ABSTRACT

Title of dissertation: ADVERSE EFFECTS OF COMPETITION WITH COWORKERS: THE ROLE OF THIRD-PARTY TIES

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Employees rely on coworkers for support. Through workflow ties and friendship ties with coworkers, employees acquire task support and emotional support that allows them to be effective in their work. At the same time, employees often find themselves having to compete with those very coworkers for limited rewards and recognition (e.g., bonuses, promotion) that organizations provide. In this dissertation, I delineate the negative effects that competition with coworkers who are closely connected to employees in their workflow and friendship networks has on employees' task performance. I note that such competition can prevent employees from obtaining critical task and emotional support required to remain effective in their roles. Using a social embeddedness perspective, I further highlight that these negative effects of competition can be avoided when employees and their competitors are connected to third-party peers in their teams who can act as mediators and allow for continued flow of task and emotional support via

workflow and friendship ties between employees and their competitors. I test these hypotheses in the field (using a sample of 394 employees embedded in 39 R&D teams) and in two experimental studies (using 694 participants). I will discuss implications of my model for theory and practice.

ADVERSE EFFECTS OF COMPETITION WITH COWORKERS: THE ROLE OF THIRD-PARTY TIES

by

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Love is patient, love is kind. It does not envy, it does not boast, it is not proud. It does not dishonor others, it is not self-seeking, it is not easily angered, it keeps no record of wrongs. Love does not delight in evil but rejoices with the truth. It always protects, always trusts, always hopes, always persevere. Love never fails.

– 1 Corinthians 13: 4-8

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Chapter 1: Introduction

Employees often rely on one another to accomplish their job. For example, employees are able to acquire useful information and task knowledge from their coworkers who are close to them in their team's workflow; similarly, through friendships with coworkers at work, employees receive emotional comfort and encouragement (Ingram & Zou, 2008). Due to increased prevalence of team-based structures in organizations (Kozlowski & Bell, 2013), social and task interdependence amongst employees is more intense than before (Palus, 2010).

At the same time, organizations often have reward and recognition systems that foster inter-employee competition (Kantor & Streitfeld, n.d.; Scheiber, 2015a; Steinhage, Cable, & Duncan, 2017). Competition, by definition, introduces scarcity of valuable resources such as promotion and career advancement opportunities, and a degree of mutual exclusiveness to employee achievement such that one employee's attainment of success reduces the chance of success for other employees (Deutsch, 1949). Based on the belief that competitive pressure would incentivize individual effort, organizations create policies such as the "up or out" rule where employees are either promoted or asked to leave (Batcheler, 2011). While evidence does support that competition promotes individual effort and perseverance (e.g. Kilduff, 2014), it also can engender social tension that leads to erosion of trust and increase in undermining behavior (e.g. Steinel & De Dreu, 2004; Toma & Butera, 2009).

Employees, therefore, face a difficult situation—they are often compelled to compete with coworkers on whom they are dependent on for task and social resources.

An important question then emerges: how do the countervailing forces of competition and interdependence in organizations jointly affect employee's work outcomes?

In this dissertation, I highlight how inter-employee competition can interfere with resource exchanges that employees have in two important forms of relationships at work: (a) task relationships in the team's workflow, and (b) friendship relationships. These two forms of relationships represent two fundamental interdependencies that individuals have at work. I suggest that the more employees face competition with coworkers who are closer to them in their team's workflow and friendship networks, the more negative the personal consequences the employees face in terms of reduced task and emotional support, which can diminish their effectiveness in their roles.

Additionally, I integrate a social embeddedness perspective (Granovetter, 1973; Simmel, 1950) to highlight the potential moderating roles of third-party peers. I make a case that employees' relationships with each of their coworkers do not exist in isolation, but rather are embedded in the surrounding set of relationships with other peers in the team—i.e., the microstructural context (Krackhardt, 1998; Simmel, 1950). I propose that the negative effects of competition on employees can be mitigated when employees and their competitors are connected to third-party peers in their teams who can act as mediators and allow for continued flow of task and emotional support via workflow and friendship ties between employees and their competitors. For instance, John can be in a competitive relationship with is David on whom he is reliant on for task support. The competitive tension that also exists between them can render David reluctant to provide such task support to John in times of need. However, if both John and David are also connected with Tom, who can act as third-party peacemaker and settle potential disputes

and conflicts and monitor for continued good behavior in the John-David dyad, then John and David are more likely to have a more cooperative working relationship. Hence, I highlight that the negative effects of competition on employees can be mitigated in the presence of third-party peers who share workflow and friendship ties with the employees and their competitors. My conceptual model is illustrated in Figure 1.

-----Insert Figure 1 here-----

In examining this model, my dissertation makes several valuable contributions. First, this paper contributes to the existing dialogue on the effect of between-employee competition on work outcomes. A considerable body of research shows that competition incites distrust, envy and negative social behavior such as concealment and fabrication of information, deception and unethical influence tactics (Kilduff, Galinsky, Gallo, & Reade, 2016; Nicolaides et al., 2014; Pierce, Kilduff, Galinsky, & Sivanathan, 2013; Toma & Butera, 2009). The present research offers to portray a more nuanced view of competition's social consequences— competition is not necessarily detrimental to one's performance, however, its negative consequences become more pronounced when it occurs between employees and coworkers they closely depend upon. Particularly, when employees compete with coworkers closer in the workflow network, they tend to receive less instrumental support; when they compete with coworkers closer in the friendship network, they tend to receive less socioemotional support.

Secondly, my dissertation introduces a social embeddedness perspective to examine the potential moderating effect of third-party influences in the social network (M. Granovetter, 1985; Liden, Anand, & Vidyarthi, 2016). In doing so, this research significantly extends the boundary of existing competition literature that has been

operating under the implicit assumption that competition is just about the social consequences between competitors, without considering the possibility that competition is embedded in an existing social environment that is capable of transforming its dynamics (Dekker, 2006). Only recently has research begun to examine this possibility. For instance, a recent study showed that in one-on-one negotiation games, the mere possibility of a third-party "peacemaker" could reduce noncooperative behavior (Halevy & Halali, 2015). Adding to this emerging line of work, by examining these multiplex, competition-interdependence relationships in the context of third-party ties (i.e. Simmelian ties), this paper makes an important opening in the existing conversation about the contingencies of competition's effect on performance.

Chapter 2: Theory and Hypotheses Development

Employees have interdependent exchange relationships with their coworkers that provide them various forms of workplace support (Palus, 2010). Specifically, research shows that the such exchanges take the form of either task-related, instrumental relationships, or social, emotional relationships (Fombrun, 2011; Lincoln & Miller, 1979; Rossel, 1970). In this paper, consistent with the instrumental-social taxonomy, I examine two specific types of relations among employees, namely, workflow ties and friendship ties. While friendship ties represent affect-laden relationships that can stimulate exchange of social and emotional support among employees, interdependent workflow ties connect employees who need to interact, exchange task materials and collaborate to accomplish their jobs (i.e., workflow ties captures those who "work closely" with a person, Umphress, Labianca, Brass, Kass, & Scholten, 2003). Together, using friendship ties and

workflow ties enables me to delineate employees' socioemotional and instrumental relationships between coworkers.

While these relationships enable the flow of instrumental and socioemotional resources that are important in facilitating work outcomes (e.g. Mehra, Dixon, Brass, & Robertson, 2006; Morrison, 2002; Venkataramani, Richter, & Clarke, 2014), employees are also challenged by the reality that these interdependent partners are simultaneously competing for limited organizational resources and opportunities. While competition between coworkers has always been a fundamental aspect of organizational life due to the inherent scarcity of valuable outcomes and resources such as career advancement opportunities, it has only grown more intense and prevalent as organizations now actively institute policies to encourage competition amongst employees (Scheiber, 2015b). By making salient the fact that one employee's success or goal achievement reduces another employee's chance of achieving the same result (Deutsch, 1949), organizations hope to enhance individual motivation and observe heightened effort (Kilduff, 2014). Such competition, however, has also been shown to consistently fester social tension, which in turn diminishes employee willingness to facilitate one another's progress (e.g. Steinel & De Dreu, 2004; Toma, Vasiljevic, Oberlé, & Butera, 2013). For instance, Steinel and De Dreu studied participants in a competitive information provision game and found that players intentionally concealed critical information or shared inaccurate information with one another. Thus, competition with one's instrumental and/or emotional resource providers likely curtails the access to such resources and support that are important for one's performance. To the extent these countervailing forces of competition and interdependence are both important determinants of employee work outcome in their own

right, it is then important to ask – how can employees navigate this unique social situation?

To address this issue, this paper takes a two-step approach in which I first unpack the process in which competition with interdependent partners negatively affects a focal employee's task performance. Specifically, I suggest the social tension associated with competition becomes more pronounced and detrimental when employees compete with coworkers that are closer in their workflow and friendship network. Extending this idea, I delineate the mechanisms through which one's competition with interdependent partners (i.e. in the workflow and friendship network) has negative effects on their performance. Second, integrating a social embeddedness perspective and work on Simmelian ties (M. Granovetter, 1985; Krackhardt, 1998; Liden et al., 2016), I develop theory to suggest that the presence of third-party ties to competing coworkers can help "regulate" the competitors and promote cooperative support exchange.

A Relational Lens to Interdependence and Competition. To answer the question of how employees may effectively manage the tension between interdependence and competition first requires an understanding of employee workplace relationships. To this end, this paper adopts a dyadic, relational perspective to highlight the fact that employees have both positive interdependent relationships (i.e., workflow ties and friendship ties) and competitive relationships with coworkers. This particular perspective has several important advantages in describing interdependence and competition. First, it allows a focal actor to have interdependent relations *and* competitive relations with coworkers (Kilduff, Elfenbein, & Staw, 2010). Second, it allows for the possibility that a focal actor has multiplex relationships with coworkers such that the focal actor can have

varying degrees of overlapping interdependent and competitive relationships with coworkers (Shipilov, Gulati, Kilduff, Li, & Tsai, 2014; Tsai, 2002). For example, a focal person can potentially have multidimensional relationships with coworkers where those ties are both competition relations and friendship relations (Ingram & Zou, 2008; Methot, Melwani, & Rothman, 2017). This multiplex aspect is critical as it captures the essence of competition with interdependent coworker this paper aims to unpack.

More importantly, this relational perspective helps reveal an important fact about competition—employees, because they may have interdependent and competitive relationships with different sets of coworkers, tend to differ with regard to the extent their competitive relationships *coincide* with their interdependent relationships. In other words, all else equal, employees differ in the extent to which they compete with their interdependent partners. For example, using Figure 2 as an illustration (blue line indicates interdependent relationships; red line indicates competitive relationships), Person A and Person B both have the same amount of interdependent and competitive relationships (each has four competitive relationship, and four interdependent relationships). However, the degree to which they have competitive and interdependent relationships with the same coworkers differ significantly. In the case of Person A, only one of the four interdependent relationships is also a competitive relationship whereas in the case of Person B, three of the four interdependent relationships are also competitive relationships. In other words, Person A and Person B, all else equal, differ in terms of *the extent they compete with interdependent partners*.

------Insert Figure 2 here-----

This aspect of how one's interdependent and competitive relationships overlap has important implications as it underlies the degree of exchange-competitive tension employees have to manage. In the above example, even though they have equal numbers of interdependent partners and competitors, Person B, because of a higher degree of competition with interdependent partners, has to devote more attention and resources to manage the tension associated with having these delicate, multiplex relationships. Building on this logic, I reason that all else equal, this difference in the extent to which a focal actor competes with his or her interdependent partners (i.e. in the workflow and friendship network) will negatively affect the extent to which the focal actor can effectively acquire instrumental and socioemotional support from his or her coworkers.

The Peril of Competing with Interdependent Partners. Competition with interdependent partners likely incurs greater difficulty in acquiring instrumental and socioemotional support for several reasons. First, competition with exchange partners likely diminishes these partners' willingness to facilitate a focal actor's work progress and therefore reduces the provision of support to the focal actor. This is because when actors compete with each other, they are affected by an inherent zero-sum mindset associated with such competitive relationships (Deutsch, 1949). Thus, when interdependent partners also have competitive relationships with the focal actor, any provision of support to the focal actor would be construed as tantamount to intentionally reducing their own chances of success. For example, in terms of coworkers in the workflow network (those who work closely with a focal actor), prior research has shown that although these coworkers are in position to provide useful information, they might purposely conceal said information when they perceive the relationships to be

competitive (Steinel & De Dreu, 2004). Similarly, study has also shown that when competitive tension was present, coworkers were more likely to display negative emotion and interpersonally abrasive behavior (e.g. yelling, glaring, aggressive sarcasm) (Chattopadhyay, Finn, & Ashkanasy, 2010). Notably, while one might reason that such display of negative emotion and negative behavior may not occur when a person is competing with a close friend, research suggests competition with friends could actually be especially hostile when the task of contest is perceived as important (Tesser & Smith, 1980).

Second, for either instrumental and emotional support to be effectively received, the receiving party (i.e. focal employee) needs to appropriately recognize provision of support, which is not always the case. For instance, a focal employee may receive a piece of information from a coworker in the workflow network, however, due to competitive tension, the focal employee may suspect the underlying motivation of information provision and therefore does not properly acknowledge it. In other words, for effective acknowledgement of instrumental and emotional support to occur, employees need to have evidence that support was provided truthfully and genuinely. In this sense, even if a certain level of support is provided by interdependent partners (e.g. some information, or some emotional support), competition may still prevent recognition of such support.

In the case of coworkers in the workflow network, for instance, in order for task-related knowledge transfer to be effective, not only do coworkers need to be willing to provide such knowledge (which might be already reduced by competition in the first place), the intended receiver (i.e. focal employee) also needs to be able to recognize the information as supportive (Reagans & McEvily, 2003; Szulanski, 2000). If believed to be

incomplete, inaccurate or shared with ulterior motives such knowledge would not be acknowledged by the receiving employee (Szulanski, 1996). To this point, research has shown that suspicion and distrust are especially likely to emerge when coworkers have conflicting attitudes about each other (Rothman, Pratt, Rees, & Vogus, 2017). Compared to purely competitive or purely cooperative coworkers, coworkers that have both interdependent workflow and competitive relationships with each other need to constantly adjust their cognitive appraisal of these multiplex relationships and manage the pendulum between trust and distrust (Duffy, Ganster, & Pagon, 2002; Tesser & Smith, 1980). Hence, even if some level of task support does reach the focal employee, this aspect of unique uncertainty associated with competitive relations likely prevents the focal employee from fully acknowledging said support provision.

Similarly, in the case of coworkers in the friendship network, acts of social or emotional support (e.g. comforting phrases, friendly gestures) need to be perceived as trustworthy and genuine for them to be acknowledged (Ashforth & Humphrey, 1993; Grandey, Fisk, Mattila, Jansen, & Sideman, 2005). In fact, emotional support that is perceived to be inauthentic may result in more negative outcomes than not doing anything at all (Grandey & Gabriel, 2015). Consistent with this idea, competition with friends engenders anxiety and distress for by eliciting simultaneous but yet opposite-valanced emotions (e.g. empathy and envy), which could even have long-term negative physiological consequences (Holt-Lunstad, Uchino, Smith, & Hicks, 2007; Uchino, Holt-Lunstad, Uno, Campo, & Reblin, 2007). This emotional dissonance between coworkers with friendship-competition relationships are likely to not only drain their own emotional regulatory resources (Methot, Melwani, & Rothman, 2017), but also result in ineffective

emotional communication (Methot, Lepine, Podsakoff, & Christian, 2016), preventing emotional support from being fully recognized. In other words, even when an authentic emotionally supportive message is delivered from a friend, competition may still prevent the focal employee from recognizing its message.

As a whole, I suggest that the extent to which a focal employee competes with his or her interdependent partners has negative effects on the magnitude of support provided by said partners and even if support is provided, competition may still prevent it from being fully acknowledged. As a result, I propose that competition with interdependent partners will negatively influence the degree to which a focal employee receives instrumental and emotional support, which in turn decreases task performance.

Hypothesis 1a: Competition with interdependent coworkers in the workflow network is negatively related to task support received by the employee

Hypothesis 1b: Task support mediates the negative relationship between competition with interdependent coworkers in the workflow network and task performance of the employee.

Hypothesis 2a: Competition with coworkers in the friendship network is negatively related to social support received by the employee.

Hypothesis 2b: Social support mediates the negative relationship between competition with coworkers in the friendship network and task performance of the employee.

Third-Party Influence as Mediators. Thus far, I have focused on the negative effects of competition with interdependent partners, which raises an important question:

when mired in these intricate interdependent-compete relationships with coworkers, how can employees effectively manage the social fallout?

To address this issue, I integrate a social embeddedness perspective (Granovetter, 1973; Liden et al., 2016) to examine how third-party influence in the social context might assuage the tension associated with competition with interdependent coworkers. Work on social embeddedness suggests that relationships do not exist in a vacuum as they are always embedded in the surrounding microstructure, and interactions between two coworkers are affected by the presence (or absence) of third-party influences (Krackhardt, 1998; Simmel, 1950). To the extent competition with interdependent partners reduces willingness to provide support and gives rise to distrust and suspicion, the potential mediating, peacemaking influence of third-party presence may be especially relevant (Nakashima, Halali, & Halevy, 2017).

Building on this idea, I suggest that when employees are challenged by having a greater extent of competition with interdependent partners, the presence of third-party influences, specifically in the form of Simmelian ties (Krackhardt, 1998; Simmel, 1950), can exert influence to help mitigate the negative effects described above. A Simmelian tie is said to be present when Person A and B are connected to each other, *and* they are both connected with Person C. By having a Simmelian tie (i.e. Person C as the third-party), the relationship between Person A and B is said to be embedded in a three-person clique comprised of all three parties (Dekker, 2006). The presence of Person C, Simmel argues, fundamentally transforms the nature of the relationship between Person A and B in several important ways that are relevant to addressing the adverse effects associated with competing with one's interdependent partners.

First, using the above example, when a competitive relationship exists between focal employee Person A and his interdependent partner Person B, the presence of a third-party (i.e. Person C) can help reduce Person B's reluctance to provide support by enabling an alternative pathway through which Person A could get support from Person B. Without Person C, Person B has full discretion interacting with Person A and therefore could choose to act opportunistically by providing Person A with support that is incomplete or inaccurate (e.g. here I use task information as an example, but logic should be equally applicable to emotional support). In this case, should Person A choose to act upon said incomplete or inaccurate information, Person B likely gains an advantage in this competitive relationship. However, with Person C as an alternative pathway for information flow, Person B has less motivation to withhold or misrepresent information because Person A could potentially be able to verify the truthfulness or completeness of said information indirectly via Person C.

In addition to acting as an alternative pathway to verify and transmit support, third party presence (i.e. Person C) could also actively provide monitoring and peacemaking influences to prevent and manage occurrence of intentional negative behavior, whether such behavior takes the form of withholding task information or providing inauthentic emotional support. In terms of discouraging negative, non-cooperative behavior, social psychological research has suggested that the mere possibility of third party presence in negotiation games can effectively prevent participants from engaging in undermining, non-cooperative behavior (Halevy & Halali, 2015). This is because when participants (e.g. Person A and Person B) are aware of the possibility of an enforcer of cooperative norms, they are more likely to discard self-interested, competitive behavior. This

tendency to cooperate should even stronger when both parties are dependent on the third-party, as it is the case in a Simmelian tie (i.e. Person A and B both are connected with Person C). Related to this logic, individuals embedded in a clique likely develop common language (Carlile, 2004) and norms of reciprocity (Uzzi, 1997), both of which engenders trust and facilitates recognition and utilization of support. Uzzi described the importance of trust development in a clique as "(the) predilection to assume the best when interpreting another's motives and actions." Such assumption of good faith not only reduces cognitive and affective effort in debating whether one wants to provide support in the first place, but also diminishes hesitance to acknowledge support when provided. To this end, the presence of Person C as a third-party influence should help discourage Person A and Person B from engaging in uncooperative, undermining behavior.

Admittedly, even when Person C is present to monitor and encourage cooperative behavior, the competitive aspect of the relationship between Person A and Person B could still result in some level of interpersonal tension and disputes (Nakashima et al., 2017), especially considering work that has suggested negative attitudes and behavior (e.g. competitive relationships) tend to outweigh positive ones (Labianca, Brass, & Daniel, 2006). To this end, research has suggested that when disputes arise, Person C, due to the virtue of being connected to both parties, can act as a mediator and facilitate dispute resolution (Krackhardt, 1998; Burt, 2002). This aspect of managing the aftermath of negative behavior between two parties is a particularly important type of third-party influence because without Person C's presence, if a certain dispute occurs, both Person A and Person B have full discretion to retaliate with escalating attacks, or even one-sidedly sever relationship completely. However, by being connected with both parties, Person C

could help de-escalate tension and restore a functional balance between Person A and Person B (Tortoriello & Krackhardt, 2010). Supporting this notion, social psychological research using the Repeated Peacemaker Game shows that even when a history of competitive, adversarial relationship exists between two players, a high level of cooperation and trust could be established by introducing a third-party mediator (Nakashima et al., 2017).

It is also worth noting that the effect of third-party is not limited to discouraging counterproductive behavior (e.g. withholding and misinterpreting information). In fact, third-party effect has been shown to foster collaborative norm, even after the third-party exits (Nakashima et al., 2017). This is consistent with the general principle of clustered network where reputation plays a central role in not only punishing norm violator, but also increasing the payoff of involved parties' payoff (Burt, Kilduff, & Tasselli, 2013). In an experimental investment game, researchers found that once a collaborative norm is established where third-party presence helped participants to realize collaboration is the optimal strategy, participants were much more likely to behave prosaically in a voluntary manner (without third-party actively administering reward and punishment, (Charness, Cobo-Reyes, & Jiménez, 2008).

Together, I propose that the presence of third-party influence, particularly in the form of Simmelian ties, can encourage support provision and facilities support recognition between competing partners. These mechanisms, in turn, help mitigate the negative effects of competition with exchange partners on task performance.

Hypothesis 3a: The negative relationship between competition with interdependent coworkers in the workflow network and task support is weakened in the presence of common third-party coworkers in the work-flow network.

Hypothesis 3b: The negative mediated effect of competition with interdependent coworkers in the workflow network and task performance (via task support) is weakened in the presence of common third-party coworkers in the work-flow network.

Hypothesis 4a: The negative relationship between competition with coworkers in the friendship network and social support is weakened in the presence of common third-party coworkers in the friendship network.

Hypothesis 4b: The negative mediated effect of competition with coworkers in the friendship network and task performance (via social support) is weakened in the presence of common third-party coworkers in the friendship network.

Chapter 3: Empirical Studies

To examine the above hypotheses, I conducted two studies. Study 1 is a cross-sectional field survey study where I collected data from a Chinese R&D organization. Sample includes 394 research scientists from 39 teams. Study 2 is an experiment in which participants engaged in virtual consulting team project where I manipulated my independent variable and moderator. Together, the field survey study and the controlled experiment allow me to establish internal and external validity.

Study 1

Method

Data and Sample

To examine my hypotheses, I collected field survey data from a large research and development institute (hereby referred to as the Institute). Administratively, the Institute is a subunit under an extremely large government-run research and development entity, which oversees more than 500 research institutes with various specializations, ranging widely from natural and social sciences such as microbiology and economics, to applied engineering such as microelectronics and aerospace. These subunits operate as semi-autonomous organizations not too dissimilar from a small-size university. The Institute is home to over 400 research scientists, ranking from Assistant Researcher to Associate Researcher and Full Researcher (similar to Assistant Professor to Full Professor). These researchers are organized within 9 Research Departments, and within each Research Department, there are usually 2-5 research teams. The difference between Research Departments is characterized by disciplinary boundaries (e.g. chemistry, semi-conductor etc.) whereas the differences between research teams are characterized by differences in within-discipline topical focus.

Data was collected in the second half of 2019. The first step was to establish contact with an internal stakeholder at the Institute, and I was successful in connecting with the Recruitment Director, who has in-depth knowledge of the internal operations of the institute. Via this liaison, I conducted approximately 8 hours of semi-structured interviews to familiarize myself with the organization and its personnel. The targets of my interviews purposely spanned organizational levels, from lower level research assistants to team leaders. Using the results of my interviews, I was able to tweak the language of my survey items to better fit the organizational context and develop an understanding of the set of control variables that are appropriate for this context.

We (i.e. my liaison and I) first created a list of all employees and their respective unit membership. Using this list of names, I then created round-robin surveys for each team, where a participant is given the names of all employees in his/her team, and asked to respond to questions regarding each other team member. I sent these surveys to each research department's own administrative secretaries, who then distributed the surveys in envelops to each employee in their department. To ensure confidentiality, when employees completed the survey, they used a seal sticker provided in the envelop to ensure that their response was not opened by anyone else and returned it to the secretary. When the secretaries returned all surveys to me, no envelops had signs of being opened, indicating confidentiality was protected. Team leaders were asked to complete evaluation surveys designed to assess employee performance.

Survey administration started in September and was completed in October 2019. The survey was translated to Mandarin Chinese, and then piloted with 5 members of the Institute chosen by my liaison. Due to the fact that several research teams were located outside of the main campus of the institute, they were unable to participate in the study. Also, a number of employees could not complete the study due to their business travels.

Each team is typically comprised of one or two Full Researchers, several Assistant and Associate Researchers and a number of research assistants. I distributed surveys to 549 employees in 52 teams and collected surveys from 449 members in 50 teams (equivalent to 96% of the teams, and 82% of employees). I then excluded 11 teams due to substantial missing data, particularly in the network section where exclusion was decided based on the conventional 80% response threshold (Marsden, 1990). The final sample consists of 394 employees nested within 39 teams. The average team size is 10.10

employees. Among team members, 68% were male, the average age was 30.6 years, and the average tenure at Institute was 3.73 years. Among team leaders who were typically one of the Full Researchers in the team, 87% were male, their average age was 46.8 years, and their average tenure at the Institute was 12.47 years.

Measurement

Network Measurement. In the round robin section of the survey, participants responded to a number of single-item questions to indicate their dyadic relationships with every other member within the team. Friendship ties were measured using the question "To what extent do you consider this employee a personal friend (e.g. a person you befriend within and outside of work, spend breaks with, or with whom you like to take part in different social activities)" (Sasovova, Mehra, Borgatti, & Schippers, 2010). Respondents used a 5-point Likert scale (1 = *don't know this person at all*, 5 = *very close friend*) to answer this question. Workflow ties were measured by the question "To what extent do you rely on this person for inputs to your job?" (Brass, 1985) using a 5-point Likert scale (1 = *not at all,* 5 = *very frequently*). Competition ties were measured by the question "To what extent do you have a competitive relationship with this employee (e.g. you strive to outperform this person in terms of job performance, technical knowledge, and social activities)?" (adapted from Kilduff, Elfenbein & Staw, 2010; Eisenkraft, Elfenbein & Kopelman, 2017). Participants used a 5-point Likert scale (1 = *no competition at all*, 5 = *very intense competition*) to answer this question.

From responses to the above questions, I constructed a *n x n* matrix for each team where *n* is the size of a given team. This resulted in 39 friendship matrices, 39 workflow matrices, and 39 competition matrices. To construct my independent variables, I first

dichotomized these matrices following the guidelines proposed by Borgatti & Quintane (2018). Specifically, a cutoff was chosen such that the dichotomized matrix retains maximum correlation with the original valued matrix. In this data set, a value of 2 or greater (in the Likert scale, 2 represents *slight competition*; correlation with original valued matrix $r = .91$) is chosen for the competition matrix whereas 3s are chosen for friendship matrix (three represents *regular friends*; $r = .95$) and workflow matrix (three represents *occasionally*; $r = .95$), respectively.

In addition to dichotomization, I also symmetrized these matrices to achieve better psychometric properties of these measures (Krackhardt, 1998). For instance, a friendship tie was recorded as existing if and only if both Person A and Person B reported each other as friends. Similarly, two employees do not have a workflow tie unless both parties reported ties with each other. These dichotomized and symmetrized matrices were used to calculate my independent variables.

Competition with interdependent coworkers in the workflow network. Among an individual employee's workflow partners, I counted all those that they also had competitive ties with. For example, if Person A has 4 workflow alters, but only has competitive ties with 1 of those 4 alters, then this variable is coded as 1. If 3 of those 4 workflow alters have competitive ties, then the variable is coded as 3.

Competition with interdependent coworkers in the friendship network. Similar to the above, among an individual employee's friends, I counted all those that they also had competitive ties with. For example, If Person B has 5 friends in the team, and that s/he also has competitive ties with 3 of those 5 friends, then the value of the variable is recorded as 3.

Third-party ties in workflow network. This was also calculated using the above dichotomized and symmetrized matrices. Specifically, the presence of third-party ties in workflow network is calculated based on the sum of number of mutual workflow partners that exist between the focal employee and every other employee in the team. For instance, if Person A has 2 workflow partners in the team, Person B and Person C, and there are 3 mutual workflow partners between Person A and Person B and 4 mutual workflow partners between Person A and Person C, then the variable is calculated to be 7.

Third-party ties in friendship network. A similar calculation as above was done, but using the friendship network to calculate the total number of mutual friends the focal employee has with every other employee in the team.

Task Support. Task support received by the focal employee was assessed by the question "to what extent does this person provide you with task-related support? (e.g. this person helps you in problem solving on the job and provide task related information and advice)" using a 5-point Likert scale (1 = *not at all*, 5 = *very frequently*). Specifically, I calculated the out-degree centrality of each individual in this network, which is an indicator of the total amount of support received by the focal employee from all his other team members (Freeman, 1977). It is worth nothing that I did not dichotomize these matrices because the valued matrices capture both the number of alters and the strength of each tie. In other words, the task support received by the focal employee should account not only the number of coworkers that send emotional support towards the focal employee, but also how much task support is sent by each tie. In addition, I did not symmetrize these matrices because doing so would limit me to examine only

task/emotional support *exchanged*, rather than task/emotional support *received*, which is central to my theory.

Emotional support. This was assessed by the question "to what extent does this person provide you with emotional support? (e.g. this person is concerned with your well-being, offers emotional encouragement or consolation when you feel down)." Similar to task support, this was operationalized using out-degree centrality, this indicating the total amount of emotional support received by this employee from his/her team members.

Dependent variable. Employee performance was rated by the team leader, who is unique to each team (i.e. no two team share a team leader). Team leaders rated every employee on a three-item scale (1 = *unsatisfactory,* 5 = *exceptional*), which includes "please rate this employee's performance in terms of his or her quality of work.", "please rate this employee's performance in terms of his or her quantity of work.", and "please rate this employee's performance in terms of his or her accuracy of work." (Welborne, 1999).

Control variables[1]. I controlled for a number of relevant demographic variables. Particularly, on the employee level, I controlled for employee gender (0 = *male*, 1 = *female*), education (1 = *high school*, 2 = *Bachelor's*, 3 = *Master's,* 4 = *Doctorate*), and tenure at the organization. Prior work has shown that task exchange, friendship, and competition are influenced by employee's surface-level characteristics (Ely, 1994; Rudman & Fairchild, 2004). On the leader level, to the extent leaders of different demographics may convey different preferences for employee competition (e.g.

[1] Results hold with an alternative, more "basic" set of control variables (see Supplementary analysis)

Lee, Kesebir, & Pillutla, n.d.; Ryan, Haslam, Hersby, & Bongiorno, 2011), I controlled for leader gender and tenure. The reason I did not control for leader education was that all leaders had a doctorate degree, hence there was no variance in leader education level.

I also controlled for several important task and individual characteristics that may influence either the independent variable, dependent variable, or their relationships. For instance, the more complex the task, the more the employee may benefit from task support from others. In this regard, I controlled for task complexity, measured by a 4-item scale by Morgeson & Humphrey (2006), and task interdependence, measured by a 4-item scale by Van der Vegt & Janssen (2003). Sample items for task complexity include, "The job requires that I only do one task or activity at a time", and "the job comprises relatively uncomplicated tasks". Both items are reverse-coded. Sample task interdependence items include "I need information and advice from my colleague to perform well", and "I regularly have to communicate with colleagues about work-related activities". While this dissertation mainly examines peers as third-party presence, it is possible that leaders also play a role in regulating social exchange. To this end, I controlled for employee reported leader-member exchange, measured by an 8-item scale by Scandura & Graen (1984), of which sample items include "My manager understands my problems and needs", and "My manager recognizes my potential well".

To the extent task/emotional resource may not solely come from inside the team, I also controlled for team dependency on external sources (e.g. for knowledge, equipment and resource), as employees who work in teams that rely more on external sources may engage in less social exchange between team members. This was measured by a 3-item scale I created based on interviews with team leaders, of which sample items include "my

team needs to collaborate with organizations outside of the institute", and "my teams often needs to connect with external organization to complete our work". Additionally, I controlled for how long the team has been established, as team's lifespan could relate to members' familiarity with each other, which could in turn predict social exchange (Mael & Ashforth, 1992).

Last but not least, I controlled for competition degree centrality and workflow/friendship degree centrality for the focal employee. Since the networks are dichotomized, these control variables are essentially the number of competition/workflow/friendship ties one has. This allows me to interpret the results of my independent variable as "holding the number of competitors/workflow alters/friends constant, how does the degree to which competition overlaps with workflow/friendship network predict task/emotional support?"

Analytic Approach

The data structure in this sample is characterized by three levels. Level 1 variance exists between dyads (e.g. relationship between A and B is different from relationship between A and C), Lever 2 variance between person (e.g. A and B have different personalities), and Level 3 between teams (e.g. Team X's leader is different from Team Y's leader). In the main analysis, my interests are explaining Level 2 person-level variances (i.e. task/emotional support, performance). Hence, all variables are calculated as person-level metrics, and I used multi-level modeling with MLR estimator in MPlus to account for Level 3 group-level variances. Note that in this analysis, Level 1 dyadic level variances (e.g. A's friendship ties with various coworkers) are aggregated to the person-level (e.g. the number of friends A has). In addition, according to convention, I group-

mean centered my Level 2 person-level variables and grand-mean centered my Level 2 team-level variables (Enders & Tofighi, 2007). In the supplementary analysis section, I also report dyadic level analysis using Multiple Regression Quadratic Assignment Procedure via Double-Dekker Semi-Partialling method. In this analysis, my interests are predicting Level 1 dyadic level variance. While the method itself accounts for Level 2 differences between people, I used local partitioning (detailed in the Supplementary Analysis section) to account for Level 3 between-group variances.

Results

Table 1 presents descriptive statistics, scale reliability, and correlations among variables. Table 2 presents two families of regressions conducted to test the hypotheses involving task support and emotional support, respectively. Hypothesis 1a suggests that competition with coworkers in one's workflow network would hinder the focal employee receiving task support, and results from Model 2 show that competition with workflow alters is negatively related to task support (b = -2.91, p <.01). Thus, Hypothesis 1a was supported. Hypothesis 2a suggests that competition with coworkers in one's friendship network would inhibit the focal employee receiving emotional support, and results from Model 5 provides support for this hypothesis (b = -4.64, p < .01).

Hypothesis 3a and Hypothesis 4a posit that the negative effect of competing with interdependent coworkers in the workflow and friendship network could be attenuated by having third-party ties. To test them, I entered the interaction terms. However, results do not support these hypotheses. The interaction between competition with workflow coworkers and third-party ties in the workflow network is not significant (b = .01, *n.s.*). Similarly, the interaction term between competition with friendship coworkers and third-

party ties in the friendship network is not significant either (b = .01, *n.s.*). However, it is worth noting that in the workflow/task domain, the presence of third-party had a positive main effect (b = .11, p <.01) where employees who have more mutual workflow partners with other members tend to receive more task support.

------insert Table 1 &2 about here------

Hypothesis 1b posits that task support mediates the negative relationship between competition with coworkers in the workflow network and performance. However, as Model 8's results indicate, task support had a non-significant effect on performance. Indeed, mediation analysis shows an insignificant indirect effect (indirect effect = -.01, 95% CI [-.04,.02]). Similarly, Hypothesis 2b was also not supported due emotional support not having a significant effect on task performance (indirect effect = -.02, 95% CI [-.06, .02]).

Hypothesis 3b and Hypothesis 4b posit for moderated mediation effects. These two hypotheses were not supported. For Hypothesis 3b, it was argued that the presence of third-party ties would weaken the negative relationship between competition with workflow coworkers and task support. At +1 SD of presence of third-party ties, the indirect effect from competition with workflow coworkers and performance is insignificant (indirect effect = -.009, 95% CI [-.04,.02]); At -1 SD, the indirect effect is also insignificant (indirect effect = -.009, 95%CI [-.04, -.02]). For Hypothesis 4b, it was suggested that the presence of third-party ties in the friendship network would attenuate the negative effects of competition with friends on emotional support. At +1 SD of third-party presence, the indirect effect from competition with friends and performance is

insignificant (indirect effect = -.017, 95% CI [-.06, .02]); at -1 SD of third-party presence, the indirect effect is also insignificant (indirect effect = -.02, 95% CI [-.07, .03]).

Supplementary analysis

Cross-domain interaction. While my theoretical model posits domain-specific moderation, where third-party ties in the workflow networks only moderates the effect of competition on task support and third-party ties in the friendship networks only moderates the effect on emotional support, it is also possible to imagine that cross-domain interaction may occur. For instance, researchers have found that while social support and social undermining from coworkers and managers tend to have similar effects on employee outcomes (e.g. support generally boost performance and undermining generally hinder performance), employee performance is also predicted by cross-domain buffering, where support from one source could attenuate the negative effect of undermining from another source (Duffy et al., 2002). Hence, to test this possibility, I re-ran Model 3 and Model 6 in Table with cross-domain moderators. I first re-ran Model 3 where the IV was competition with workflow partners and the moderator was presence of third-party ties in the friendship network. Results indicated that the IV still had a significant negative effect (b = -2.86, p <.01), and the moderator had a significant positive effect on task support (b = .08, p < .01), but the interaction was insignificant (b = -.01, *n.s.*). Then I re-ran Model 6 with workflow third-party ties to predict emotional support. A similar pattern was found where the IV had a main negative effect on emotional support (b = -4.35, p < .01), the moderator had a positive effect (b = .06, p < .05), and the interaction term was insignificant (b = -.03, *n.s.*). Hence, a cross-

domain interaction was not found (it is worth noting that the two third-party measures correlate at r =.69).

Alternative sets of controls. To further explore the robustness of my models, I reduced the model down to a very basic set of control variables and re-ran Model 2 and 5. On the employee level, I only retained demographics (gender, age, education) and employee's degree centrality in the competition network and workflow/friendship networks. On the team level, I only retained team size, because it's correlated with degree-based network metrics. Results do not reflect a qualitatively different conclusion. Competition with workflow partners was still negatively associated with task support (b = -2.60, p <.01) whereas competition with friendship partners was negatively related with emotional support (b = -4.09, p <.01). Similarly, I then re-ran the interactions in Model 3 and 6. There were no significant differences from the original models. However, when the mediator-DV relationships are re-examined with this set of control (Model 8 and 10), task support became marginally related to performance (b = .01, p = .056), whereas emotional support remained insignificant (b = .004, *n.s.*).

Different network cutoffs. While in the main analysis I used Borgatti & Quintane's (2018) method of dichotomization to minimize data distortion, it could be argued that an alternative cutoff method might be better suited. It could be suggested that strong ties of workflow and friendship could be particularly useful sources of task and emotional support. In this regard, I also ran the analysis after dichotomizing workflow and friendship at 4 (in the main analysis they were dichotomized at 3), which more precisely captures strong ties. The coefficients of regression were consistent with the

main analysis, yet the magnitude and significance level varied. It is worth noting that dichotomizing at 4 reduces the density of the workflow/friendship networks by double.

Valued, non-dichotomized analysis. While dichotomized network represents the most intuitive method to capture network overlap (e.g. the degree to which competition overlaps with workflow/friendship networks), it could be suggested that valued data can also be used to capture overlap in a weighted manner. For instance, A could have competition ties to B, C and D with tie strength 2,3, and 5, respectively while at the same time having friendship ties with tie strength 3,2,1, respectively. Hence, a weighted version of network overlap could be captured as the 2*3+3*2+5*1 = 17. Using this approach, I ran the analysis to test the effect of independent variable. The results are in the same direction of the main analysis yet insignificant. It is worth noting that the variance of this valued version of the independent variable is vastly different from that of the main analysis.

Dyadic level analysis. While the main analysis I conducted above was on the person-level (due to performance being a person-level phenomenon), the independent, moderator, and mediator variables were dyadic phenomenon and were measured on a dyadic/relational basis. Hence, it is possible to examine my hypothesis, particularly those that are concerned with predicting task and emotional support, on a dyadic level. This examination tests the hypotheses from a slightly different angle: while the person-level analysis aims to answer how competition with interdependent coworkers affects the degree of support received by the focal employee (e.g. measures are aggregated across all coworkers), the following dyadic analysis examines how competition with a specific

interdependent coworker affects the extent to which the focal employee receives support from *that* specific coworker.

To this end, I conducted dyadic level analysis using a variant of QAP (Quadratic Assignment Procedure) called MRQAP (Multiple Regression QAP) via Double-Dekker Semi-Partialling method (Dekker, Krackhardt, & Snijders, 2007). QAP and MRQAP were devised to address the fact that network data has embedded autocorrelation, and hence violates the assumption of error independence needed to conduct OLS regression (Krackhardt, 1988). While the parameter estimates are identical to their non-network counterparts, QAP and MRQAP randomly permutate a matrix's rows and columns (in this study 2,000 times) to produce autocorrelation-corrected standard error terms, and hence yield unbiased significance metrics. Later, the Double-Dekker Semi-Partialling method was created to address potential multicollinearity issues in the execution of permutation. Using this method, I aimed to further explore the dyadic relationship between competition with coworkers in the workflow/friendship network, third-party presence, and task/emotional support.

To conduct this analysis, I created "big" matrices where all participants in the study are included (394 x 394) for each type of dyadic relations. Hence, there was one big matrix that include all dyadic friendship ties, and one that include all workflow ties, and so on. Using the big friendship matrix as an example, element *ij* indicates employee *i's* friendship rating of employee *j*. If the value is a 4 out of 5, that would indicate employee *i* regards employee *j* as a "good friend". Due to the nature of dyadic data, the sample size is quite large (n = 181695~185,756 contingent on missing values).

Building on these matrices, I created the independent matrix called *competition with friendship alters* and *competition with workflow alters*. Similar to the main analysis, I first dichotomized and symmetrized competition, friendship, and workflow networks. Then I went through every pair of dyadic relation and examined whether a competition tie co-exist with a friendship/workflow tie. As a result, in the competition with friendship alters matrix, element *ij* equals 1 if there was not only a friendship tie between employee *i* and *j*, but also a competition tie, otherwise it equals 0. Similarly, the competition with workflow alters matrix, element *ij* is 1 if there was both a workflow tie between these two employees and a competition tie.

The dependent matrices are task support and emotional support networks, respectively. However, because I am interested in the amount of support received, I did not symmetrize nor dichotomize these two matrices. In these networks, element *ij* indicates the amount of support sent from *j* to *i*. This is because the item used to measure support was "to what extent did you receive task/emotional support from this person?" Using workflow ties and task support as an example, results of MRQAP regressions can broadly be interpreted as "how does person *i* and *j's* workflow relationship predict how much task support *i* receives from *j*".

Table 4 presents MRQAP results. I first regressed the task support matrix on the competition and workflow matrix. Results indicate that workflow ties are significantly related to task support ($b = 2.53$, $p < .001$), and that competition ties are also positively related to task support, yet to much smaller extent ($b = .44$, $p < .001$). I then entered the competition with workflow alters matrix, and results indicate that competition with

coworkers in the workflow matrix is negatively related to receiving task support (Model 2, b = -1.87, p <.01), providing support for Hypothesis 1a on a dyadic level.

To examine the effect of third-party ties in the workflow network, I created another matrix called *workflow mutual matrix* where element *ij* indicates the number of mutual alters (i.e. third-party) employee *i* and *j* share. For instance, if employee *i* and *j* share 4 common workflow alters, then element *ij* in the workflow mutual matrix is 4. Results from Model 3 indicate that workflow mutual has a significant and positive effect (b = .22, p <.01).

Similar to task support's regressions, I also regressed emotional support on competition and friendship matrix. Results from Model 4 indicated that while competition has a small effect on emotional support (b = .43, p <.01), friendship has a much larger effect (b = 1.79, p <.01). Next, the competition with coworkers in the friendship network matrix was entered as a predictor, and was negative and significant (b = -1.11, p <.01), hence providing support for Hypothesis 2a at the dyadic level. Then, entering the friendship mutual matrix, I found that the presence of third-party ties is positively and significantly related to emotional support (b = .09, p < .01).

So far, these analyses have used *workflow mutual* and *friendship mutual* matrices, which counts the number of mutual alters between two employees, to test the effect of third-party presence. To further bolster the robustness of this analysis, I also calculated a more specific form of third party matrix called *multiplex third party* matrices where the matrix represent the number of mutual alters between two employees on the condition that the two parties already share a multiplex tie (i.e. competition/workflow multiplex tie or competition/friendship multiplex tie). For instance, in the workflow multiplex third party

matrix, element *ij* represents the number of mutual alters between employee *i* and *j* if and only if these two parties also share both competition and workflow ties, otherwise the value is zero. Mathematically, these multiplex-based third-party matrices are a subset of the general mutual matrices and represent a more specific examination of third-party influence in the context of competition with interdependent coworkers. Given the way they are calculated (they have third party presence "baked in" competition with interdependent coworkers), a significant regression coefficient for these ties would indicate support for my interaction hypotheses.

Results indicate that in predicting task support, the conclusion is the same as the analysis with general workflow mutual matrix. In Model 4, while competition with workflow partners is negatively associated with task support (b = -1.94, p <.01), the workflow multiplex mutual matrix is positively related with task support (b = .01, p < .05), providing support for Hypothesis 3a.

When predicting emotional support, competition with a friendship partner still has a negative effect (Model, 8, b = -1.01, p <.01) whereas friendship multiplex third-party also has a negative effect (b = -.01, p <.05). This does not support hypothesis 4a. In fact, it is the opposite of which I theorized. Speculatively (later in the general discussion I discuss this finding in conjunction with findings from Study 2b), it could be that emotional support communication requires a sense of comfort and emotional vulnerability that third-party presence could potentially intrude. Empirically, note that this is the only difference between the two forms of third-party matrices, and it warrants some caution in its interpretation—due to the independent matrices' (i.e. competition with workflow alter matrix and competition with friendship alter matrix) low density and the fact that they are

conditional upon the independent matrices, the multiplex third party matrices correlate highly with the independent matrix (r =.90). Hence, in Table 3, I report general third-party matrices as the main operationalization.

Together, at the dyadic level, these regressions provide converging evidence support Hypothesis 1a and Hypothesis 2a, and provides some additional insights on the positive effect of third-party ties.

Study 1 Discussion

Study 1 examined this dissertation's full theoretical model in a real-world R&D context. While the negative main effects of competing with interdependent coworkers in the workflow and friendship networks on task support and emotional support were found, the moderation effect of third-party and the downstream consequences on performance were not supported at the individual level.

It is noteworthy that the dyadic level analysis, for the most part, mirrored the conclusions of the person-level analysis for Hypothesis 1a and Hypothesis 2a. In addition, the dyadic analysis provided evidence of main effects of third-party ties. When a focal employee and a focal alter share more mutual workflow partners, the focal employee likely receives greater task support from the focal alter. Similarly, when a focal employee and a focal alter share more mutual friends, the focal employee likely receives greater emotional support from the focal alter. Together, these findings highlight that the broader structure of relationships in which employees are embedded, can have implications for the amount of general support received from specific others beyond the effects of their direct dyadic tie with each other.

It is worth noting that there are subtle differences between general third-party and multiplex third party ties where the former represents the number of third-party ties a focal employee shares with another employee whereas the latter adds that these third party ties need to be calculated on the condition of a very specific type of multiplex ties (i.e. competition with workflow or competition with friendship ties). To an extent, the multiplex mutual matrices are a "baked in" tests of Hypothesis 3a and 4a which posits third-party presence would attenuate the negative consequences of competition with interdependent coworkers[2].

It is worth mentioning that COVID-19 limited my ability to implement my full study design, which includes a Time 2 data collection. The Time 2 survey was designed to accomplish several goals. First, it would allow me to measure my mediator and dependent variables again, hence enabling me to predict Time 2 outcomes while controlling for them at Time 1. This would also increase the psychometric properties of my measures as there would be a 4-week time lag. Secondly, Time 2 survey was designed to allow leaders to give much more comprehensive performance evaluations including employee creativity, innovation, and teamwork proficiencies, among others. In fact, the Time 2 survey was distributed and completed, yet because of COVID-19, those surveys are now locked in an office building that are temporarily inaccessible. When the lockdown is over, I fully intend to integrate Time 2 data to this data set and further test my hypotheses.

Nevertheless, Study 1 provided converging evidence supporting Hypothesis 1a and 2a. These findings supported my hypotheses that competition is not necessarily

[2] An example of a similar approach can be found at Tortoriello & Krackhardt (2010)

harmful to between-employee social exchange. In fact, in both the person-level and dyadic-level analysis, competition degree centrality is never directly negatively related to performance. Rather, it is only when competition overlaps with workflow and friendship networks that it interferes with important channels of task support and emotional support. However, due to the fact that network data is inherently endogenous, and this data set was collected using a cross-sectional design, Study 1 is limited in its ability to derive strong conclusions. Hence, I conducted Study 2, where I was able to manipulate the independent and moderating variable to further test my hypotheses.

Study 2

While Study 1 was a field study that tested my hypotheses in real-world teams in research and development context, it was cross-sectional in nature and is limited in its ability to make causal inferences. Hence, to examine these effects with a design that has provides greater internal validity, I conducted a randomized experiment as Study 2, which has two versions. Both versions were adopted from an experimental paradigm developed by Hoever, van Knippenberg, van Ginkel, & Barkema (2012). I adapted the design to increase its realism and contextual richness (the complete details of the experiment have been provided in the Appendix).

Study 2a tests the hypotheses concerning competition with workflow partners and task support, whereas Study 2b tests the hypotheses concerning competition with friendship partners and emotional support. The overall structures of these versions of the experiment was similar with differences primarily in whether competition with workflow partners was manipulated vs. competition with friendship partners. I elaborate on Study 2a first, then describe Study 2b at places where it differs from Study 2a. These

experiments do not contain a "performance" aspect, hence the dependent variable I focus on are task support and emotional support, respectively. Furthermore, different from Study 1, in Study 2 interdependence was fixed at high levels. This allowed me to capture, in a more parsimonious fashion, how task or social support vary as an interactive function of competition and third-party presence.

Study 2a

Sample and Procedure

In Study 2a, 294 participants from a large Mid-Atlantic university took part in the study. 52% are male. Participants completed the study in exchange for course credit in a core undergraduate management course. The participants were led to believe that they were working with two virtual partners on an online virtual team project but in reality, they were working alone and responding to emails sent by a confederate. By varying the task structure and the content of the email, I was able to conduct a fully crossed 2X2 experiment. The first manipulation was competition with workflow interdependent partners (*competition condition* vs. *neutral condition*) and the second manipulation was the presence (absence) of third-party (*third-party condition* vs. *neutral condition*).

When participants entered the room, they were assigned to a specific desk. Once they sat down, they were presented with a web browser with two tabs opened. The first tab contained a Qualtrics survey where instructions of the study were presented (all materials are available in the Appendix 1). They read that they were going to engage in a virtual team project with two other team members who are ostensibly located in two different satellite campuses of the University for duration of 40 minutes. They also read

that they would be able to communicate with the two virtual partners via email. At this time, they were directed to notice that in the second tab of the web browser they had access to an email that has been set up for this purpose.

The participants had to come up with solutions to improve the performance of a struggling theater called *Studio Theatre* located in Washington D.C. They read a brief introduction of the theater and its history (taken from the real-world Studio Theater), and read that in the past few years, the theater had struggled with its arts program, ticket sales and had suffered an overall reputational setback. They read that the General Manager has tasked the three of them to come up with an effective solution to the challenges the theater is facing. This experimental paradigm was adopted based on materials from Hoever et al. (2012), which was originally devised to examine how team may leverage diversity to foster team creativity. The main reason I decided to adapt this paradigm is because it had team member interdependence built in.

They were then asked to adopt the role of Event Director and were told that the other two teammates had taken on Arts Director and Finance Director, respectively. They were directed to the packet of information on their desk (see Appendix 2) and read that this information was specific to their role. They then read that because each role has its own unique set of information (such as the theater's sales number, programming, corporate sponsorship, community outreach), it is imperative that they understand the interdependent nature of their task ("it is paramount that three of you work together to coordinate your ideas so that the perspectives of those three roles are well-integrated in the group proposal. Your final team proposal needs to be comprehensive, yet cohesive and consistent across the three areas/roles").

On the next page, participants read that they were to spend the next 5 minutes digesting their information packet and then 15 minutes to come up with their own solution before exchanging it with their partners. They were told that in this span of 15 minutes, in addition to writing down their own solution in an essay entry box, they might receive emails from their partner via email. They were asked to check that email account every 3-4 minutes and respond to emails from their partners should they receive them.

In reality, a confederate followed a strict protocol to act as the virtual teammate of the participant and sent the participant a scripted email about 5 minutes into the 15-minute window. After the timer of 15 minutes expired, the experiment ended, and participants were debriefed about the true intention of the study and asked to keep the details of the study confidential.

Competition Manipulation. Before beginning to work on their own solutions for 15 minutes, participants read that after the timer expires, they would start to work with their partners to come up with a final team proposal. In the *competition condition,* participants read that when they entered the team discussion phase, a "leader" would be assigned among the three members, based on how well-written their individual response was. Participants read that a text analysis tool would evaluate their individual solution and provide them with a numeric score that determine who the leader would be. The leader, they were told, would wield significant control in the team discussion segment, including final decision authority.

In the *neutral condition*, there was no mention of leader selection; participants simply read that the experimenters would use a text analysis tool to provide feedback to their individual writing to facilitate the eventual team discussion and final proposal.

Third-party presence manipulation. Approximately five minutes into participants' 15-minute window of working on their individual response, they received an email from "Alex", ostensibly their partner from the first satellite campus. In reality, this email was sent by a trained confederate via another email set up for this study. In this email, Alex asked for task-related assistance to aid his own work. In the *third-party presence* condition, participants received the email in which Alex explicitly noted in the main text that he was copying "Josh", the third team member. Also, in the CC section of the email, participants saw that the email was copied to a person named Josh. Specifically, in the *third-party presence* condition, participants read.

> *Hello,*
>
> *Hey this is Alex, from Shady Grove. How is it going**? I also copied Josh here (who's the Artistic Director), so he can see our conversation, too.***
>
> *I'm doing the Finance Director part and I just took a look at my material, which I think is a bit different from yours. I was struggling with coming up with a sound financial plan, which is my responsibility, so I was wondering if you could share two things from your end with me?*
>
> *From my end, it looks like our beverage offering has been losing quite a bit of money. Can you tell me what type of beverage menu are you planning to offer?*
>
> *Also we are in dire need of local sponsorship, can you share one or two quick thoughts from the event side for us to perhaps get some new business sponsors?*
>
> *This will help me in doing my part of the task better.*
>
> *Thanks!*
>
> *Alex*

In the *third-party absence condition*, participant received the exact same email but without Alex mentioning Josh (the boldened sentence above), nor was the email copied to Josh.

Measurement

Manipulation check. Participants responded to a three-item competition manipulation scale, of which items include "I read that my proposal will be scored and 'stacked' against those of my teammates", "I had incentives to try to create better proposal than my teammates", and "If I outperform my teammates in coming up with individual proposals, I would have been given the 'final say' in group discussion" (1 = *strongly disagree*, 5 = *strongly agree*; Cronbach's alpha = .81). Participants in the *competition condition* scored significantly higher than those in the *neutral condition* ($M_{Competition}$ = 3.32, SD = .08; $M_{neutral}$ = 2.19, SD = .08; F (1, 284) = 82.95, $p < .01$), indicating that the manipulation was effective.

In addition to competition manipulation check, participants also responded to a third-party presence question "if you received an email, was the third teammate CC's or copied on the email?" (0 = *No*, 1 = *Yes*). 92% of participants in the *third-party condition* reported an "Yes", indicating the manipulation was effective.

Task support. Out of the 294 participants, 181 participants responded to the email my confederate sent (61.6%). Two independent research assistants blind to the hypotheses coded all emails responses written by participants. Sample responses can be found in the Appendix.

To establish proper coding protocol, I first asked the two independent coders to code 25 randomly selected emails, which had considerably low agreement. I then facilitated discussion of emails where the coders had particularly low agreement and help established a benchmark. The two coders then coded another round of 100 emails, which

had acceptable agreement. Hence, I assigned all remaining emails to the two coders to finish coding those responses.

Task support was assessed by a 5-item scale adapted from the Inventory of Socially Supportive Behavior (Barrera & Baca, 1990). Sample items include "The send of this email shared information helpful to the recipient", "The sender gave helpful advice from his/her perspective", and "The sender provided information/resources that facilitate recipient's progress". The two coders reached adequate agreement ($R_{wg\ mean}$ = .89, $R_{wg\ median}$ = .92), hence I took the mean of their ratings as the dependent variable.

Since email non-responses are indicative of providing no task support whatsoever. Hence, participants who did not respond to the email were coded as 1, the lowest possible level of task support. It is worth noting that a sub-sample analysis with only participants who responded to emails do not yield different results.

In addition to RA's coding, I also calculated the *length of email* composed by participants. The length of email could be indicative of how engaged and invested participants were in providing task support. Participants who did not respond to emails had 0 as the length of email.

Results

As mentioned, in this section, I report results with the full sample (including those who did not respond to emails) where task support the dependent variables is set as one (the lowest value on the scale). Using the sub-sample of participants who responded to emails do not yield qualitatively different results.

------insert Table 4 about here------

Table 4 reports the descriptive statistics and correlations among key variables. To test Hypothesis 1a, which posits that competition with workflow interdependent coworkers has a negative effect on the focal employee receiving task support, I first conducted ANOVA to examine the mean difference in task support between the *competition condition* and the *neutral condition*. Results indicated that there was a small difference where participants in the competition condition sent less task-supportive emails ($M_{competition}$ = 1.54, *SD* = .06) than those in the neutral condition ($M_{neutral}$ = 1.57, *SD* = .06), yet the difference was not significant (*F* (1, 284) = .19, *n.s.*). Hence, Hypothesis 1a was not supported. Hypothesis 3a suggests that the presence of third party (i.e. Josh being copied on the email) would attenuate the negative effects of competition. To test this hypothesis, I conducted 2-way ANOVA to predict task support. Results indicated that neither the presence of a third-party (*F* (1, 284) = .36, *n.s.*) nor the interaction between competition and third-party (*F* (1, 284) = 2.04, *n.s.*) was significant. Hence, Hypothesis 3a was not supported.

Additionally, email length was not significantly predicted by competition (*F* (1, 284) = .08, *n.s.*). However, third-party did have a significant main effect (*F* (1, 284) =5.89, $p < .05$). Participants in the third-party condition wrote significantly longer email ($M_{third\text{-}party}$ =343.06, *SD* = 27.04; $M_{neutral}$ = 253.03, *SD* = 25.40), indicating that third-party presence did increase participants' engagement with their virtual partners. Hence, there was evidence that the presence of third-party increased participants' attention towards writing email responses to their virtual partners.

Study 2b

Sample and Procedure

In Study 2b, 400 participants took part in the study. 57% are male, and the average age is 19.8 years. Out of the 400 participants, 284 wrote an email response to the confederate. Similar to Study 2a, here I report the full sample results. Results using the sub-sample of only email responders do not yield qualitatively different results.

The structure of the experiment was similar to Study 2a, but with a few changes to emphasize friendship ties between the participants and their virtual partners and accommodate the provision of emotional support.

Competition Manipulation. While Study 2a emphasized the workflow interdependence between team members, Study 2b asked participants to imagine close personal relationship ties among members. Specifically, participants read "The three of you are personally very close to each other. That is, you consider the other two to be good friends and love socially interacting with them. You frequently meet them outside work for informal get-togethers." The competition aspect of the manipulation was the same as Study 2a (i.e. leader selection based on individual solution scoring).

Third-party presence manipulation. Participants also received an email approximately 5 minutes into the 15-minunte window of individual work. In the *third-party presence condition,* participants read an email about soliciting emotional assistance, which was ostensibly copied to Josh. Specifically, participants read:

> *Hello,*
>
> *Hey this is Alex, from Shady Grove. How is it going**? I also copied Josh here (who's the Artistic Director), so he can see our conversation, too.** How is it going? I'm doing the Finance Director part and I just took a look at my material, which is a bit different from yours I think. And to be honest, I am so OVERWHELMED by the sheer amount of information in this thing…I don't know where to start! I don't know if I can do it..*

I have financial breakdown of sales, by groups, by age, I also have cost breakdown of production, how much it cost between in-house production vs. external production…this is SO MUCH and we have so little time…Do you think we can do this?

Thanks!

Alex

In the *third-party absence condition*, participant read the same email, but without the boldened sentence and without the email being copied to Josh.

Measurement

The measurement of Study 2b was the same as that of Study 2a with the exception of the dependent variable *emotional support,* which was measured by a 5-item scale adipate from Methot, Lepine, Podsakoff, & Christian (2016). Sample items include "The sender provided encouragement and emotional support", "The sender's message can boost the recipient's spirit", and "The sender empathized with the recipient". The two coders reached adequate agreement ($R_{wg\ mean}$ = .92, $R_{wg\ median}$ = .94), hence I took the mean as the dependent variable.

Results

Table 5 presents the descriptive statistics and the correlations among variables. First, similar to Study 2a, I conducted manipulation check analysis. Participants in the *competition condition* score significantly higher on the 3-item manipulation check scale than those in the *neutral* condition ($M_{competition}$ = 3.42= 3.42*, SD* = .08; $M_{neutral}$ = 2.34, *SD* = .08., $p < .01$), indicating that the manipulation was effective. 98% of participants in the *third-party condition* reported having received the email with Josh being copied on it, indicating the manipulation worked as intended.

------insert Table 5 about here------

Hypothesis 2a posits that competition with coworkers who are one's friends would negatively impact the amount of emotional support one receives. ANOVA results showed that participants in the competition scale did not write significantly less emotional supportive emails than those in the neutral condition ($M_{compeittion}$ = 1.54 , *SD* = .06 ; $M_{netural}$ = 1.62, *SD* = .06; *n.s.*), hence did not support Hypothesis 2a. Hypothesis 4a posits that the negative relationship between competition and emotional support would be attenuated if there was third-party presence. Two-way ANOVA results did not find support for the interaction (F (1, 397) = 2.45, *n.s.*). However, the analysis did find that third-party presence had a significant and negative main effect on emotional support (F (1, 397) = 7.82, p <.05). Surprisingly, participants in the third-party condition wrote less emotionally supportive emails than those in the neutral condition ($M_{third\text{-}party}$ = 1.47*, SD* = .06; $M_{netural}$ = 1.69, *SD* = .06; p < .05).

Unlike Study 2a, Study 2b there were no significant main or interactive effects of either condition on email length.

STUDY 2 DISCUSSION

Study 2 was an experiment where the independent variables and the moderator were manipulated. The intent of Study 2 was to address Study 1's shortcomings, particularly its internal validity. However, Study 2 did not find any supporting evidences for my hypotheses. It is possible that in my sample, constituted of undergraduate students, there is likely a general sense of comradery, which could have hindered the perceptions of zero-sum gains associated with competition.

Moreover, it was interesting that the presence of third-party not only did not reduce the negative effect of competition, it actually had a main negative effect on emotional support itself. It is possible that having a third-party monitoring the communication between two people might have instilled awkwardness in sharing emotionally sensitive messages and inadvertently discouraged the communication of emotional support (e.g. venting, complaint, encouragement).

Chapter 4: General Discussion

Competition among coworkers is prevalent in organization and this dissertation aims to challenge the existing understanding of the relationship between interpersonal competition and resource exchanges at work. Specifically, prior literature has suggested competition would unconditionally harm performance by encouraging actors to engage in uncooperative actions such as withholding of resources and emotional apathy. This dissertation posits that this extant position overlooks the fact that actors in organizations have unique networks of interdependencies. These interdependencies, whether task-related or socioemotional, supply the focal actors with important resources needed for performance. More importantly, this dissertation suggests that competition, hinders social exchange to the extent it interferes with existing interdependencies. In other words, it is the extent to which competition overlaps with workflow and friendship ties that predicts the degree of support the focal employee receives. Additionally, this dissertation aims to highlight the role played by third parties in regulating the effects of competition. I suggested that third parties, or mutual partners between actors, have both the motivation

and the capability to effectively regulate the uncooperative actions associated with competition, hence allowing critical resource exchange to continue.

Summary of the findings

I conducted two studies to test these hypotheses. Table 6 presents a summary of findings and whether they supported hypotheses. Study 1 was a cross-sectional field study in which participants were highly educated research scientists. Results from this study supported the main negative effects of competition with interdependent coworkers in the workflow and friendship networks (Hypothesis 1a and 2a). While controlling for the number of competitors and interdependent coworkers (e.g. workflow partners or friends), the more one's competition network "overlapped" with workflow/friendship network, the more it interfered with the focal employee acquiring task/emotional support. Additionally, dyadic analysis using MRQAP also provided supportive evidence with regard to the main negative effects of competing with one's interdependent coworkers. Specifically, when a focal employee and a focal alter shared competition and workflow/friendship ties, the focal employee was less likely to receive task/emotional support from the focal alter. Hence, combining evidence from person-level and dyad-level analysis, Study 1 provided converging support for Hypothesis 1a and 2a.

In Study 2, which was comprised of two experiments, participants engaged with a virtual team task where they were asked by a confederate to provide task/emotional support via email. However, neither experiment provided supporting evidence for the main effect hypotheses. In the Study 2 study discussion, I briefly discussed reasons for this lack of effects.

Hypothesis 3a and 4a posited that the presence of third-party in workflow/friendship network would attenuate the negative relationships proposed in Hypothesis 1a and 2a. In both Study 1 and Study 2, the moderation effects were not supported. However, several models found support that third-party ties having a main effect. Specifically, in the task domain, Study 1's person-level analysis (Model 3, Table 2) found third-party ties having a main positive effect on task support. Similarly, dyadic analysis (Model 3, Table 3) found support that the number of mutual workflow partners between a focal employee and a focal alter was positively related to the focal employee receiving task support from the focal alter. In Study 2a, while task support was not significantly predicted by third party presence, it was found that participants in the third-party condition wrote longer emails to the confederate. Together, these findings provide some evidence (albeit weak) that the presence of third parties in the workflow domain has a positive main effect on task support, although the interaction was not supported.

In the emotional domain, there were a few instances where third-party presence had main effects, yet the pattern was more inconsistent. In Study 1's dyadic level analysis, one particular operationalization of third party (i.e. multiplex-based third party, see pg. 31) had a main negative effect on emotional support, although this operationalization should be viewed with caution as it was very sparse. In Study 2b, participants in the third-party condition actually wrote emails that were less emotionally supportive than those in the neutral condition. While these two findings are not consistent enough to derive strong conclusion, I speculate that third party presence may not has the same effect in the emotional domain as it did in the task domain. Prior literature has suggested that exchange of emotional support is strongly affected by perception of

warmth and empathy among involving parties, and it requires participants to be in a state of comfort where expressing vulnerability and authenticity are welcomed (Hill, 1991). To this end, I suspect that the presence of a third party (or third parties) may have a counterproductive effect because it evokes social norms that prevent people from feeling comfortable in conveying emotionally sensitive messages.

Hypothesis 1b, 2b, 3b and 4b all had to do with the mediation effect from the independent variables to performance. These hypotheses were only examined in Study 1's person-level analysis, and none of the findings provided support. Examining the raw correlation between task/emotional support with performance, it was surprising that the correlations were so small (correlation between performance and task support r = ..09, correlation between performance and emotional support r = .04), as prior work has shown that support from peers in general should be facilitative for one's performance (Duffy et al., 2002). It is worth keeping in mind that these are out-degree centrality-based measures since the items were "how frequently does this person give you task/emotional support?". On the other hand, correlation between the in-degree centrality-based measures of task/emotional support were much higher and significant (correlation between performance and task support in-degree centrality r = .18. p <.05; correlation between performance and emotional support in-degree centrality r = .11, p <.05). This idea of "support-giving" has a positive relationship with performance has recently been suggested by scholars studying advice-giving and receiving (Li, Li, Guo, Li, & Harris, 2018) where the advice giver's performance is boosted by sending advice because it spurs diverse-thinking and cognitive flexibility. In this sense, it could be possible that task/emotional support giving could energize the giver, hence boosting performance. Or

perhaps there is a more parsimonious alternative explanation where those who receive support are lower performers to begin with and support givers are higher performers to begin with. It is worth mentioning that this limitation could be at least partially addressed with Time 2 data in Study 1 because it would have allowed for an analysis where I could have controlled for Time 1 outcomes.

Theoretical Implications

In examining these effects, this dissertation makes several contributions to the literature. First, as prior literature has assumed that competition incites negative social consequences such as envy, distrust, unethical behavior, and general uncooperative behaviors in an "uniform" fashion (where it affects every employee similarly), I attempted to to present a more nuanced view—competition is not necessarily a detriment to resource exchange; It becomes more pronounced as employee compete with coworkers they closely depend upon. In general, findings from Study 1 provides converging evidence that this was the case. Holding the size of one's competition and interdependent networks constant, the more competition overlapped with interdependence networks, the more its detrimental effects on support become pronounced. In the team and network literature, this is relevant to the discussion of *configuration* of team phenomenon. For instance, Park, Mathieu & Grosser (2018) proposed a theoretical model that describes team conflict, traditionally a uniform team phenomenon, as having multiple possible configurations of dyadic conflict ties between team members. This perspective takes advantage of dyadic conceptualization of phenomenon (e.g. attitude, behavior, perception) to offer a richer and in-depth approach to studying teams. In this sense, this dissertation aims to shift the study of competition to a more nuanced perspective by

demonstrating the importance of considering the role of competition network overlapping with workflow/friendship networks.

My second contribution lies in my attempt to integrate a social embeddness view with competition by highlighting the role played by third-party ties. Context can be an important factor in regulating the effects of competition, particularly in dampening the escalation of uncooperative behavior and uphold productive social exchange (Halevy & Halali, 2015). However, empirical evidence across my different studies yielded inconsistent results. I did not find support for the interaction effects in Study 1's person-level analysis, with the noteworthy finding that in the task domain, third-party presence had a positive main effect. Furthermore, in the task domain, dyadic level analysis provided some results supporting the moderation hypothesis in the task domain using multiplex-based third-party ties. In the socio-emotional domain, there was some weak evidence from Study 1's dyadic analysis (using multiplex-based third-party) and Study 2b to indicate that third-party ties actually impede emotional support. While these findings offer only indicative evidence, they point to the possibility that third-party ties' positive effects demonstrated by prior literature in the task domain (Halevy & Halali, 2015; Krackhardt, 1998; Nakashima et al., 2017; Tortoriello & Krackhardt, 2010) might not fully translate to the emotional domain, where communication requires the perception of comfort, privacy and the ability to freely express one's emotional vulnerability. While these results are indeed interesting, however, as mentioned in Study 1's discussion, the statistically multiplex-based third-party matrices were likely too sparse in my data and may have multicollinearity issues with the independent matrices.

Limitations and Directions for Future Research

There are several noteworthy limitations in this dissertation that I aim to address in the future. First, as mentioned in Study 1's discussion section, due to COVID-19, the Time 2 survey which was designed to enable leaders to give considerably extensive performance evaluations and allow time-lagged independent variables, are temporarily inaccessible. Hence, the natural first step of future direction is to regain access to Time 2 data set and re-conduct the analysis with the full dataset. Time 2 survey also was designed to capture more mediators and alternative mechanisms that would allow me to conduct a more comprehensive analysis.

Second, there are several improvements that could be made to Study 2's experimental paradigm. First, I speculate that the nature of student interactions may have limited the potency of the competition manipulation. Hence, it might be productive to re-conduct Study 2 with a working population. Second, there are several ways to further improve the realism associated with this virtual exercise. For instance, without changing the broad structure of the experiment, a cash incentive could be added to strengthen the competition manipulation. For example, in addition to the leadership selection aspect, the manipulation could be strengthened by further stipulating that should the participant be chosen as the leader, he/she will be entered into a lottery and has a chance of winning $200. Additionally, it is worth mentioning that realism might also be a double-edge sword in an experimental design like this. While the design features many pieces of information that increases the realism associated with Studio Theater, the sheer volume of new information might also just be too overwhelming and anxiety inducing for participants to digest and render them unable to respond to confederate's email, potentially reducing variances in the dependent variable.

Manipulation of third-party may also be improved. For instance, in the current design, the third-party presence is simply manipulated by whether or not the third party was copied on the emails. It is possible that this did not provide a strong or realistic operationalization of such third parties. For example, the third party "Josh" does not actually engage in meaningful ways with the participant, which could have limited the realism associated with this manipulation. In addressing this, for example, in Study 2a, more information regarding the third-party's work-related interdependencies with both parties could be provided as part of the setup. Similarly, a round of virtual self-introduction email communications could be added before the participants engage in writing their individual proposals. For instance, as soon as Alex and Josh were introduced, the confederate could send out pre-composed introduction email where Alex and Josh sent out fictitious self-introduction as an "ice-breaker" and invite the participants to introduce him/herself. I plan on re-running my lab experiments with such improved manipulations in the future.

Also worth mentioning is how third-party presence operated differently between Study 1 and Study 2. In Study 1, third-party presence was captured via dyadic ties reporting on a frequency measures, whereas in Study 2 third-party presence was manipulated by copying a third team member on the email. Theoretically, there are a number of mechanisms through which third-party presence facilitates cooperation, which can be broadly seen as either active or passive (Granovetter, 1985). Active mechanisms include third-party intervention, peacemaking, punishing uncooperative behaviors whereas passive mechanisms mainly refer to the focal employee cooperating because he/she anticipates third-party observation and potential negative consequences. In Study

1, the method was designed in such as way that both pathways could be captured. In fact, the Time 2 survey data includes dyadic measures (e.g. monitoring, mediation, resource provision) to specifically examine these pathways. On the other hand, Study 2's design where the participants are aware of third-party observation only allows for the passive pathway to be in effect. Hence, it is limited in its ability to examine the full third-party effect.

Future work could also explore the possibility that third-party presence may work differently in the task versus emotional domains. Most work to date has mainly examined third-party presence's effect in regulating cooperative task or information exchange (Halevy & Halali, 2015; Krackhardt, 1998; Sosa, Gargiulo, & Rowles, 2015). However, some preliminary evidence in Study 1 and Study 2b suggests that exchange of emotional support may not benefit from third-party presence in the same way. It is possible that because emotionally laden communications require a comfort of privacy and a perception of warmth and empathy, the presence of third-party could actually become an obstacle, rather than a facilitator of emotional support. Exploring the mechanisms underlying such effects could be productive areas for future research.

While cultural differences between East Asian collectivism and Western individualism (Triandis, 1995) is not a focal interest of this dissertation, the fact that competition has been shown to have cultural variances warrants mentioning because the two studies are conducted in China (a collectivist society) and the United States (an individualistic society), respectively. In this regard, in collectivists societies, the self is defined by group values and goals, and ultimately by one's interdependent relationships with others whereas in individualistic societies the self is defined more autonomously and

independent of the goals and values of others. Hence, it has been argued and showed that competitive behavior is discouraged in collectivistic societies (Keller & Loewenstein, 2011; Triandis, Bontempo, Villareal, Asai, & Lucca, 1988). Additionally, because interdependent relationships are more important to collectivistic society, it is probably that the presence of third-party could be more effective in regulating competition in collectivistic environments. In this sense, the fact that I found the main effect of competition on task/emotional support in Study 1 (conducted in Mainland, China) is particularly interesting as collectivism supposedly is working in the other direction preventing competition from having negative effects.

Related to the above discussion, it is also possible that the competition manipulation in Study 2 was not as potent as I hoped due to student engagement. Specifically, it is likely that 1) students, compared to the working population, are not as responsive to competition as they have yet to experience hierarchical work organizations, 2) they also may not aspire to leadership positions (the central element in the competition manipulation) as much as a working population, and 3) they may share a sense of general comradery and collaborative attitudes as students often work together on class assignments.

Additionally, it is worth noting that in this dissertation, especially in the theoretical formulation section, it was assumed that competition works similarly in the task and emotional domain. This assumption was made because I was mainly interested in the amount of task support/emotional support accessible to the focal employee. However, reasonable challenges to this premise ca be made. For instance, while task support such as information and knowledge are most helpful when they are non-

redundant to the focal employee (i.e. beyond what the focal employee already knows), emotional support tend to be more effective when it affirms values and experiences the focal employee already has (Kinias & Sim, 2016). Hence, it is then possible that the most beneficial configuration for a focal employee is to have many task support partners that send non-redundant information and knowledge (Lazer & Friedman, 2007), and a few yet strong ties to emotional support partners (Podolny & Baron, 1997). In this sense, future work would benefit from exploring how task support and emotional support network may have different "optimal" configurations and how competition interferes with them in different manners.

In addition, while I examined third-parties as potential regulators of the effects of competition, it is possible that other network properties may play an alleviating role as well. For example, a focal person's centrality in the friendship network might offer alternative sources of task or emotional support that could buffer the effects of competition with interdependent coworkers. Similarly, global and local network structures such as density of one's network or membership in cohesive cliques might also play a role in alleviating the potential negative effects of competition. Examining these possibilities would offer interesting avenues for future research.

Finally, it would be fruitful to also examine the effects of competition with interdependent coworkers on other outcomes such as creativity or voice behaviors. For example, given that creativity benefits from social interactions and interpersonal exchange of knowledge resources, it would be interesting to study if and how competition with interdependent others may affect individuals' ideation efforts. On the other hand, given the nature of voice as a challenging behavior, it is possible that competition with

one's task partners may elevate such speaking up behaviors in teams in an effort to outperform one another.

Conclusion

In the era of interconnected work, employees routinely rely on their coworkers to perform at a high level. Through workflow ties, they are able to acquire important task-related support such as novel information, technical knowledge, and even physical assistance. Similarly, through friendship ties, they can receive emotional support—encouragement, consolation, and maintain their emotional well-being.

At the same time, however, competition between coworkers is increasingly becoming an organizational reality. Hence, employees have to deal with the challenge where they have to compete with coworkers they rely on, which this dissertation aims to unpack. Conducting a field survey study in a Chinese mainland institute and two controlled experiments in a large university, I examined how competition could interferes with employee's interdependencies and their ability to acquire critical work resources. I also highlighted the role played by third parties and the possibility that they could regulate competition's negative implications. Evidence from these two studies provide some, yet not completely converging support to my hypotheses.

TABLE 1 STUDY 1 DESCRIPTIVE AND CORRELATION STATISTICS

		M	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	Employee gender[a]	0.32	0.50																					
2	Employee tenure	3.73	3.58	-0.02																				
3	Employee education	3.28	0.82	-0.07	0.08																			
4	Task complexity	3.40	0.67	-0.03	.17**	.16**	*.70*																	
5	Task interdependence	3.79	0.63	0.03	0.07	0.06	.13*	*.73*																
6	Leader-Member Exchange	3.55	0.57	-0.01	0.09	-0.02	0.03	.33**	*.87*															
7	Competition network degree centrality	0.66	1.28	-0.04	0.01	-0.09	-0.01	-0.03	-.14**															
8	Workflow network degree centrality	7.18	4.03	0.01	.16**	0.02	0.07	.15**	0.10	.29**														
9	Friendship network degree centrality	5.04	3.84	0.05	.23**	0.04	.11*	.17**	0.06	.29**	.69**													
10	Team size	13.80	6.34	0.03	-0.04	0.01	0.06	-0.03	-0.02	0.07	.45**	.42**												
11	Team external dependency	4.02	0.76	-0.05	.18**	.13*	0.10	0.01	-0.07	0.01	-0.09	-.11*	-0.03											
12	Team lifespan	3.71	0.82	-.16**	.18**	-0.08	0.03	-0.04	0.02	0.07	0.07	-0.02	.11*	.37**										
13	Leader gender[a]	0.13	0.34	0.10	0.06	0.01	0.03	-0.05	-0.01	-0.03	-0.03	0.00	-.16**	0.01	-.31**									
14	Leader tenure	12.47	6.67	-0.01	.29**	.17**	0.01	0.02	0.09	-0.10	-0.09	-0.04	-.13**	.50**	.23**	0.05								
15	Competition with workflow	0.49	1.04	-0.01	0.07	-0.03	-0.03	0.02	-0.09	.90**	.32**	.38**	0.08	0.04	0.06	-0.03	-0.05							
16	Competition with friendship	0.58	1.17	-0.02	0.03	-.11*	-0.02	-0.01	-.11*	.97**	.31**	.31**	0.05	0.01	0.07	-0.02	-0.09	.93**						
17	Presence of third-party in workflow network	23.75	29.04	0.03	.23**	0.03	0.09	.14**	0.03	.35**	.68**	.94**	.40**	-0.09	0.00	-0.04	-0.02	.45**	.37**					
18	Presence of third-party in Friendship network	46.31	45.73	-0.02	.121*	0.00	0.03	.12*	0.06	.33**	.94**	.64**	.42**	-0.06	.11*	-0.08	-0.08	.37**	.35**	.69**				
19	Task support	22.56	15.00	0.00	0.03	0.00	0.01	.16**	.18**	.23**	.67**	.75**	.55**	-.13*	0.04	-0.05	-0.06	.25**	.23**	.64**	.60**			
20	Emotional support	16.22	13.62	0.04	-0.04	-0.01	-0.01	.16**	.22**	.20**	.61**	.61**	.43**	-0.09	0.07	-0.03	-0.06	.19**	.19**	.50**	.55**	.86**		
21	Performance	3.20	0.78	0.06	.36**	.22**	.15**	0.10	.13**	-0.06	.14**	.19**	0.02	.14**	-0.01	-0.03	.14**	0.00	-0.05	.19**	0.08	0.09	0.04	*.92*

Note: employee *n = 355*, team leader *n =39*. Diagonal italicized texts indicate alpha reliability. [a] 0=female; 1=male;

TABLE 2 STUDY 1 RESULTS

	Task Support			Emotional Support		
	Model 1	*Model 2*	*Model 3*	*Model 4*	*Model 5*	*Model 6*
Control variables						
Employee gender[a]	-.74(.63)	-.59(.66)	-.58(.46)	1.20(.59)*	1.43(.61)*	1.42(.62)*
Employee tenure	-.29(.10)**	-.28(.10)**	.31(.11)*	-.47(.19)*	-.45(.17)**	-.45(.18)*
Employee education	-.13(.53)	.07(.57)	.12(.52)	-.03 (.62)	-.06(.61)	-.02(.64)
Task complexity	-1.65(.59)**	-1.88(.62)**	-1.84(.50)*	-.12 (.93)	-.36(.93)	-1.32(.92)
Task interdependence	1.28(.87)	1.32(.88)	1.72(.86)*	1.43 (1.0)	1.54(1.01)	1.59(1.02)
Leader-Member Exchange	4.26(8.3)*	4.23(.77)**	3.00(.64)*	4.46(.72)*	4.44(.65)**	4.42(.64)*
Competition network degree centrality	.66(.27)*	2.79(.77)**	2.32(.85)*	.64(.49)	4.63(1.01)**	4.61(.91)*
Workflow/friendship network degree centrality	1.68(.19)**	1.82(.18)**	1.60(.16)*	1.92(.21)*	2.03(.19)**	1.83(.46)*
Team size	1.50(.13)**	1.50(.13)	1.50(.13)*	1.00(.11)*	1.00(.11)	.99(.11)
Team external dependency	-1.57(1.00)	-1.57(.99)	-1.55(1.00)	-1.31 (1.04)	-1.30(1.03)	-1.34(1.04)
Team lifespan	.19(.52)	.20(.52)	.20(.50)	1.14(.49)*	1.15(.49)	1.51(.49)
Leader gender[a]	.76(1.17)	.74(1.17)	.73 (1.15)	1.36(1.25)	1.33(1.25)	1.39(1.25)
Leader tenure	.15(.12)	.15(.12)	.15(.12)	.05(.11)	.05(.11)	.05(.11)
Independent variable						
Competition with workflow/friendship		-2.91(.92)**	-2.85(1.07)**		-4.53(1.27)**	-4.64(1.21)**
Moderator						
Presence of Third-Party			.11(.02)**			.02(.04)
Interaction terms						
Interaction term			.01 (.02)			.01(.01)
Mediator						
Task Support						
Emotional Support						
R^2	.46	.48	.49	.35	.36	.36
ΔR		.02	.01		.01	.00

Note: In Model 1,2,3,7,8, "Workflow/friendship" refers to workflow whereas in Model 2,4,6,9,10, it refers to friendship. [a] 0=female; 1=male;

TABLE 2 CONT.

	Performance			
	Model 7	*Model 8*	*Model 9*	*Model 10*
Control variables				
Employee gender[a]	.07(.08)	.08(.08)	.07(.08)	.08(.08)
Employee tenure	.06(.02)*	.06(.02)*	.06(.02)	.06(.02)
Employee education	.12(.06)	.13(.06)	.13(.06)	.13(.06)
Task complexity	.09(.05)*	.09(.05)*	.09(.05)	.08(.05)
Task interdependence	.06(.05)	.05(.05)	.06(.05)	.06(.05)
Leader-Member Exchange	.11(.08)	.09(.09)	.09(.08)	.09(.08)
Competition network degree centrality	-.01(.03)	.02(.05)	-.01(.03)	.04(.06)
Workflow/friendship network degree centrality	.03(.01)*	.02(.01)	.03(.02)	.04(.01)
Team size	.00(.01)	.00(.01)	.00(.01)	.01(.01)
Team external dependency	.16(.13)	.16(.13)	.14(.12)	.14(.12)
Team lifespan	-.11(.08)	-.11(.08)	-.10(.08)	-.09(.08)
Leader gender[a]	-.23(.16)	-.23(.16)	-.22(.18)	-.22(.18)
Leader tenure	.01(.02)	.01(.02)	.01(.01)	.01(.02)
Independent variable				
Competition with workflow/friendship coworkers		-.05(.07)		-.07(.06)
Moderator				
Presence of Third-Party				
Interaction terms				
Interaction term				
Mediator				
Task Support		.01(.01)		
Emotional Support				-.002(.00)
R^2	.18	.18	.19	.19
ΔR		.00		.01

Note: In Model 1,2,3,7,8, "Workflow/friendship" refers to workflow whereas in Model 2,4,6,9,10, it refers to friendship. [a] 0=female; 1=male;

TABLE 3 STUDY 1 MRQAP RESUTLS

	Task Support				Emotional Support			
	Model 1	*Model 2*	*Model 3*	*Model 4*	*Model 5*	*Model 6*	*Model 7*	*Model 8*
Control variables								
Workflow matrix	2.53(.01)**	2.47(.01)**	.99(.01)**	2.47(.01)**				
Competition matrix	.44(.01)**	1.92(.02)**	1.22(.02)**	1.91(.03)**	.43(.01)**	1.34(.03)**	.97(.03)**	1.34(.03)**
Friendship matrix					1.79(.01)**	1.76(.01)**	1.04(01)**	1.76 (.04)*
Predictor variable								
Competition with workflow alter matrix		-1.87(.02)**	-1.30(.03)**	-1.94(.04)**				
Competition with friendship alter matrix						-1.11(.03)**	-.77(.03)**	-1.01(.03)*
Presence of third-party ties in the workflow network			.22(.01)**					
Presence of third-party ties in the friendship network							.09(.01)**	
Multiplex-based third-party workflow matrix				.01(.02)*				
Multiplex-based third-party friendship matrix								-.01(.04)*

Note: n = approximately 185,708 (slightly different sample sizes across models due to missing data).

TABLE 4 STUDY 2A DESCRIPTIVE STATISTICS

	Mean	SD	1	2	3	4	5
Competition condition dummy	0.50	0.50					
Third-Party dummy	0.47	0.50	-0.01				
Gender[a]	0.48	0.51	0.03	-0.02			
Email length	295.87	315.78	-0.01	.143*	-0.01		
Task support	1.55	0.74	-0.02	0.04	-0.04	.82**	

Note: n = 294;[a] female = 0, male =1; *p < .05, **p <.01.

TABLE 5 STUDY 2B DESCRIPTIVE STATISTICS

	Mean	SD	1	2	3	4	5
Competition condition dummy	0.50	0.50					
Third-Party dummy	0.01	0.01	-0.01				
Gender [a]	0.57	0.51	0.02	0.00			
Email length	168.02	164.09	0.07	-0.06	-.13*		
Emotional support	1.58	0.81	-0.04	-0.14*	-.11*	.56**	

Note: n = 400 ;[a] female = 0, male =1; *p < .05, **p <.01.

TABLE 6 SUMMARY OF FINDINGS ACROSS STUDY

Hypothesis	Study 1		Study 2	
	Person level	Dyadic level	Study 2a	Study 2b
Hypothesis 1a: Competition with interdependent coworkers in the workflow network is negatively related to task support received by the employee	Supported	Supported	Unsupported	
Hypothesis 1b: Task support mediates the negative relationship between competition with interdependent coworkers in the workflow network and task performance of the employee	Unsupported			
Hypothesis 2b: Competition with coworkers in the friendship network is negatively related to social support received by the employee.	Supported	Supported		Unsupported
Hypothesis 2b: Social support mediates the negative relationship between competition with coworkers in the friendship network and task performance of the employee.	Unsupported	Unsupported		
Hypothesis 3a: The negative relationship between competition with interdependent coworkers in the workflow network and task support is weakened in the presence of common third-party coworkers in the work-flow network.	Presence of third-party had positive main effect	Supported with multiplex-based third-party ties	Presence of Third Party had positive effect on email length	
Hypothesis 3b: The negative mediated effect of competition with interdependent coworkers in the workflow network and task performance (via task support) is weakened in the presence of common third-party coworkers in the work-flow network	Unsupported			

Hypothesis 4a: The negative relationship between competition with coworkers in the friendship network and social support is weakened in the presence of common third-party coworkers in the friendship network	Unsupported	Presence of third-party had positive main effect		Presence of third-party had negative main effect
Hypothesis 4b: The negative mediated effect of competition with coworkers in the friendship network and task performance (via social support) is weakened in the presence of common third-party coworkers in the friendship network.	Unsupported			

FIGURE 1 THEORITICAL MODEL

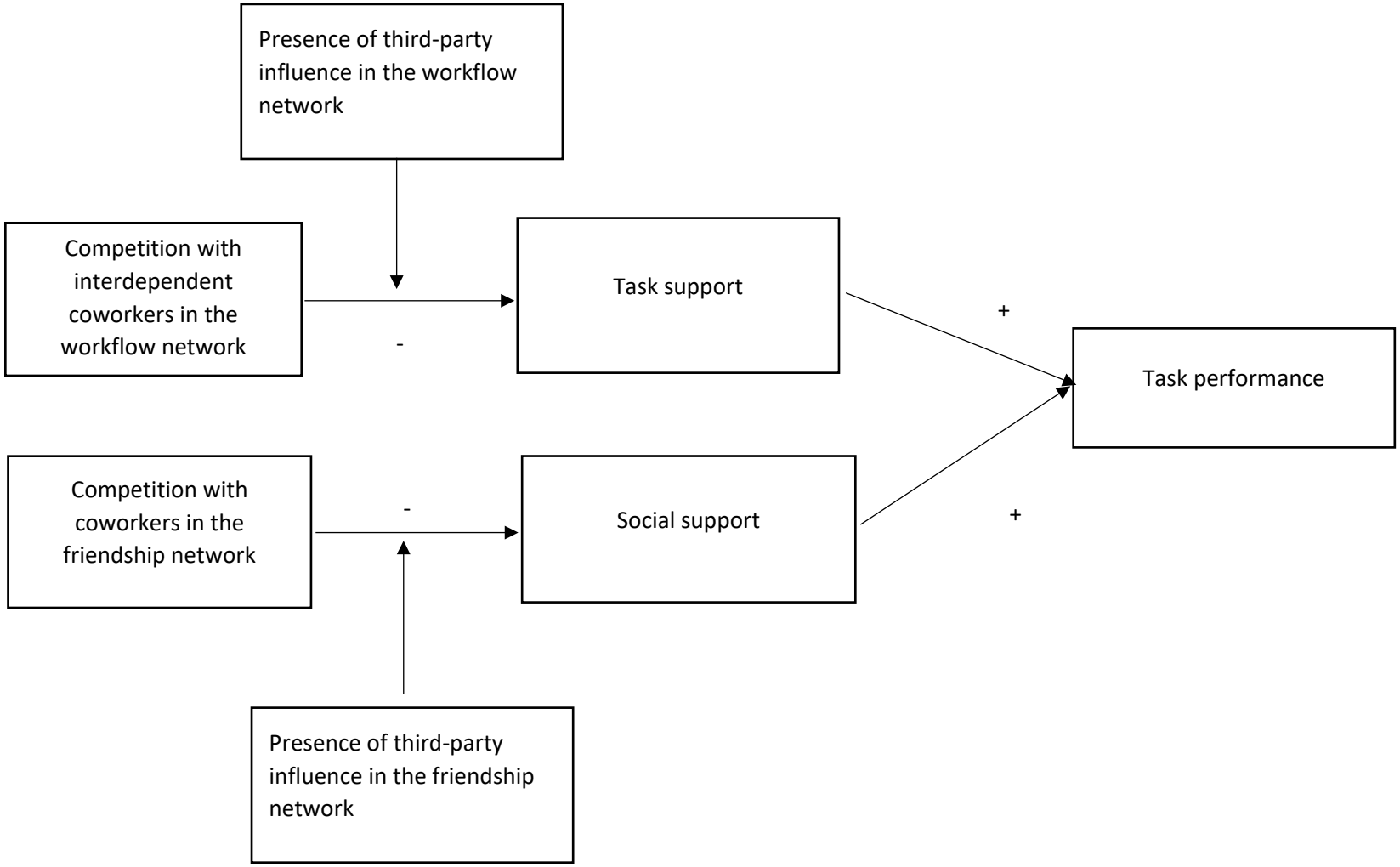
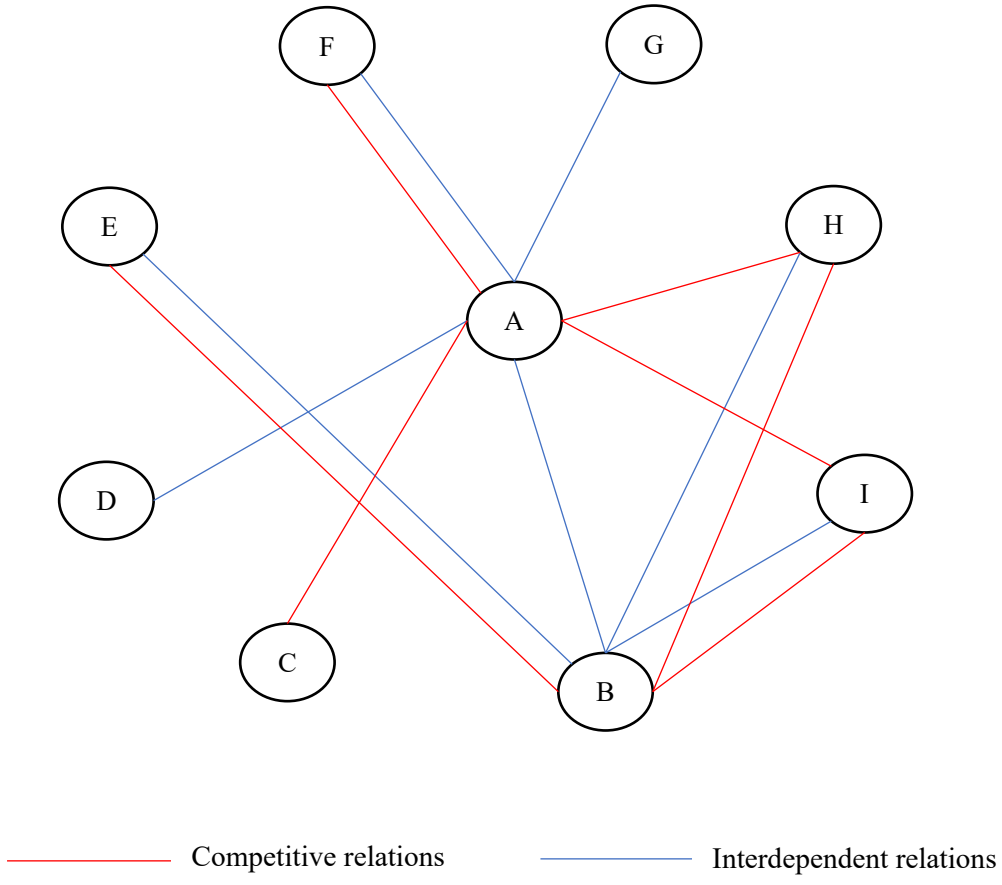


FIGURE 2 MODEL ILLUSTRATION



APPENDIX 1 STUDY 2 QUALTRICS SAMPLE SURVEY

1)

Thank you for your interest in this study. Today's study is to investigate the effectiveness of virtual teamwork communication. **In the following 40 minutes, you are going to work on a team project with two other student participants, one at the Shady Grove campus of University of Maryland, and another at the Baltimore campus. After briefing you on the background information of this project, we will connect you to them and you will be able to communicate virtually via a temporary email account we've set up for you (you should see it on a separate tab in the current web browser).**

To start, please enter your full name and your UID, so we can connect you with your teammates. Your information will be deleted at the end of the study to ensure anonymity.

2)

The task today is for the three of you to work together to devise a proposal to improve the declining situation at **Studio Theater Company**, which is an independent theater located the intersection between 14th Street and P Street, Washington D.C. Here is a brief bio about the theater.

Studio Theatre is Washington's premier venue for contemporary theater*, "where local audiences will find today's edgiest playwrights" (Variety). Studio produces the work of today's greatest writers, augmented by occasional productions of modern classics. Studio's work is marked by its emphasis on excellence in acting and design, and the signature intimacy of its four theaters, all of which seat fewer than 225 patrons. The quality of this work has been recognized over its 41-year history by sustained community support and 72 Helen Hayes Awards for excellence in professional theater.*

During its early days, Studio Theatre quickly developed into a theater designing and hosting many successful plays that went on to other well-known theaters. It was committed to staging high-value theater and set creative standards. Importantly, it also ran with reasonable financial success. A couple of years ago, however, it started failing to live up to its own standards. By producing average

quality plays, the theater was able to support itself and its permanent staff. However, ticket sales and creative reputation went down. In addition to this, the competition within the entertainment sector increased, making the situation more and more problematic. This led the General Manager to initiate some changes in the managerial staff to bring about a strategic reorientation. This helped to bring back the theater's creative prestige and financial success.

3)

Under the General Manager, there are three important roles within the theater management: 1) Artistic Director, who is responsible for the design and introduction of creative strategy (e.g. theatrical programs), 2) Event Director, who is responsible for anything other than theatrical programs (e.g. service, community events), and 3) Finance Director, who is responsible for managing the financial well-being of the theater.

Today you are going take on the role of **Event Director**, whereas your teammates will take on the roles of Artistic Director and Finance Director, respectively. The three of you will be working together to develop a team proposal for increasing the performance and competitiveness of the Studio Theatre. This proposal will need to comprehensively address all three aspects of improving performance—theater programming, events and community outreach and sound financials.

Of course, proposals and ideas for improving a specific aspect (e.g., programming) will be affected by other aspects (e.g., finance). For example, the artistic director cannot propose several "high-cost" plays because that will adversely affect the theater's ability to pay for them. The three roles are thus **interdependent** with each other and need to be well-coordinated. Therefore, in order to come up with the best solution, **it is paramount that three of you work together to coordinate your ideas so that the perspectives of those three roles are well-integrated in the group proposal. Your final team proposal needs to be comprehensive, yet cohesive and consistent across the three areas/roles.**

But first, before you work together in creating a team proposal, we would like you **and your teammates, to fully digest the information specific to your own role and independently**

formulate your own opinion from the perspective of your own roles (e.g., being the Event Director in your case).

Please click next first, and we will give you a few minutes to fully understand the context of the theater as the Event Director and work on an independent analysis.

4)

In the packet on your desk, you will review information relevant to your role as Event Director (Your team members will have slightly different information due to their roles as Artistic and Finance Directors). **As the Event Director, you are responsible for making the visit to the theater most enjoyable to the audience and ensure that it is well connected to the community**. Please make sure that all your actions are in line with this goal. For everything you say or do, you should think of helping *Studio Theater* from the perspective of an Event Director.

Please make sure that you get familiar with the theater's characteristics and the events described. Try to really take on the role of the Event Manager and know that you are professional colleagues with your teammates, tackling this proposal project. **In the following 5 minutes,** please review the material carefully and thoroughly. In order to come up with informed and well-thought out individual and group proposals, it is important that you study the material carefully. Then, we will enable email communication and allow you to work on your group proposals. It is very important that you read all instructions thoroughly and follow them carefully. Please do not skip any question and answer all of them honestly. Thank you again for your cooperation and participation! It is very important that you read all instructions thoroughly and follow them carefully. Please do not skip any question and answer all of them honestly. Thank you again for your cooperation and participation!

5)

Today, you are going to work with the following student participants as part of your team:

Alex Hughes, Shady Grove Campus

Josh Richardson, Baltimore Campus

Please click next to continue.

6)

In the next 15 minutes,

1. Please think about your role as Event Director and come up with some ideas for how to enhance the theater's performance from the perspective of improving customer experience in the theater, organizing events and community outreach. Please use the space on the next page to create your own individual proposal as Event Director. You will notice we have provided some instructions and tips to get you started.

2. While you are doing this, you may receive an email or two from your teammates, Alex and Josh regarding the task. If you receive any emails, please respond to them. This will start the conversation that leads to the group discussion phase.

7)

After 15 minutes, you will begin working with your two other partners. For that part of the team task, we would assign a "leader." Only one of you can become the leader, who will have the final decision-making authority in the team. That is, the best person among the three of you will be given the leadership responsibility. You can become the leader based on the quality of your individual proposals. The comprehensiveness, thoughtfulness and creativity of your individual proposal is a sign of your ability to lead the team to create a high-quality proposal. Once you submit your individual proposal, we will use a text analysis tool to evaluate your proposal and give it a numerical score based on its richness, depth and structure. This tool will also present a comparison between your score and that of your teammates. **Based on this analysis, the highest-scoring person will be selected as the "leader" who will have the "final say" in group discussion**.

8)

Please note that you will have 15 minutes to work on your individual proposals. You might receive emails from your teammates regarding some aspects of the task. So, please also

check your email inbox periodically (which is already open on another tab on your computer screen). If so, please respond to them as it will help later in your team task.

For your individual proposal, please have 3 paragraphs or bullet points, each detailing how and why you plan to address the following areas (you can refer to the role material on your desks as well):

1. What type of refreshment (e.g. food and beverages) menu would you offer to your customers in 2020? For example, think about the key characteristics of your potential customers (e.g., kids, older adults etc.) and what they might like.
2. What type of event do you want to organize to attract theater attendance? For instance, think about the geography of the theater and what groups of people typically come to the area.
3. What initiative would you want to promote to increase the visibility of Studio Theater in the local community? For instance, think about the social institutions and businesses in the theater's community and how you may increase the theater's engagement within the community.

APPENDIX 2 STUDY 2 PACKET INFORMATION

Studio Theatre Company

Studio Theatre is Washington's premier venue for contemporary theatre, "where local audiences will find today's edgiest playwrights" (*Variety*). Studio produces the work of today's greatest writers, augmented by occasional productions of modern classics. Studio's work is marked by its emphasis on excellence in acting and design, and the signature intimacy of its four theatres, all of which seat fewer than 225 patrons. The quality of this work has been recognized over its 41-year history by sustained community support and 72 Helen Hayes Awards for excellence in professional theatre.

During its early days, *Studio Theatre* quickly developed into a theatre designing and hosting many successful plays that went on to other well-known theatres. It was committed to staging high-value theatre and set creative standards. Importantly, it also ran with reasonable financial success. A couple of years ago, however, it started failing to live up to its own standards. By producing average quality plays, the theatre was able to support itself and its permanent staff. However, ticket sales and creative reputation went down. In addition to this, the competition within the entertainment sector increased, making the situation more and more problematic. This led the General Manager to initiate some changes in the managerial staff to bring about a strategic reorientation. This helped to bring back the theatre's creative prestige and financial success.

Studio Theatre, 1501 14th St. NW, Washington DC

Studio Theatre Company **today!**

However, *Studio Theatre* is facing new challenges. Although it is still doing relatively well, the General Manager has decided to get proactive and come up with a strategy before the real problems start. Therefore, he is looking for a creative action plan that will help the theatre keep its creative reputation up and stay financially successful. During the strategic reorientation, a lot of the more traditional measures were already taken. They did help to increase the artistic prestige and financial performance of the theatre. However, since most of the straightforward actions have already been taken, the General Manager is especially interested in creative plans. By this, he means plans which are at the same time original and new as well as useful and practicable. In order to develop such a plan, the General Manager has put together a group of his most trusted managers and put them in charge of coming up with an action plan that helps the theatre to reach the dual goals of financial profitability and high artistic value. Because he has entrusted some of his best managers with the task he wants not so much a list of ideas but rather one plan that represents or combines the best ideas and that is ready to be put into practice.

Within this team, you are the Event Manager. It is your job to make sure that the things that are important for the Event Manager are part of the final group plan!

The Event Manager

You are the Event Manager of the *Studio Theatre*. It is your job to bring the best quality theatre experience to the audience and make sure that as many different people as possible get involved with the *Studio Theatre*'s activities. **As the Event Manager, you are responsible for all aspects of a performance that do not relate to the play itself**. In essence, you have to make sure that everything runs smoothly and the best possible service is offered to the audience at all times. Additionally, you have to take care of increasing the theatre's visibility in the community. It is your job to explore ways to get in touch with members of the community and potential business partners.

As part of your customer service orientation, it is important that you offer an attractive package of snacks and drinks to the audience. You decide which refreshments are offered at which price during which shows and you can come up with special deals. Additionally, you are in charge of designing and suggesting special events. These are great ways of getting different groups within the community connected to the theatre. The more people know about the *Studio Theatre* or even cooperate with it, the better!

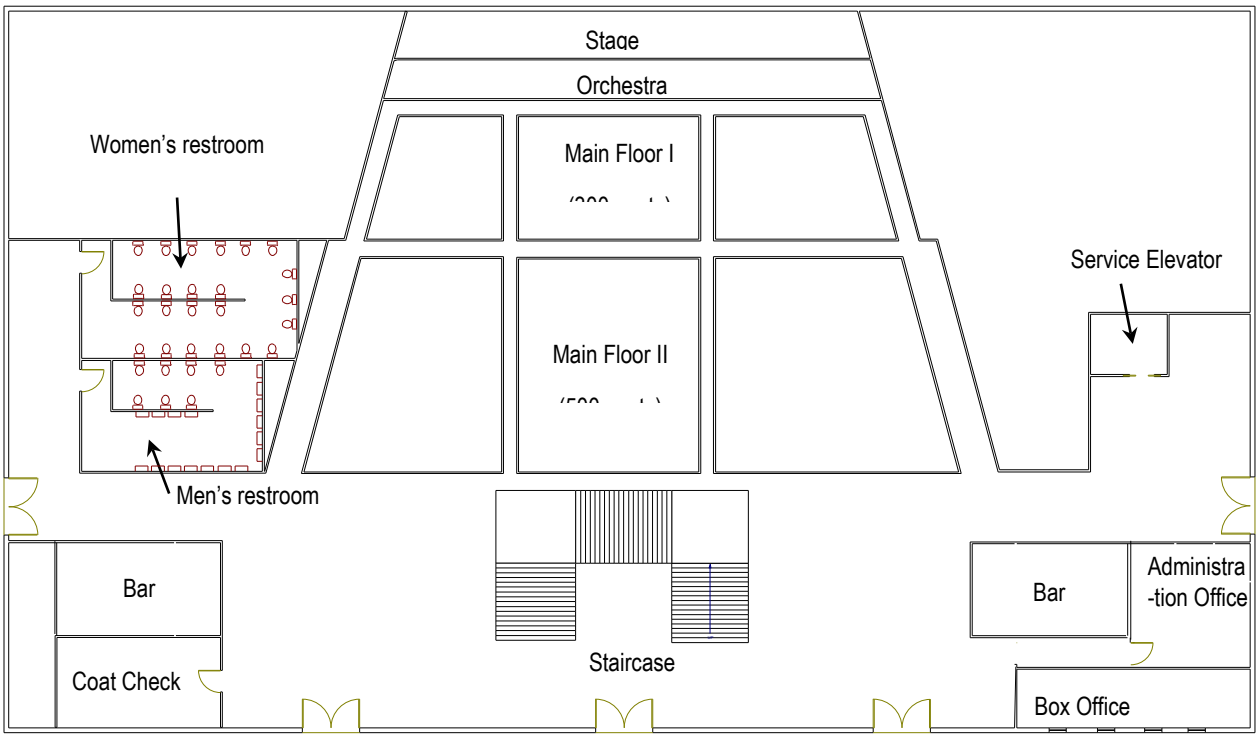
As the Event Manager, you are in charge of managing all aspects of a performance that do not relate to the show itself. Your main goal is to bring the highest possible service standards to the visitors of the *Studio Theatre*. Their visit should be as exciting and enjoyable as possible. This also includes developing special events for special groups and audiences. All of your actions are evaluated against the bottom line of whether or not they improve the audience's satisfaction with their visit and whether they serve to get other parties of the community connected to the theatre. The overall goal is to maintain the highest possible levels of customer service and increase the visibility of the *Studio Theatre* in the community.

To sum up:

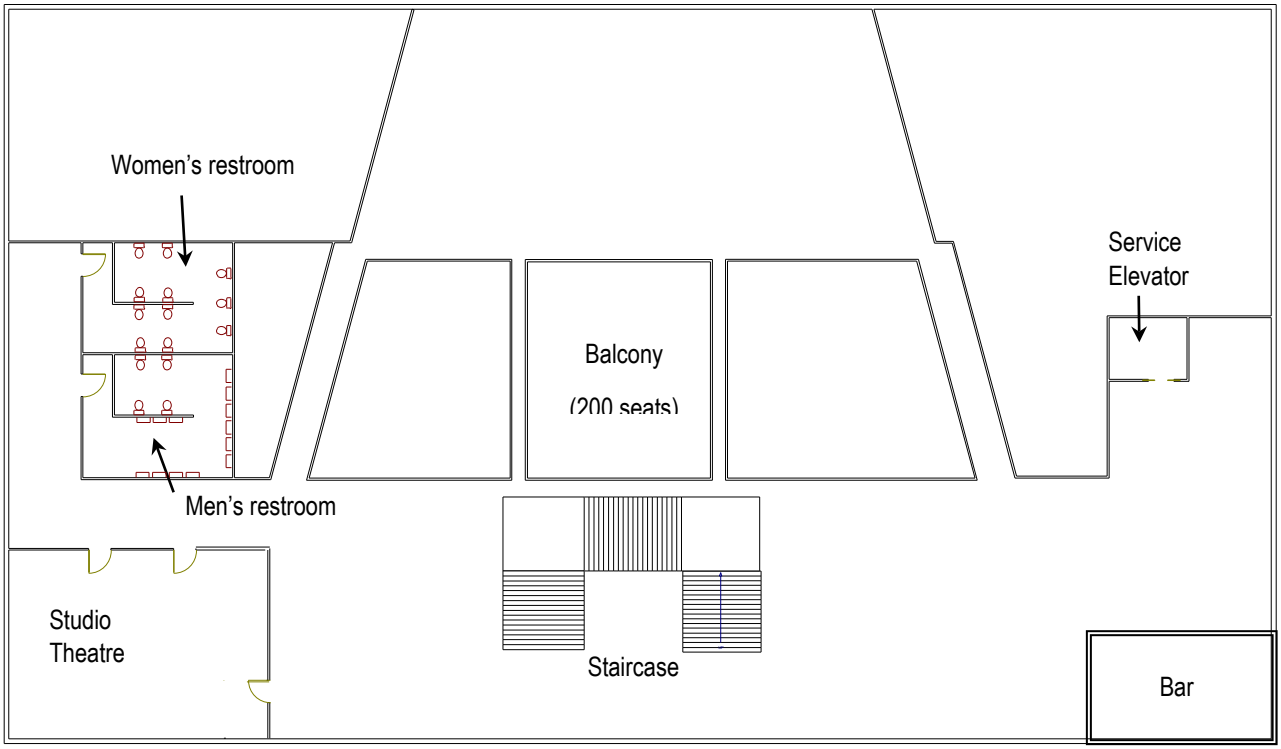
You are the Event Manager of the theatre. Your main goal is to ensure that visiting the theatre is an altogether exciting and enjoyable event for the audience and to get important corporate and community partners connected to the theatre. To ensure this, the following aspects are of special importance:

- Providing refreshments fitting the audience's wishes
- Organizing the most vibrant theater-based community event to attract foot traffic
- Getting key partners engaged into the theatre's activities and increasing its visibility

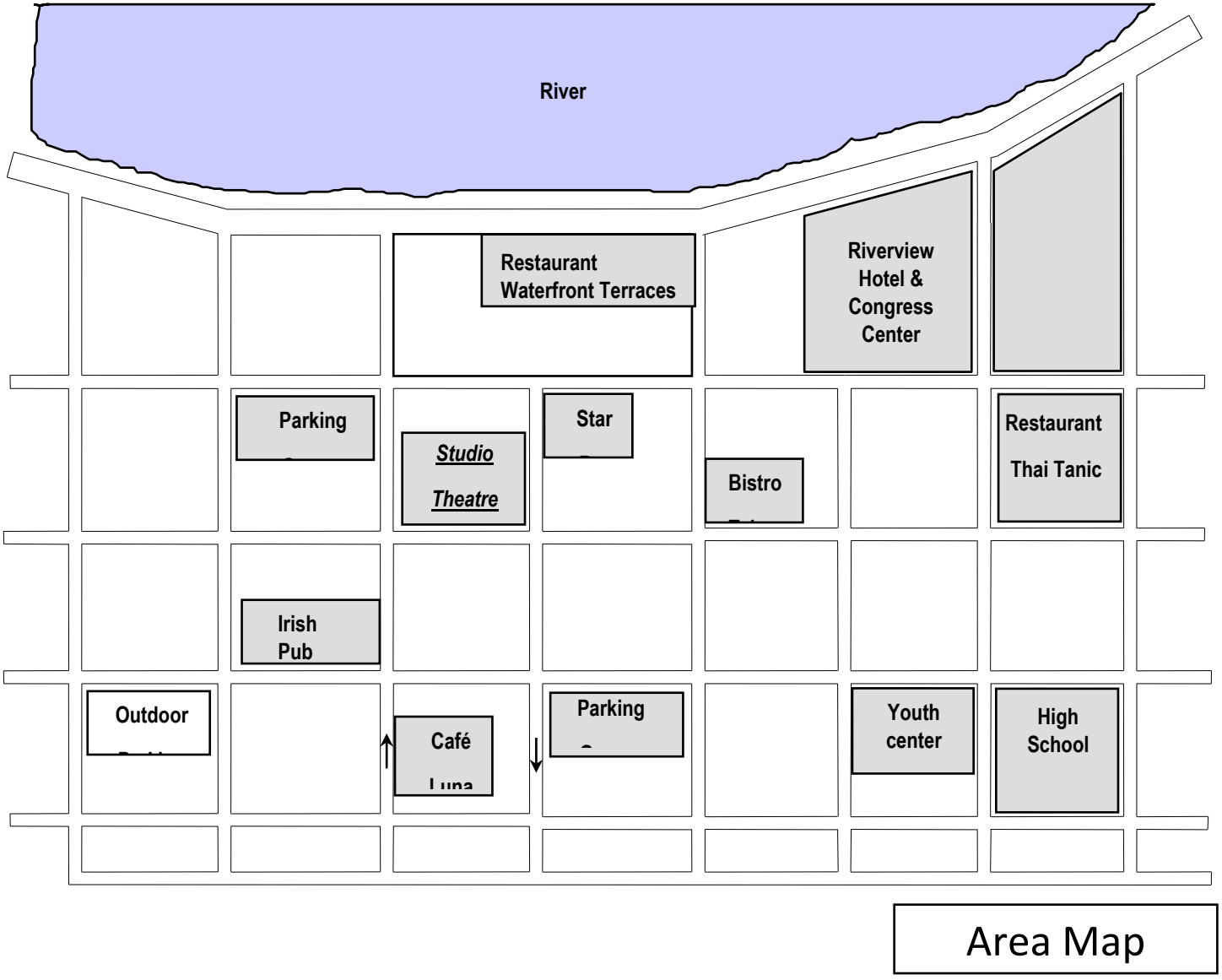
Remember that the most important criterion is whether an action helps to provide the most exciting and pleasurable experience for your audience and get key partners connected to the theatre's activities.



First floor plan



Second floor plan



Studio Theatre – Location Plan

Studio Theatre – Ticket Sales by Target Groups

Category	# on mail list for information about the Theatre	# tickets purchased within past 12 months
Groups	4532	11414
Subscribers	10435	15122
Individual (single ticket buyers)	52236	24347
TOTAL	67203	50883

Breakdown by Group Categories

Group category	# of Group leaders on mailing list *	# of tickets purchased within past 12 months	Percentage of ticket sales
Corporate	1520	6054	53.0
Hospitals	584	1520	13.3
Retirement communities	229	73	0.6
Schools	598	144	1.3
Charities	107	510	4.5
Seniors clubs	450	137	1.2
Social clubs	642	1609	14.1
Unions	24	18	0.2
Scouts	51	152	1.3
Theatre clubs	38	962	8.4
Churches	182	174	1.5
University	9	55	0.5

Trade associations	16	6	--
TOTAL	4450	11414	100 %

* Group leader may represent 15-5000 group members

Studio Theatre: Calendar of Events - Fall Season 2019

Sept.	***Monday***	***Tuesday***	***Wednesday***	***Thursday***	***Friday***	***Saturday***	***Sunday***
Main	**20:00 Sunset Boulevard** – A Broadway Show	**20:00 Sunset Boulevard** – A Broadway Show	**20:00 Hamlet** – Drama Classics	**20:00 Hamlet** – Drama Classics	**20:00 Sunset Boulevard** – A Broadway Show	**12:00 Sunset Boulevard** – A Broadway Show **20:00 Hamlet** – Drama Classics	**11:00 Charlie and the Chocolate Factory** – Children's Play **20:00 Sunset Boulevard** – A Broadway Show
Studio		**19:00 Old Times** – Contemporary Drama					
Oct.	***Monday***	***Tuesday***	***Wednesday***	***Thursday***	***Friday***	***Saturday***	***Sunday***
Main						**12:00 Chicago** – A Broadway Show	**11:00 The Legend of Sleepy Hollow** – Children's play **20:00 Chicago** – A Broadway Show

	20:00 Chicago – A Broadway Show	**20:00 Chicago** – A Broadway Show	**20:00 Private Lives** – A Comedy	**20:00 Private Lives** – A Comedy	**20:00 Chicago** – A Broadway Show	**20:00 Private** Lives – A Comedy	
Studio		**19:00 Old Times** – Contemporary Drama					

APPENDIX 3 SAMPLE EMAIL RESPONSES

1)

"Hi Alex,

For the beverage options, I am thinking about having a bar for the older crowd and sodas or juices for the children. Also for older crowd, I would like to provide diet drinks.

For local sponsorship, we could create a social media account and spread the word of sponsorship through that platform.

Thank you,

2)

Allie "

Hi sorry I just saw this,but I think we can add high end alcohol for corporate events and then to help attract children add milkshakes as well as Slurpees. For local sponsorship's we can cater from local restaurants to host dinner at your seat during the show which will help restaurants promote us and we will be promoting the local restaurants.

"Hi Alex,

3)

I was thinking water, flavored water, and fountain sodas for drinks. And healthier chips and snacks for food. A sponsorship we could get from our community would be from the high school a few blocks down.

Thanks,

Alexandra"

4)

"Hi Alex,

sure, I was thinking more of the bubbly water which is low cost and at the same time can substitute soda beverages. Also, I was thinking that the company can create some classes for kids and adults who would like to take some acting classes form local artists as well as attracting local companies to run their advertisements inside the building. Let me know if that helps.

Thanks "

"Hey Alex,

5)

I am taking on the task of Event Manager and would be happy to answer these questions as I dive into my proposal. For the beverage, we are typically getting the majority of ticket sales from corporate sponsors which leads me to believe the most frequent attendees are 21+. I would think that a standard soft-drink offering with a small variety of alcoholic beverages to make mixed drinks would cater best to that demographic. That includes vodkas, wines, and whiskeys (the latter two of which could be mixed with the soft-drinks. That being said, there also is a significant advertisement base within the mailing list of schools so it would be smart to not only have soft-drinks but drinks available for both kids and parents around 11:00am when they might be coming to the earlier shows. That might include

chocolate milks, coffees, and possible a non-alcoholic margarita-eqsue cocktail for the parents to enjoy or the kids to play with.

6)

As for the local partnerships I definitely think there is more opportunity to reach out to schools regarding the shakespeare plays that might be going on at the theater as well as the universities in the area. The mailing list for the university is quite low and by increasing that might increase the students/student groups that attend. Given that, there could be opportunities for sponshorships with the universities.

Best,

Carly"

"Hey Alex,

7)

I was looking to offer more adult beverages like alcohol and sparkling water since the majority of our customers. A few different types of spirits and maybe Perrier?

8)

In terms of local sponsorships I think teaming up with the waterfront restaurant would makes sense as they are close by and would likely want to support local theater. Also teaming up with the high school to have drama programs would create goodwill and likely lead to a better public image. Let me know if you need anything else

Anders"

"Hi Alex,

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