seems to exist in the formation of different intraorganizational network, more specifically between friendship and advice. As friendships require more dyadic level and homophilous prerequisites, seeking advice has more antecedents at the ego level. This presents a different kind of behavior when individuals engage in different kind of instrumental or affective ties within an organization. Disentangling and analyzing further these differences could be an exciting future research prospect.

Additionally an important question still remains open. Citizenship is an answer to the question of how central individuals became central in an organization, however it still remains unexplored how brokers came to be brokers. Brokerage is a very important

concept with many outcomes, though with relatively unknown antecedents. We believe that it is a question that should not remain unanswered.

Ending, we have managed to draw a picture involving organizational behaviors and intraorganizational networks. We included various measures of centrality, citizenship, dyadic relationships and individual outcomes. It is a big step towards understanding individual behavior within organizations and the formation of networks. A set of more longitudinal data could assist in the direction of monitoring and mapping more efficiently the creation and dissolution of ties as well, and test the same results in a given period. This addition would strengthen further our claims and possibly reveal even more dynamics and patterns of network formation currently undiscovered.

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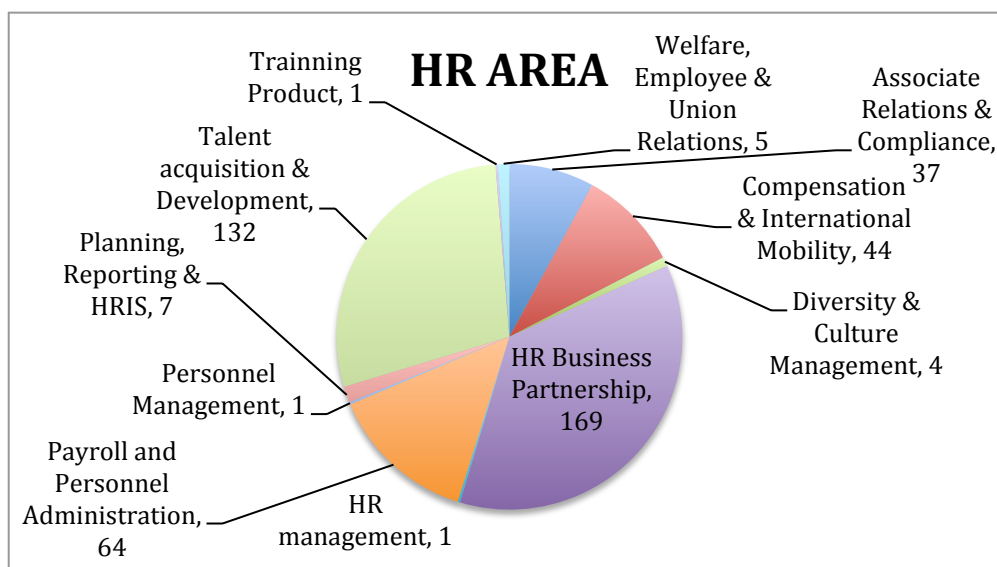
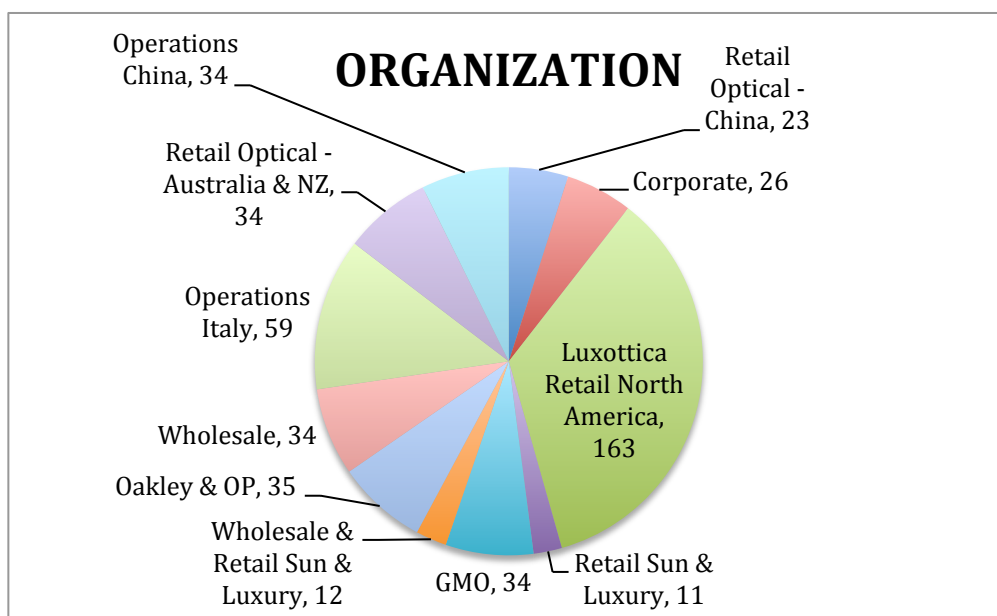


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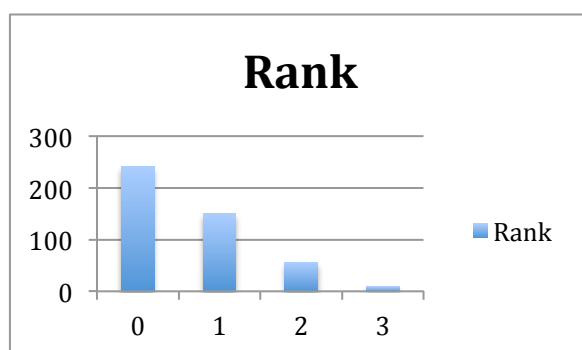
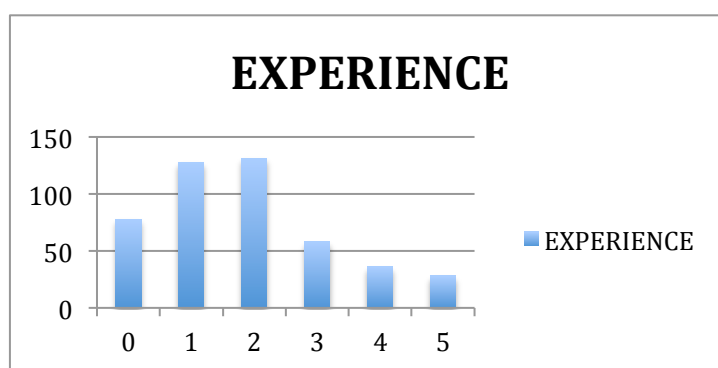
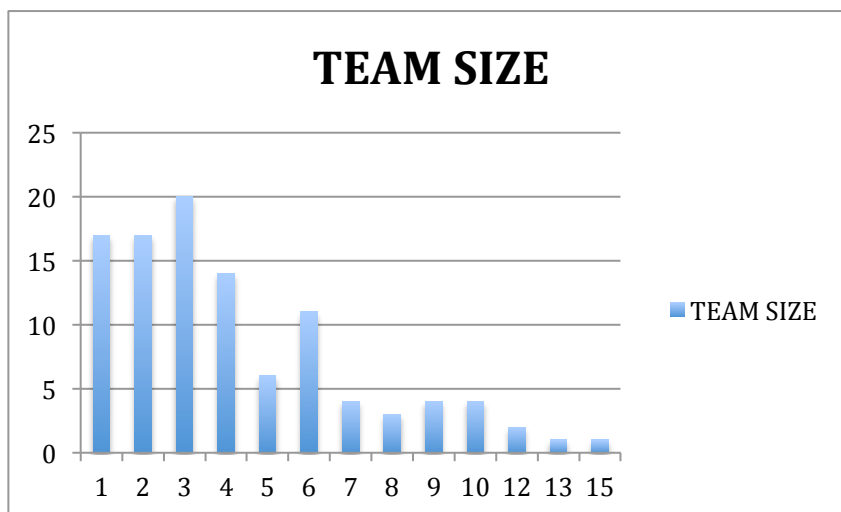
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APPENDIX I

Sample

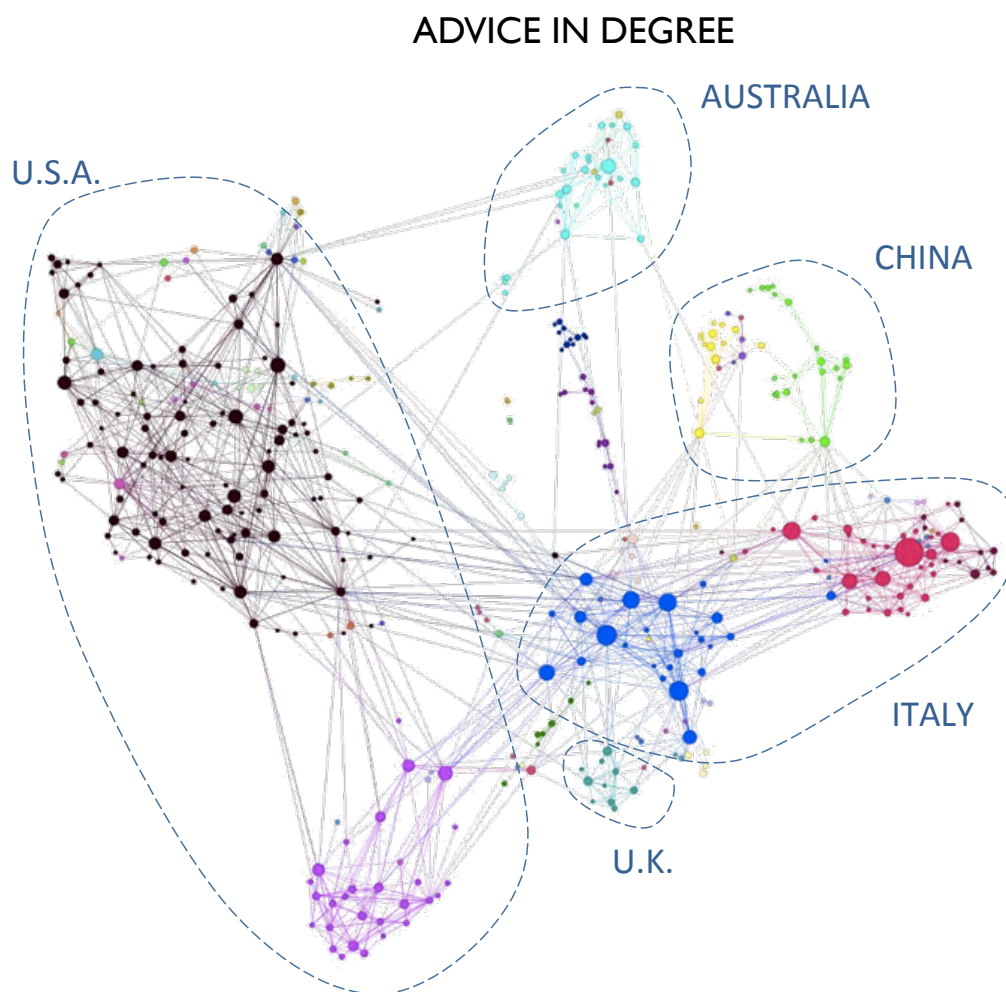




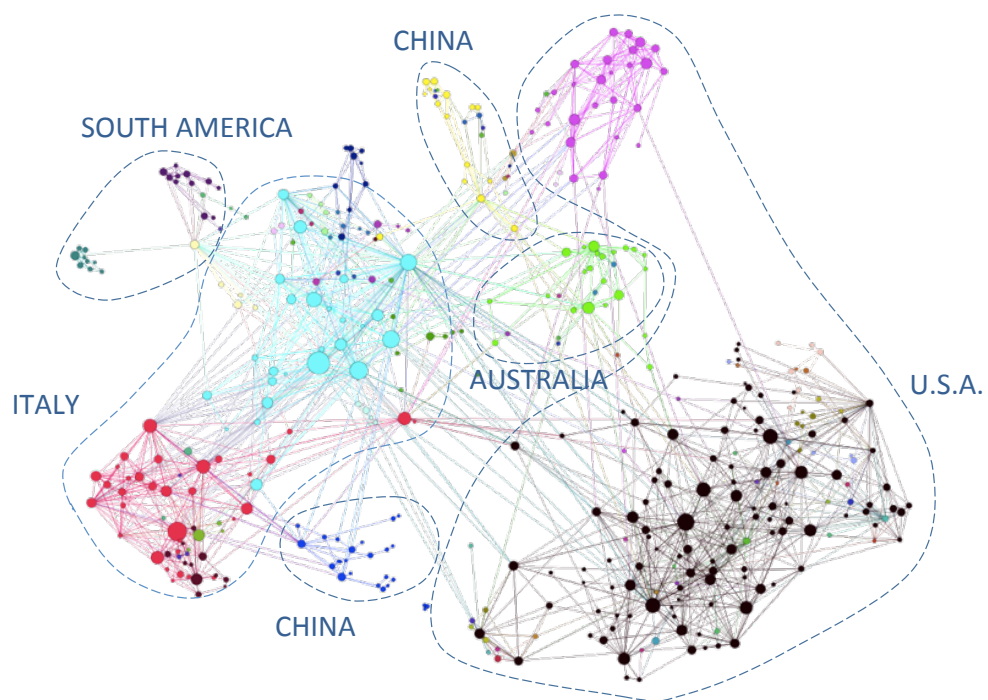


**Network Mapping**

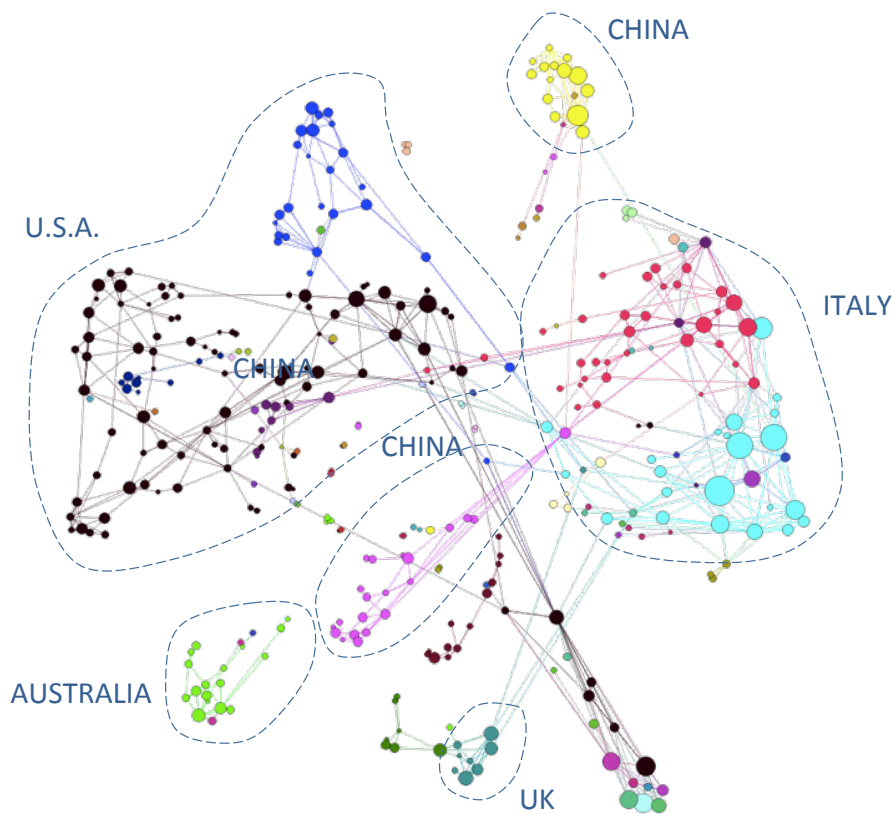
(Node size represents in-degree centrality)



## WORKFLOW IN DEGREE



## FRIENDSHIP IN DEGREE





## Organizational Citizenship Behavior Items

*Supervisor reported*

1. Willingly gives of her/his time to help colleagues who have work-related problems.

*Strongly disagree - Disagree - Somewhat disagree - Neither agree or disagree - Somewhat agree - Agree - Strongly agree*

2. Consumes a lot of time complaining about trivial matters.

*Strongly disagree - Disagree - Somewhat disagree - Neither agree or disagree - Somewhat agree - Agree - Strongly agree*

3. Attends and actively participates in meetings.

*Strongly disagree - Disagree - Somewhat disagree - Neither agree or disagree - Somewhat agree - Agree - Strongly agree*

4. Attendance at work is above the norm.

*Strongly disagree - Disagree - Somewhat disagree - Neither agree or disagree - Somewhat agree - Agree - Strongly agree*

## Network Items

*Supervisors & subordinates reported*

1. Please choose the people to whom you turn to seek **advice** on **work-related** issues.

*E.g., people that you turn to for assistance and are sources of knowledge and advice on procedures, tasks and other work related issues - whether they are physically located on site or elsewhere (e.g. through emails).*

2. Please choose the people that provide you with your **workflow** inputs / outputs

*E.g., people who provide you or to whom you send any materials and/or information that you need in order to do your job - whether they are physically located on site or elsewhere (e.g. through emails).*

5. Please choose the people who you consider **good friends**.

*E.g., if it is someone located in your area: someone with whom you like to spend your free time, attend informal social activities, such as visiting each other's homes, attending concerts or other public performances.*

*If it is someone located geographically away: someone that you know and would still regularly interact with in online social networks and platforms (facebook, twitter, skype etc) and would seek to engage in social activities when you are in the same geographical place.*