The Role of Informal Social Interactions in Predicting Team Cohesion and Performance

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A Thesis in the John Molson School of Business

Department of Management

Presented in Partial Fulfillment of the Requirements

for the Degree of

Master of Science (Management) at

Concordia University

Montréal, Québec, Canada

August 2020

CONCORDIA UNIVERSITY

School of Graduate Studies

This is to certify that the thesis prepared

By: Sam Sinz
Entitled: The Role of Informal Social Interactions in Predicting Team Cohesion and Performance

and submitted in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

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Abstract

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In a world where teamwork and performance are essential components of any organization, it is essential to understand the phenomena that lead to an effective and sustainable work environment. Organizations need to perform well to achieve their objectives. While most scholars agree that team cohesion is a precursor of team performance, this relationship has not been fully established. Furthermore, the antecedents of team cohesion are poorly understood. The main purpose of this thesis is to investigate the role of informal social interactions inside and outside the workplace in predicting team cohesion, and address gaps in the literature, in a quest for consensus on the relationship between team cohesion and team performance. Relying on the social identity theory, this paper develops eight hypotheses to shine light on the link between social interactions and team performance. Using survey data from 141 employees around the world, this empirical study obtains significant evidence of a positive relationship between informal interactions both inside and outside the workplace and team cohesion. The results of the analysis further confirm a positive relationship between team cohesion and team performance, and the mediating role of team cohesion. Managers should promote social interactions inside and outside the workplace amongst team members to increase team cohesion and performance. Focusing on the bigger picture, this thesis concludes with a presentation of the implications and limitations of the study. Specifically, the rise of virtual interactions in a post-pandemic society and the effects of national culture in the global landscape are discussed.

Acknowledgments

As I write the last lines of this thesis, the ups and downs of the past two years come to mind. This journey may have been rocky but I managed to successfully finish my research, thanks to an outstanding support system.

I would like to dedicate this thesis to my dad. You shaped me into who I am today and I look up to you. Your guidance and your enthusiasm have been a never-ending source of motivation. Thank you for always pushing me out of my comfort zone. I love you and I miss you every day. I would also like to show eternal gratitude to my mom, who has always been by my side. Your exceptional courage and outlook on life are truly inspiring. You taught me that I could achieve anything with just enough dedication. Thank you for being my biggest fan. I love you so much. To my sister Sara, thank you for always having my back. By focusing on solutions, you make hardships seem irrelevant. You elegantly push me to surpass myself while making sure I do not neglect other important aspects of life. Thank you for all those take-outs and movie nights. Mamanï and Babaï, thank you for welcoming me to your place after long days and teaching me not to take things too seriously. Mina and Kadidja, thank you for your insights and assistance.

I would like to thank Vanessa, who proved to be really fun and helpful, despite having fueled my procrastination by being a distracting friend with a similarly erratic sleep schedule. At least it helped us realize we could be very effective when needed. Sarah, thank you for randomly harassing me with phone calls, bringing candy to class, and introducing me to the 10th floor.

I would like to thank my committee members, Dr. Alex Lefter and Dr. Kathleen Boies. Your timely analytical feedback and suggestions have been both helpful and constructive. Finally, I simply could not have written this thesis without the valuable help of my amazing supervisor, Dr. Linda Dyer. Thank you for your advice, pointers, and guidelines. Working with you has been an extremely pleasant experience. Your positivity and energy made this task fun and exciting.

I would like to thank the donors of the Hydro-Québec Grad Award, the New Millennium Scholarship, and the Luc Beauregard Centre Thesis Award for helping me fund this project.

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Introduction

Whether you like it or not, you will most likely have to interact with other people in your life. Actually, you may even be expected to work with them. You can blame this on sociability being a major characteristic of our species (Argyle, 2013; Simmel, 1949). We depend on other people and other people depend on us from our birth to our death. The effectiveness of our society relies on the specific role of each member. We then realized that some tasks would require collaboration from not only one but several members. Some would argue that this realization forms the basis of our society (Sachs, Mueller, Willcox, & Bull, 2004). In order to increase overall productivity, we invented organizations, which by definition engage a group of people to "work together in an organized way for a shared purpose" (Organization, 2020).

Today, there are more organizations than ever and they come in all sizes (Höllerer, Walgenbach, & Drori, 2017). Ranging from small family organizations to large multinational corporations (MNCs), organizations are at the core of society. The ultimate goal of an organization is success through productivity, progress, and ultimately performance (Murphy & Cleveland, 1995). Organizations are thus always looking for ways to increase performance. In most organizations, the performance of the firm strongly relies on its employees (Richard, 2000). It comes as no surprise that scholars have started to rely more on a resource-based view to investigate the role of various human resource practices in firm performance (Wright, Dunford, & Snell, 2001). According to this framework, effective human resource management has the potential to deliver considerable comparative advantage to the organization (Boxall, 1996). Managers and scholars alike strive to understand the processes that lead to a well-performing workforce. However, there is little knowledge about the role of workforce social dynamics in fostering performance, specifically at the team level in current research (Jung, 2016).

Coworkers everywhere spend a considerable amount of their day together. However, most of their interactions are work-related and do not offer the opportunity for employees to get to know each other on a more personal level to form meaningful relationships (Chadsey & Beyer, 2001; Kirmeyer, 1988). Other types of interactions include non-work-related informal interactions at

the workplace, non-work-related informal interactions outside of the workplace, and virtual interactions.

Since many employees work in teams, it is important to ensure performance at the team level. Organizations are always looking for ways to promote team-building within their workforce, usually resorting to company retreats and other bonding exercises (Rushmer, 1997). Spending time outside of the workplace allows employees to socialize without thinking of their perhaps stressful work environments (Meier & Spector, 2013). Since the workplace is more business-oriented, it presents a more challenging context for the development of instinctive trust and familiarity among people (Cui, Vertinsky, Robinson, & Branzei, 2018). The nature and quality of interpersonal relationships greatly affect team building and team cohesion (Kao, 2019; Kim, Park, & Kim, 2017; Tekleab, Karaca, Quigley, & Tsang, 2016). Team cohesion is defined by Goodman, Ravlin, and Schminke (1987) as the level of commitment of group members to a group task (as cited in Kaymak, 2011).

The circumstances leading to increased team cohesion remain relatively under-examined, as most studies looking at antecedents of cohesion are very context-specific (Buchan & Taylor, 2016; Casey-Campbell & Martens, 2009). Scholars who have tackled team cohesion as a dependent variable have mostly investigated very specific contexts such as cohesion in sports teams (Carron, Widmeyer, & Brawley, 1985). Surprisingly, there is little to no research exploring the effects of informal social interactions on team cohesion. To address this lack of research, this paper will identify informal social interactions both inside and outside of the workplace and assess their relationships with team cohesion and team performance through a social identity theory perspective.

At the time of writing, an ongoing global pandemic of the disease known as COVID-19 has been declared, resulting in millions of cases worldwide. This pandemic has affected society to a great extent, as many organizations have asked employees to work and interact virtually from home. While not being the focus of this study, virtual work interactions are gaining prominence. Therefore, this study also provides a brief summary of the state of virtual interactions in the global landscape.

Due to the growing number of multinational enterprises, it is essential to analyze management situations through an international lens. The societal differences between countries are due to the richness and differences of national cultures (Hofstede, 2011). By considering work teams around the world, this paper strives to provide a comprehensive and inclusive approach to team behaviors.

There has been a substantial amount of research on team cohesion and team performance in the past few years. However, current articles report mixed results, and thus this field needs further probing. Many studies do establish a positive relationship between team cohesion and performance, while some early studies reported inconclusive results (Casey-Campbell & Martens, 2009; Chang & Bordia, 2001; Evans & Dion, 1991). These studies have fairly different contexts and very different measures of both team cohesion and team performance. In this research, I aim to use robust measures of team cohesion and team performance and establish a more conclusive link between these two variables.

This study strives to address the gaps in the literature by exploring the relationships between informal social interactions among team members both inside and outside of the workplace and team performance. Specifically, the richness of this paper lies in the exploration of the mediating role of team cohesion in these relationships. Gathering data from various countries will provide additional insights into the body of knowledge. This study will contribute to the existing literature by considering the following research questions: Is team cohesion higher in teams that engage more often in informal social interactions at work? Is team cohesion higher in teams that engage more often in informal social interactions outside of the workplace? Which type of informal social interactions has a higher effect on team cohesion? Does team cohesion mediate the relationship between informal interactions and team performance? Is a cohesive team a well-performing team?

The first section of the paper focuses on the theoretical development of the constructs of interest as well as the presentation of my hypotheses. Next, the method and empirical results are presented, leading to a comprehensive discussion of the strengths, limitations, and implications

of the research. This thesis will also provide practical insights to managers to effectively foster team cohesion and increase team performance.

Literature Review and Hypotheses

Scholars have widely studied various concepts mentioned in this paper. In this section, I will clarify the nature and scope of the different concepts, identify existing gaps in the literature, discuss the potential connections between the constructs, and draw hypotheses that will form the basis of the thesis.

Social Interactions

Humans are inherently social. We are an extremely social species with a need to learn from each other and cooperate (Boyd & Richerson, 2009). The basis of our social structure lies in our interactions with one another. Social interactions facilitate the development of our relationships with other people, which, in turn, define our society. The nature of social interactions can be very different based on the actors involved. For instance, the type of social interaction between two siblings would greatly differ from the type of social interaction between two friends or between a student and their professor. In this study, I focus on interactions between coworkers—specifically, between work team members. The work environment is operated by specific types of social interactions.

Whether at home or in the workplace, close social relationships are linked to many positive outcomes such as happiness, motivation, and a decrease in stress (Chadsey & Beyer, 2001; Gawel, 1996). It is therefore in everyone's best interest to foster social interactions in the workspace as well. The work context highly contributes to the formation of relationships. The sole act of working enables coworkers to share common experiences, pressures, concerns, and culture (Chadsey & Beyer, 2001). Work represents a major life experience and could be a common basis for the formation of a relationship.

De Jaegher, Di Paolo, & Gallagher (2010) define social interaction as the interaction between "two or more autonomous agents co-regulating their coupling with the effect that their autonomy

is not destroyed and their relational dynamics acquire an autonomy of their own" (p. 441). These authors consider conversations, collaborative work, arguments, and even dancing as examples of such interactions.

In her 1988 paper, Kirmeyer investigates communication in the workplace. The author identifies two different types of social interactions occurring in the work context: work-related and non-work-related. Work-related social interactions are directly linked to job duties, whereas non-work-related social interactions are not linked to the job and include behaviors such as joking, teasing, or discussing family matters or major events. Butterworth, Hagner, Helm, and Whelley (2000) describe a wide range of both work-related and non-work-related social interactions. The latter, which includes kidding around and casual conversations, are particularly frequent and represent "important parts of the social culture of the workplace" (Butterworth et al., 2000, p. 343).

In this thesis, I go one step further and distinguish between social workplace interactions inside and outside the workplace, which very few studies have done so far. This study makes the assumption that social interactions inside the workplace remain more work-related, whereas social interactions outside the workplace are less work-related and more laid-back. Indeed, it is reportedly recognized that social interaction patterns are derivative of the spatial configuration they are an integral part of (Backhouse & Drew, 1992). In this research, I focus on non-work-related informal interactions between team members, both inside and outside of the workplace.

Workplace informal interactions

As mentioned earlier, this type of interaction would include any informal social interactions among coworkers inside the workplace. Thus, casual conversations, kidding around, or discussing family matters fall into this category, so long as they take place in the workplace. Depending on the organization, several factors may stimulate this type of interaction. If the workplace has a designated conference room, break room, cafeteria, gym, or even smoking area, these factors facilitate both formal and informal discussions and coworker bonding. Furthermore,

interactions at any of these places would constitute different types of interactions, based on Backhouse and Drew's (1992) postulate on the role of spatial configuration.

Out-of-workplace informal interactions

This type of interaction has long been overlooked by researchers. People working together will ultimately form relationships. However, the nature and strength of these relationships depend on many factors. Based on the level of the relationship, coworkers might interact more or less; the more intimate the relationship, the more likely they are to spend time together outside of the workplace (Chadsey & Beyer, 2001). Yet, coworkers need to interact at the workplace before they form relationships that are meaningful enough for out-of-workplace interactions (unless they already had a relationship before they became coworkers). These types of interactions are much more varied than workplace interactions, which face inevitable constraints (formal context, limited to the 9-to-5 workday, banter and personal conversations frowned upon, etc.). Out-of-workplace interactions can include any type of activity from simple meetings at social events to post-work happy hours at the local bar, outdoor lunches, or the occasional dinner party.

Virtual interactions

With the development of the computer and the internet in the 20th century, society entered a highly globalized era. In 2017, about half of the world population had access to the internet (The World Bank, 2020). This number is even higher in developed countries, e.g., 91% in Canada. It is relatively easy for a substantial portion of the population to communicate online. Virtual conferences are becoming more prevalent, as organizations slowly break the physical barrier of the workplace (Raghuram, Hill, Gibbs, & Maruping, 2019). Anyone can research, buy, create, sell, and market from their own home (Wu, Chen, & Pan, 2019). Nonetheless, the workplace has long held an important role and many organizations struggle with the concept of online work.

At the end of 2019, an infectious disease by the name of COVID-19 started spreading around the world, eventually turning into a global pandemic by March 2020. The virus causes the disease to spread between humans mostly during close contact. This has led to many nations enforcing quarantines and social distancing (World Health Organization, 2020). Starting with the

Hubei province of the People's Republic of China, followed by Spain and Italy, many countries started closing their borders and asking residents to stay indoors. In some countries, a certificate was needed to go outside and gatherings were prohibited for months. Thus, many organizations were forced to send their employees home and encourage online work (Bailey & Breslin, 2020). At the time of writing, most international borders are still closed, face masks are required in many locations and social distancing is heavily encouraged. Many of non-essential organizations around the world ask their employees to stay indoors and to communicate virtually. This spike in online communications made virtual interactions the norm in the work setting, at least temporarily (Bailey & Breslin, 2020).

To this day, it is unclear how long this pandemic will last and whether virtual interactions will continue to gain popularity in the future. Yet, tech companies have heavily invested in the development of innovative virtual communication platforms (Lowenthal, Borup, West, & Archambault, 202). Most universities and many organizations around the world are familiarizing with these tools. Researchers have shown that productivity persisted in most cases (Bloom, Liang, Roberts, & Ying, 2015). Organizations that used to condemn online work rapidly changed their stance on the matter.

In these uncertain times, virtual interactions should not be forsaken. While this research thesis focuses on informal social interactions inside and outside the workplace, it is worth noting that virtual interactions constitute a middle ground that may soon be standard in the work environment.

Team Performance

Job performance is probably one of the most studied concepts in the management literature. Performance can be broadly defined as the positive completion of a task through the application of knowledge, skills, and abilities. Most studies in management focus on firm performance. At the firm level, it is often measured as return on investment, such as return on assets, or net profit. Ultimately, organizations need to perform well to maintain sustainability and thrive. Hence, organizations need their employees and teams to perform well in order for the organization to

perform well as a whole. Firm performance, team performance, and individual performance are thus common and critical goals of organizations (Mollick, 2012). This study approaches performance through a smaller lens, as the focus is placed on performance at the group level.

At the group level, performance is often operationalized as a type of group productivity or task effectiveness (Gully, Devine, & Whitney, 1995; Mullen & Copper, 1994). It has been measured in many different ways, such as task scores (school grades), or the number of wins (games won during a season). Evans and Dion (1991) assert that developing meaningful and measurable criteria for performance can be very difficult. Hackman (1990) developed a multidimensional model of group performance, which includes productivity, system viability, and professional growth. These take into account the contribution of the group to its organization, itself, and its members. Productivity refers to "the degree to which the group output […] meets the standards of quantity, quality, and timeliness", system viability refers to "the degree to which the process of carrying out the work enhances the capability of members to work together interdependently in the future", and professional growth refers to "the degree to which the group experience contributes to the growth and personal well-being of team members" (Hackman, 1990, pp. 6-7). Hackman's multidimensional approach seems particularly well suited for the study of perceived team performance, as seen in Chang and Bordia's (2001) study. This approach is also less context-specific than other operationalizations such as group performance as a number of wins (Hadley, Poitras, Ruggiero, & Knowles, 2000). As outlined by Evans and Dion (1991), the performance of a large number of work teams depends on more than the product; the process of production can also play a major role.

Social Interactions and Team Performance

In this thesis, I strive to look into the antecedents of team performance. Few researchers have looked at the link between social interactions and team performance. Chadsey and Beyer (2001) argue that work interactions allow coworkers to share common concerns, pressures, and experiences. While informal interactions are supposedly non-work-related, their patterns are partly derivative of the spatial configuration (Backhouse & Drew, 1992). Thus, informal conversations at the workplace will ultimately include work-related aspects. Through these

interactions, team members will share their concerns at work, help each other, and get to know each other better (Chadsey & Beyer, 2001; Webb, 1989). Teamwork is necessarily achieved through interactions between members. Therefore, an increase in social interactions will lead to an increase in productivity. Furthermore, team members who help others enhance the capability of each member to work interdependently. Informal interactions inside the workplace contribute to the growth and personal well-being of team members as they allow employees to become better team players. Considering Hackman's (1990) conceptualization of team performance, I present the following hypothesis:

> *Hypothesis 1a. Informal social interactions with team members inside the workplace will be positively related to team performance.*

Informal social interactions with team members outside the workplace can also include work-related aspects, without the potentially negative influence of the workplace context. Indeed, the laid-back and less restrictive environment can make outside interactions richer and more diverse. Team members who interact outside the workplace get to know each other on a more personal level and learn about each other's concerns and cultures (Chadsey & Beyer, 2001), shaping a better performing team. This leads us to the following hypothesis:

> *Hypothesis 1b. Informal social interactions with team members outside the workplace will be positively related to team performance.*

Team Cohesion

As a member of society, each individual is usually part of several in-groups. These refer to social groups that the individual psychologically identifies as being a member of. For instance, community, family, peers, and work teams are all examples of social in-groups (Bar-Tal, 2000). However, some groups such as family or peers are more close-knit than other larger groups such as the community. In this thesis, I focus on work teams, which members do not necessarily identify with but are still required to be a part of. Work groups are usually called teams; nevertheless, team cohesion and group cohesion are conceptually identical.

Group cohesion is a concept that captures the state of interactions among group members (Friedkin, 2004). Group cohesion has often been defined as the level of commitment of group members to a group task, such as in Goodman, Ravlin, and Schminke's (1987) work (as cited in Kaymak, 2011). This definition is especially relevant in a work context. However, researchers have also challenged this broad definition—which seems to be somewhat lacking, as it overlooks the various components that can affect the level of commitment (Kaymak, 2011).

Many scholars investigated this concept and developed new dimensions to add robustness to the construct. It is worth pointing out that numerous scholars developed widely different definitions, going in different directions.

In their 1985 paper, Carron et al. took a multidimensional approach to model group cohesion. These authors reviewed definitions and identified two general categories: group integration, "a member's perceptions of the group as a totality," and individual attraction to the group, "a member's personal attraction to the group" (p. 248). Carron et al. (1985) further suggested that these definitions could either focus on the task aspect of the group or the social aspect, adding depth to the construct. As they focused on sports teams, the authors operationalized this concept through the development of the Group Environment Questionnaire (GEQ), which has later been used by many scholars (Chang & Bordia, 2001).

In 1991, Evans and Dion performed a meta-analysis of the extant literature on group cohesion and performance at the time. Many of the 16 studies included in the final sample operationalized group cohesion differently. This is due to the fact that most of the group cohesion research up to that point was based on sports teams rather than work groups in organizations.

Chang and Bordia tackled the concept of group cohesion in their 2001 study. They argued that a possible explanation for the confusion in the literature regarding this construct was the inconsistency in the definitions and measurements of group cohesion. Indeed, as the authors pointed out, scholars presented different models of cohesion throughout the years. It was defined as the level of commitment of group members to a group task (Goodman, Ravlin, & Schminke, 1987, as cited in Kaymak, 2011), "the total field of forces causing members to remain in the

group" (Festinger, Schachter, & Back, 1950, p. 164), and "a dynamic process which is reflected in the tendency for a group to stick together and remain united in the pursuit of its goals and objectives" (Carron, 1982, p. 124). Following the recommendation for consistency in empirical research, Chang and Bordia (2001) used Carron, Widmeyer, and Brawley's (1985) model as a basis for their study, adapting the Group Environment Questionnaire for measuring cohesion in work teams.

Despite this attempt for consensus, in 2009, the literature was still deemed "inconsistent and confusing" due to "the large number of definitions and measures used by researchers" (Casey-Campbell & Martens, 2009, p. 223). Yet, the Group Environment Questionnaire has been widely used in sports literature and has been adapted for use in other contexts several times (Chang & Bordia, 2001). Nevertheless, its reliability, validity, and use in empirical research is debatable (Casey-Campbell & Martens, 2009).

More recently, Kaymak (2011) proposed three dimensions of group cohesion, which paint a better picture of the interactions among group members. These are closely related to the constructs established by Carron, Widmeyer, and Brawley (1985). In Kaymak's (2011) article, group cohesion is composed of social integration, collective self-esteem, and past experiences.

Social integration is defined as "the attraction to the group, satisfaction with other members of the group, and social interaction among group members" (O'Reilly, Caldwell, & Barnett, 1989, p. 22).

Using social identity theory, Kaymak (2011) identified collective self-esteem as the second dimension of group cohesion. It is an expression of both personal identity and social identity. Three factors make up this dimension: membership esteem, private collective self-esteem, and importance to identity. Membership esteem refers to a member's belief of whether they are a valuable member of the group. Private collective self-esteem refers to whether a member is proud or regretting their association with the group. Finally, importance to identity refers to the influence of the group on a member's self-concept (Kaymak, 2011).

Kaymak's (2011) dimension of past experiences refers to an individual's attitude towards group work based on their previous experiences, i.e., whether the individual enjoyed working with groups in the past. This author's approach to group cohesion seems to be advantageous for research in work team environments.

Social Interactions and Team Cohesion

While team cohesion appears to be a fundamentally ideal objective, the underlying mechanisms leading to team cohesion are poorly understood. This concept is usually approached as an independent variable in the management literature. Researchers are more interested in the consequences of cohesion rather than in its antecedents. Nonetheless, some studies have aimed to look at the factors behind group cohesion. These were however mostly done in specific contexts that can hardly be generalized.

For example, Westre and Weiss (1991) studied the effects of perceived coaching behaviors on group cohesion in high school football teams. The authors found that some perceived coaching behaviors were antecedents of team cohesion, such as positive feedback and social support. The authors also discovered that perceptions of success and playing status were also relating to team cohesion (Westre & Weiss, 1991). It is unclear whether these results can be adapted to work teams. Indeed, researchers need to be cautious when considering sports teams as a model for workplace teams (Katz, 2001). Team balance, leadership, pressure, and ethics can vary a lot between sports teams and work teams (Katz, 2001).

In their 2009 meta-analysis, Casey-Campbell and Martens reported some of the few antecedents of team cohesion that have been recognized, e.g., group size, group diversity, member's intention to remain, and attraction to the group. However, the authors pointed out that distinguishing the antecedents from the definitions of team cohesion can be a challenge for investigators. In his search for antecedents of team cohesion, Kaymak (2011) sought in truth a better definition of the concept through various dimensions. Other definitions of team cohesion can include constructs that other researchers would consider antecedents, which results in vagueness in the literature (Casey-Campbell & Martens, 2009). As a result, Casey-Campbell and

Martens (2009) argued that few isolated antecedents have been identified. Five years later, Aubke, Woeber, Scott, and Baggio (2014) pointed out that member traits have been commonly used as antecedents of team cohesion while acknowledging the need for other antecedents.

Charbonneau and Wood (2018) investigated the antecedents and outcomes of unit cohesion in a military context. Following their study on 714 personnel members, the authors found that perceived effective immediate leadership and unit procedural justice both contributed to cohesion within the unit (Charbonneau & Wood, 2018). These antecedents remain very context-specific and cannot be applied to the work environment.

After reviewing the existing body of knowledge on team cohesion antecedents, I identified a clear need for general antecedents of team cohesion that do not interlace with its definition and that can be applied to most teams. Focusing on such antecedents of group cohesion adds depth and breadth to extant research.

Chadsey and Beyer (2001) argue that non-work-related interactions are more effective at establishing close social relationships with coworkers or team members since they enable employees to share intimate experiences and discover common interests. Interactions directly shape relationships, as a relationship necessarily "involves a series of interactions in time" (Hinde, 1976, p.5). Through the development of these relationships, an employee's attraction to the team, identification, and overall satisfaction with the team, and social interactions are expected to increase (Berman, West, & Richter, 2002; Kramer, 1991; Riordan & Griffeth, 1995). According to social identity theory, individuals show an inclination for their in-groups and base part of their identity on the groups they belong to (Stets & Burke, 2000; Tajfel & Turner, 1986). Similarly, interpersonal relationships between members of a group are key determinants of their identification with the group (Cameron, 2004). These are consistent with Kaymak's (2011) social integration dimension of group cohesion.

According to Henderson and Argyle (1985), different levels of relationships are possible depending upon the social interactions displayed by employees, as well as their perceived fit with the work environment. Strong and regular interactions are associated with stronger

workplace fit and better relationships. According to social identity theory, these are essential components of team cohesion, as collective self-esteem (Kaymak, 2011)

Group dynamics are driven by three main processes in social identity theory (Tajfel & Turner, 1986). The first process is known as self-categorization. Individuals tend to classify themselves and each other into social categories or in-groups (Stets & Burke, 2000). Members of the same in-group usually share idiosyncratic characteristics, which define the group. This categorization can also be fortuitous, such as in random team assignments (Tajfel & Turner, 1986). Nonetheless, this categorization leads to an accentuation of the perceived similarities between the individual and the group, and of the perceived differences between the individual and those outside the group (Stets & Burke, 2000). This suggests that when interacting, members of a work team will naturally look for similarities with the group. The second process in social identity theory is social identification. During this stage, members develop relationships and begin to adopt the identity of the group and see things from the group's perspective. Members internalize group values and behaviors. A uniformity in values and behaviors starts to develop (Ashforth & Mael, 1989; Tajfel & Turner, 1986). This further enhances the perceived similarities between members and gives the individual a sense of belonging to the group. At this stage, team members develop common goals and characteristics. This leads to the formation of relationships that are valuable to the team. Individuals perceive themselves as "psychologically intertwined with the fate of the group" (Ashforth & Mael, 1989, p.21). Members experience the failures and the successes of the group personally (Ashforth & Mael, 1989, p.21). This unity leads to an intrinsically cohesive team. The third process in social identity theory is known as comparison, which allows members of an in-group to compare themselves with outsiders and locate themselves in the social environment (Tajfel & Turner, 1986). During this stage, members reflect on the group and the environment as a whole.

Chadsey and Beyer (2001) further argue that the relationships formed in and around the workplace depend on several factors, including past experiences. While the authors allude to past experiences as a whole, it can be assumed that past experiences with the team would also play a paramount role in the quality of the relationships and interactions. Based on the apparent strong

connections between social interactions at work and Kaymak's (2011) concept of group cohesion, I present the following hypothesis:

Hypothesis 2a. Informal social interactions with team members inside the workplace will be positively related to team cohesion.

In the search for antecedents of group cohesion, I assert that social interactions outside of the workplace could potentially have a significant role. Henderson and Argyle (1985) identified three possible types of social relationships in their 1985 study: work acquaintances, work friends, and social friends. According to these authors, work acquaintances almost exclusively meet at work through formal contacts and have mostly task-oriented superficial interactions. These are not characterized by liking or disliking (Henderson & Argyle, 1985). However, work friends are more intimate and can interact both formally or informally at work but they rarely engage in activities outside of work or invite each other home. Finally, social friends represent coworkers with intimate relationships who often meet at social events outside of work (Henderson & Argyle, 1985). As social interactions outside of the workplace help maintain stronger and more intimate relationships, I assume that team cohesion will also benefit from this type of interaction. Furthermore, it has been suggested that the spatial configuration can have a strong impact on human interaction (Backhouse & Drew, 1992). Spending time with team members outside of the workplace enables employees to interact without thinking of their perhaps stressful work environments (Meier & Spector, 2013). This natural context can lead to increased familiarity and trust among people (Cui, Vertinsky, Robinson, & Branzei, 2018). This leads me to the following two hypotheses:

Hypothesis 2b. Informal social interactions with team members outside the workplace will be positively related to team cohesion.

Hypothesis 2c. The relationship between out-of-workplace informal interactions and team cohesion will be stronger than the relationship between workplace informal interactions and team cohesion.

These hypotheses increase the richness of the study as few scholars have distinguished between workplace and out-of-workplace interactions in academic research before.

Team Cohesion and Team Performance

According to Casey-Campbell & Martens (2009), very few variables related to cohesion have received as much attention as job performance has. The relationship between the two constructs appears quite complex. Group cohesion is widely believed to have positive effects on job performance but some researchers have contested these findings.

Chang and Bordia (2001) blamed the confusion in past studies on inconsistencies and lack of consensus regarding the definition and measurement of the constructs involved. These authors argued that Carron, Widmeyer, and Brawley's (1985) multidimensional model should be a good starting point for research on team cohesion. This model is based on the Group Environment Questionnaire (GEQ), a sports team-oriented survey. Chang and Bordia (2001) tried to adapt the GEQ to survey groups of university students. Using Hackman's (1990) multidimensional model of performance, the authors found a positive significant relationship between group cohesion and performance. While the GEQ can be adapted to some extent to student groups, it is not infallible and should not be used to study work teams.

As mentioned earlier, Evans and Dion (1991) conducted a meta-analysis of studies on the relationship between group cohesion and performance. The authors examined 16 studies that had been published at the time on the topic. They found that the relationship is moderately strong and positive. Cohesive groups tend to be more productive (Evans & Dion, 1991). However, the authors noted that most studies in their meta-analysis included work teams that did not strictly resemble groups in real-life field settings. Several studies later contested Evans and Dion's (1991) work, specifically the lack of moderators, the sample size, and the large confidence interval (Gully, Devine, & Whitney, 1995).

In 2009, Casey-Campbell and Martens strived to make sense of the group cohesion-performance literature. The authors identified a predominant positive relationship between the

two variables in most studies but called for more research to determine whether this association has an underlying common cause.

Kaymak's (2011) article provides a robust conceptualization of group cohesion and a valid scale to measure it. The author identified three dimensions of group cohesion which could potentially affect performance. However, this author also studied university students, and performance was measured as an assignment grade.

In this cross-national study, I consider job performance at the team level and use a robust conceptualization of team cohesion to impart further insights into the cohesion-performance research corpus. Team cohesion is conceptualized as the product of social integration, professional growth, and past experiences (Kaymak, 2011). Team performance is conceptualized as the product of productivity, system viability, and professional growth (Hackman, 1990). The goal is to see how these dimensions could be linked. Because social integration encompasses attraction to the group, satisfaction with other members, and social interactions, work teams with high levels of integration foster a positive work environment in which the group output is expected to be substantial. This directly relates to the productivity component of group cohesion. Teams with positive previous experiences will likely look forward to teamwork. As a consequence, carrying out the work will enhance the capability of team members to work interdependently in the future, resulting in high levels of system viability. Lastly, a cohesive team will have high levels of collective self-esteem. Consequently, the group will have a strong influence on a member's self-concept. Group experiences will thus highly contribute to the growth and personal well-being of members, resulting in high levels of professional growth. The strong connections between the dimensions of team cohesion and team performance lead us to the following hypothesis:

Hypothesis 3. Team cohesion will be positively related to team performance.

Team cohesion appears to mediate the relationship between social interactions inside and outside the workplace and team performance. The relationship between social interactions and team performance is not likely direct. Team members could spend time together and know each

other, but they will not perform well before developing some form of positive chemistry, or cohesion. This leads us to the following two hypotheses:

Hypothesis 4a. Team cohesion will mediate the relationship between informal interactions with team members inside the workplace and team performance.

Hypothesis 4b. Team cohesion will mediate the relationship between informal interactions with team members outside the workplace and team performance.

Figure 1 provides a summary of the theoretical framework of the paper, including all hypotheses. Informal interactions inside the workplace and informal interactions outside the workplace are the independent variables of the study, team cohesion is the mediator, and team performance is the ultimate dependent variable.

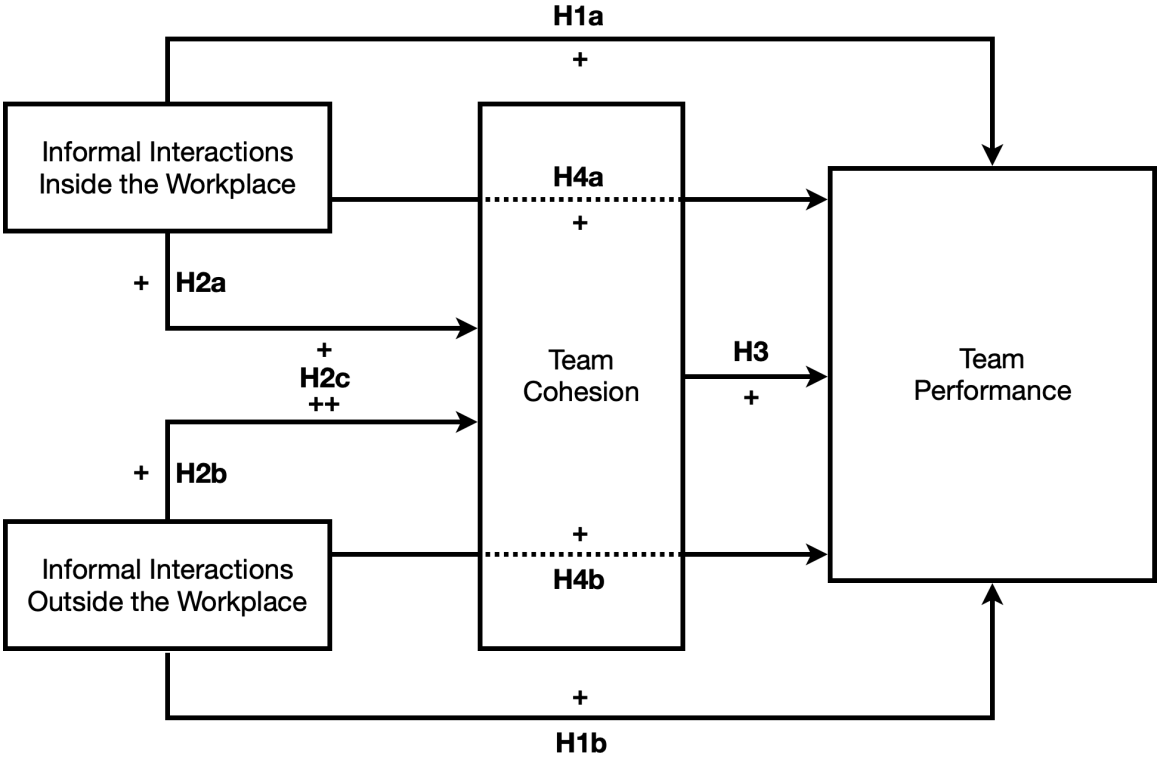

Figure 1. Theoretical Model

Method

Data

This research paper has a foundational qualitative component, but remains essentially quantitative; it is purely based on primary data.

The initial qualitative component provided valuable knowledge that was used to establish a thorough measure of informal social interactions in and outside of the workplace. Brief informal interviews were conducted with people in various countries using convenience sampling. Participants were simply asked to provide a list of the types of social interactions going on in their work teams. Their answers were used to determine the most prevalent types of social interactions between coworkers. Before taking part in the interview, each participant was informed that their answers would be used anonymously. All participants agreed to the terms of the study before taking part in the interview.

I collected primary data in the form of an online survey. The survey consisted of rather straightforward questions that could be answered by anyone with moderate English or French proficiency. Participants were asked to describe the frequency of their informal social interactions with their work team members, as well as to provide assessments of team cohesion and performance. A transcript of the survey questions is available in the Appendix. Each participant was informed of how their data would be used, while maintaining anonymity, before taking part in the study. All participants agreed to the terms of the study before taking part in the survey.

Please note that the methodology of this research has been reviewed and approved by the Office of Research at Concordia University.

Sample

Preliminary qualitative component

I asked four people chosen at random from my contacts for a list of the most common types of social interactions going on in their work teams. All four participants were employed and worked

in teams. Participants ranged in age from 24 to 56 years old, with a mean age of 40.00 years old. The sample consisted of 50.00% of women and 50.00% of men. Participants resided in the United States, France, Iran, and the United Kingdom. Their lists were refined and combined to only include informal social interactions in and outside of the workplace. These constituted the measure of social interactions used in the survey.

Research survey

The target population of this research consisted of corporate employees. I used a snowball sampling approach. To ensure data richness and cultural variability, the online survey was sent to 14 key connections residing in Australia, Canada, France, Germany, Iran, the United Kingdom, and the United States. These participants were asked to forward the survey among their social circles in various industries and countries.

Two hundred and twenty-eight people took part in the study, including the initial 14 participants. Around 9.21% (n=21) of survey respondents did not work in teams and 23.25% (n=53) did not fully complete the survey; they were thus not included in the analysis. 13 participants reported working in teams of more than 40 people, which does not seem logical. After removing these 13 outlier observations, the final sample includes 141 participants originating from 29 different countries and residing in 10 countries. All 141 participants answered the survey correctly and were included in the study. 62.41% of participants answered the survey in English and 37.59% answered the survey in French. Due to the nature of the sampling method and because the survey was posted and shared among different circles, there is no way of estimating an accurate response rate.

Participants ranged from 20 to 79 years old, with a mean age of 37.57 years (SD=15.67), and a median age of 28.00. The sample consisted of 60.28% women and 39.01% men (.71% did not disclose their gender or did not identify as either man or woman).

Most of the participants (55.32%) resided in Europe (France, Germany, and the United Kingdom), 23.40% in North America (Canada and the United States), 17.73% in Oceania (Australia), 2.84% in Asia (Iran and Taïwan), and .71% in South America (Brazil). This

distribution changes when considering the countries of origin: 53.19% of participants originated from European countries, 19.15% from North America, 14.89% from Asia, 11.35% from Oceania, 3.55% from Africa, and 2.84% from South America. Participants can have more than one country of origin.

The participants had been working at their organization for 7.10 years on average (SD=9.27) and had been part of their team for 3.28 years (SD=4.45). The average team was composed of 12.46 employees (SD=8.18). The average team had moderate scores of gender diversity (x=3.29, SD=1.14, on a scale from 1=not diverse at all to 5=very diverse) and age diversity (x=3.30, SD=1.03, on a scale from 1=not diverse at all to 5=very diverse). In addition, 44.68% of participants were married or equivalent, and 33.33% of them had at least one child living at home. The most popular industries among participants were "Information Services and Data Processing" (15.60%), "Finance and Insurance" (12.77%), "Construction" (11.35%), and "Software" (9.93%). The richness of this dataset allows for the robustness of the results. A transcript of the survey questions is available in the Appendix.

Measures

Informal social interactions

The independent variables of this study are informal social interactions inside and outside the workplace. The initial interviews helped to identify which informal social interactions predominated the work environment at the time of the study. These were separated into two categories: informal social interactions inside the workplace and informal social interactions outside the workplace. I looked at the role of each category separately. I thought that giving participants a specific time frame would help guide their answers. Therefore, I asked them to refer to the month before the COVID-19 Pandemic started affecting their work routines when answering the questions about social interactions inside and outside the workplace. Participants were also asked about the frequency of virtual interactions during the pandemic.

Informal social interactions inside the workplace. This category contains five items that were developed following the qualitative preliminary interviews. They refer to employees'

informal social interactions with team members at the workplace. These include 'informal meeting in the cafeteria', 'lunch break in the cafeteria', 'work gym', 'break room', and 'smoke break'. Participants were asked how often these informal social interactions occurred with their team members in a typical week.

Informal social interactions outside the workplace. This category contains nine items that were developed following the qualitative foundational study. They refer to employees' informal social interactions with team members outside the workplace. Four of these items are considered common: 'post-work happy hour', 'lunch break outside of work', 'outside gym', and 'commuting together/carpooling'. Participants were asked how often these informal social interactions occurred with their team members in a typical week. The other five items are considered less common: 'mini-vacation trip', 'dinner party', 'sporting events', 'going to the movies', 'going to a live performance'. Participants were asked how often these informal social interactions occurred with their team members in a typical month.

Because of their varying scales, all interaction items were converted to a scale of times per month. Items were added to form two additive scales. Since items compete for people's limited time, it is not necessary to compute the alpha coefficient of these two scales.

Team cohesion

This variable is the mediator of the study. Kaymak (2011) uses the dimensions of social integration, past experience, and collective self-esteem to define this concept. Social integration refers to the process through which new members blend into the social structure of the group. Past experiences denote how a member perceived his relationship with his group in the past. Collective self-esteem is a member's self-image that stems from its group interactions. For this study, I adapted Kaymak's (2011) questionnaire to better suit workplace and team dynamics: I replaced *"group"* or *"the group I belong to"* by *"team"* or *"my team"*. Each of the 25 items was answered using a 5-point Likert-type scale concerning team cohesion (1 = strongly disagree, 5 = strongly agree). Some questions were reverse-coded, which has been taken into account in the

analysis. All 25 scores were merged into a single index of team cohesion. With an alpha coefficient of .92, this scale is considered reliable in the present sample.

Team performance

This variable is the ultimate dependent variable of this thesis. Due to the challenges of measuring actual team performance based on the sampling method, I measured team performance subjectively instead. This subjective measure is expected to be as valid as a measure of actual team performance for the purpose of this study.

Following Chang and Bordia's (2001) approach, this measure consists of three different dimensions developed by Hackman (1990): productivity, system viability, and professional growth.

Productivity was measured using two different items. Participants were asked to rate how productive they thought their team was on a 5-point Likert-type scale (1 = not productive at all, 5 = very productive), and how well they thought they had worked together as a group in the past (1 = very poor, 5 = very good).

System viability was also measured using two items. Participants were asked to rate how much they enjoyed working with other members on a 5-point Likert-type scale (1 = very little, 5 = very much), and how much they would like to work again with the same group for future tasks (1 = not at all, 5 = very much).

Professional growth was measured using two items as well. Participants were asked to rate how much technical knowledge they had learned on group projects on a 5-point Likert-type scale (1 = not much at all, 5 = very much), and how much group tasks had helped them understand how to work in a team environment (1 = not much at all, 5 = very much).

All six scores were merged into a single index of team job performance. With an alpha coefficient of .82, this scale is considered reliable in the present sample.

Descriptive variables

Participants were asked to indicate their age, gender, marital status, number of children living at home, industry, country of residence, and country of origin. They were also asked to describe

their work teams in terms of size, age diversity, and gender diversity, as well as to indicate how long they had been a part of their work teams.

Procedure

For the purpose of this cross-sectional study, I have gathered survey data on one occasion. After reviewing and cleaning the data set, I ran a series of linear regressions to look for potential relationships based on the hypotheses developed in the first section of the thesis.

Results

Descriptive Statistics

Table 1 provides a summary of the descriptive and correlational statistics of the variables under study: informal interactions inside the workplace, informal interactions outside the workplace, team cohesion, and team performance. On average, the participants had informal interactions with team members about 34 times per month while they were at the workplace and about 6 times per month while they were outside the workplace. On average, team cohesion and team performance had moderate to high scores (M= 3.752 and M=3.917, respectively).

Table 1. Descriptive Statistics and Correlations

Variables	M	SD	1	2	3	4	5	6
1. Age	37.570	15.667	-					
2. Gender	.394	.488	.092	-				
3. Informal social interactions inside the workplace	34.096	32.180	.055	.105	-			
4. Informal social interactions outside the workplace	6.150	8.349	-.189*	.057	.128	-		
5. Team Cohesion	3.752	.580	.020	.112	.218**	.227**	**.920**	
6. Team Performance	3.917	.634	-.013	-.021	.217**	.347**	793**	**.823**

*Notes. *p<.05. **p<.01. N=141.*
Cronbach's alpha reliabilities are included in bold on the main diagonal.
Gender (0=Woman, 1=Man, 0.5=Other).

Hypothesis Testing

Informal Interactions Inside the Workplace and Team Performance

Hypothesis 1a aims to assess whether informal social interactions inside the workplace affect team performance. Table 1 provides the correlation statistic between informal social interactions inside the workplace and team performance. According to these results, there is a significant positive relation between them ($r=.217$, $p<.01$). This is promising for Hypothesis 1a.

This hypothesis was also tested using a simple linear regression (see Table 2). Model 1 tests the relationship between informal interactions inside the workplace and team performance. As presented in Table 2, the model has an R^2 value of .047, which means that 4.70% of the variance in team performance can be explained by the regression model. The model is significant at the .01 level ($p=.010$). Moreover, informal interactions inside the workplace are positively and significantly related to team performance ($\beta=.004$, $p=.010$). Therefore, Hypothesis 1a is supported at the 99% confidence level.

Informal interactions inside the workplace are a good predictor of team performance due to the positive relationship between the two variables. A simple scatter plot of the linear regression tested in Model 1 is provided in the Appendix (Figure 2).

Table 2. Results of the Simple Linear Regression Predicting Team Performance from Informal Social Interactions Inside the Workplace

	Model 1	
Parameters	***β(SE)***	***p***
Informal Interactions Inside the Workplace	.004** (.002)	.010
(Constant)	3.772* (.076)	.000
Sig.	.010	
R^2	.047	

*Notes. **p<.01. N=141. Dependent variable: Team Performance.*

Informal Interactions Outside the Workplace and Team Performance

Hypothesis 1b aims to assess whether informal social interactions outside the workplace affect team performance. Table 1 provides the correlation statistic between informal social interactions outside the workplace and team performance. According to these results, there is a significant positive relation between them ($r=.347$, $p<.01$). This is promising for Hypothesis 1b.

This hypothesis was also tested using a simple linear regression (see Table 3). Model 2 tests the relationship between informal interactions outside the workplace and team performance. As presented in Table 3, the model has an R^2 value of .121, which means that 12.10% of the variance in team performance can be explained by the regression model. The model is significant at the .01 level ($p<.001$). Moreover, informal interactions outside the workplace are positively and significantly related to team performance ($\beta=.026$, $p<.001$). Therefore, Hypothesis 1b is supported at the 99% confidence level.

Informal interactions outside the workplace are a good predictor of team performance due to the positive relationship between the two variables. A simple scatter plot of the linear regression tested in Model 2 is provided in the Appendix (Figure 3).

Table 3. Results of the Simple Linear Regression Predicting Team Performance from Informal Social Interactions Outside the Workplace

	Model 2	
Parameters	***β(SE)***	***p***
Informal Interactions Outside the Workplace	.026** (.006)	.000
(Constant)	3.755* (.063)	.000
Sig.	.000	
R^2	.121	

*Notes. **p<.01. N=141. Dependent variable: Team Performance.*

Informal Interactions Inside the Workplace and Team Cohesion

Hypothesis 2a aims to assess whether informal social interactions outside the workplace affect team cohesion. Table 1 provides the correlation statistic between informal social interactions inside the workplace and team cohesion. According to these results, there is a significant positive relation between them (r=.218, p<.01). This is promising for Hypothesis 2a.

This hypothesis was also tested using a simple linear regression (see Table 4). Model 3 tests the relationship between informal interactions inside the workplace and team cohesion. As presented in Table 4, the model has an R^2 value of .048, which means that 4.80% of the variance in team cohesion can be explained by the regression model. The model is significant at the .01 level (p=.009). Moreover, informal interactions inside the workplace are positively and significantly related to team cohesion (β=.004, p=.009). Therefore, Hypothesis 2a is supported at the 99% confidence level.

Informal interactions inside the workplace are a good predictor of team cohesion due to the positive relationship between the two variables. A simple scatter plot of the linear regression tested in Model 3 is provided in the Appendix (Figure 4).

Table 4. Results of the Simple Linear Regression Predicting Team Cohesion from Informal Social Interactions Inside the Workplace

	Model 3	
Parameters	***β(SE)***	***p***
Informal Interactions Inside the Workplace	.004** (.001)	.009
(Constant)	3.617* (.070)	.000
Sig.	.009	
R^2	.048	

*Notes. **p<.01. N=141. Dependent variable: Team Cohesion.*

Informal Interactions Outside the Workplace and Team Cohesion

Hypothesis 2b aims to assess whether informal social interactions outside the workplace affect team cohesion. Table 1 provides the correlation statistic between informal social interactions outside the workplace and team cohesion. According to these results, there is a significant positive relation between them (r=.227, p<.01). This is promising for Hypothesis 2b.

This hypothesis was also tested using a simple linear regression (see Table 5). Model 4 tests the relationship between informal interactions outside the workplace and team cohesion. As presented in Table 5, the model has an R^2 value of .052, which means that 5.20% of the variance in team cohesion can be explained by the regression model. The model is significant at the .01 level (p=.007). Moreover, informal interactions outside the workplace are positively and significantly related to team cohesion (β=.016, p=.007). Therefore, Hypothesis 2b is supported at the 99% confidence level.

Informal interactions outside the workplace are a good predictor of team cohesion due to the positive relationship between the two variables. A simple scatter plot of the linear regression tested in Model 4 is provided in the Appendix (Figure 5).

Table 5. Results of the Simple Linear Regression Predicting Team Cohesion from Informal Social Interactions Outside the Workplace

	Model 4	
Parameters	***β(SE)***	***p***
Informal Interactions Outside the Workplace	.016** (.006)	.007
(Constant)	3.654* (.059)	.000
Sig.	.007	
R^2	.052	

*Notes. **p<.01. N=141. Dependent variable: Team Cohesion.*

Hypothesis 2c aims to assess whether the effect of informal social interactions outside the workplace on team cohesion is stronger than the effect of informal social interactions inside the workplace on team cohesion. According to Models 3 and 4 (see Tables 4 and 5), informal social interactions outside the workplace (R^2=.052, β=.016, p=.007) seem to be a better predictor of team cohesion than informal social interactions inside the workplace (R^2=.048, β=.004, p=.009). Thus, there is preliminary evidence supporting Hypothesis 1c.

Team Cohesion and Team Performance

The aim of Hypothesis 3 is to assess whether team cohesion has an effect on team performance. Tables 1 provides the correlation statistics between team cohesion and team performance. According to these results, there is a significant positive relation between them (r=.793, p<.01). This is very promising for Hypothesis 3.

Hypothesis 3 was also tested using a simple linear regression (see Table 6). Model 5 tests the relationship between team cohesion and team performance. As presented in Table 6, the model has an R^2 value of .629, which means that 62.9% of the variance in team performance can be explained by the regression model. The model is significant at the .01 level (p<.001). Moreover, team cohesion is positively and significantly related to team performance (β=.868, p<.001). Therefore, Hypothesis 3 is supported at the 99% confidence level.

Team cohesion is a very good predictor of team performance due to the strong positive significant relationship between the two variables. A simple scatter plot of the linear regression tested in Model 5 is provided in the Appendix (Figure 6).

Table 6. Results of the Simple Linear Regression Predicting Team Performance from Team Cohesion

	Model 5	
Parameters	***β(SE)***	***p***
Team Cohesion	.868** (.056)	.000
(Constant)	.663* (.214)	.002
Sig.	.000	
R^2	.629	

*Notes. **p<.01. N=141. Dependent variable: Team Performance.*

Team Cohesion: A Mediator

The aim of Hypothesis 4a is to assess whether team cohesion has a mediating effect on the relationship between informal interactions inside the workplace and team performance. This hypothesis was tested using the PROCESS macro tool in SPSS. According to the results in Table 7, informal interactions inside the workplace have a significant indirect effect on team performance through team cohesion (estimate=.0034). This result is significant because the confidence interval does not include 0 (LL=.0006, UL=.0080). Thus, team cohesion significantly mediates the relationship between informal interactions inside the workplace and team performance. Hypothesis 4a is supported at the 99% confidence level. Team cohesion accounts for 79.01% of the total effect of informal interactions inside the workplace on team performance (.0034/.0043=79.01%).

The aim of Hypothesis 4b is to assess whether team cohesion has a mediating effect on the relationship between informal interactions outside the workplace and team performance. This hypothesis was also tested using the PROCESS macro tool in SPSS. According to the results in Table 7, informal interactions outside the workplace have a significant indirect effect on team performance through team cohesion (estimate=.0130). This result is significant because the confidence interval does not include 0 (LL=.0045, UL=.0256). Thus, team cohesion significantly mediates the relationship between informal interactions outside the workplace and team

performance. Hypothesis 4b is supported at the 99% confidence level. Team cohesion accounts for 49.24% of the total effect of informal interactions outside the workplace on team performance (.0130/.0264=49.24%).

Table 7. PROCESS Results of the Mediating Effects of Team Cohesion

				99% CI	
Independent Variables	***Effect***	***SE***	***p***	***LL***	***UL***
Informal Interactions Inside the Workplace					
Total Effect	.0043**	.0016	.0099	.0000	.0085
Direct Effect	.0009	.0010	.3910	-.0018	.0036
Indirect Effect	.0034**	.0015*	.0000	.0006*	.0080*
Informal Interactions Outside the Workplace					
Total Effect	.0264**	.0060	.0000	.0106	.0422
Direct Effect	.0134	.0039	.0008	.0032	.0235
Indirect Effect	.0130**	.0039*	.0000	.0045*	.0256*

*Notes. *Bootstrap values. **p<.01. N=141.*
Dependent variable: Team Performance.
Mediator: Team Cohesion.

Supplemental Analysis: Virtual Interactions

While the present research does not have any hypotheses on the relationship between virtual interactions and team cohesion, the spread of this type of interactions in the past years cannot be ignored. The average participant spent 51.30 hours per month on virtual interactions with team members (SD=48.08). Among the key variables of the study, team cohesion had the only significant correlation with virtual interactions (r=.222, p=.008).

Discussion

The purpose of this thesis was to investigate the phenomena that underlie team cohesion and team performance. These dynamics are essential to the understanding of the factors that lead to a well-functioning team. After reviewing relevant literature, I approached this subject through the concepts of informal social interactions inside and outside the workplace. While plenty of studies have examined the consequences of team cohesion, there has been little to no research on the factors leading to cohesive teams in business organizations. Eight hypotheses were developed in this research.

Hypothesis 1a proposed a positive relationship between informal social interactions inside the workplace and team performance. After analyzing survey responses from 141 individuals around the world, I found significant evidence to support this hypothesis at the 99% confidence level. Informal social interactions inside the workplace have a positive impact on team performance. Several factors could explain this. These interactions are bound to be somewhat related to work due to the environment. However, while fostering productive behaviors such as helping another team member or discussing concerns, these effects on performance potentially could be slightly hampered by the very same environment that enabled them in the first place.

Hypothesis 1b proposed a positive relationship between informal social interactions outside the workplace and team performance. Similarly, I found significant evidence to support this hypothesis at the 99% confidence level. Informal social interactions outside the workplace have a positive impact on team performance. This relationship is however stronger than the relationship between informal social interactions inside the workplace and team performance. The less restrictive environment that allows team members to know each other on a more personal level could explain this difference.

Hypothesis 2a proposed a positive relationship between informal social interactions inside the workplace and team cohesion. After analysis, I found significant evidence to support this hypothesis at the 99% confidence level. Informal social interactions inside the workplace have a positive impact on team cohesion. As discussed in the previous sections of this thesis, social

interaction patterns are recognized to be derivative of the spatial configuration they are a part of (Backhouse & Drew, 1992). Thus, the workplace environment can heavily influence the nature of interactions at work. These interactions face inevitable constraints due to a formal context that can sometimes be hostile toward informal and personal conversations. Another explanation is that employees are not necessarily in a sociable mindset during work hours. Employees may focus on work tasks and give less importance to social interactions or the formation of relationships. During informal meetings and breaks, employees feel less of a time constraint and can express themselves freely among peers, leading to an increase in team cohesion.

Hypothesis 2b predicted a positive relationship between informal social interactions outside the workplace and team cohesion. This hypothesis found support at the 99% level following data analysis. Informal social interactions outside the workplace are positively related to team cohesion. The reason for this is probably due to the fact that interactions outside the work environment are more laid-back because team members do not face as many constraints. Employees can interact without thinking of their perhaps stressful work environments and the context can lead to increased familiarity and trust (Cui, Vertinsky, Robinson, & Branzei, 2018; Meier & Spector, 2013). Unlike workplace interactions, these interactions help maintain stronger and more intimate relationships, which is assumed to benefit team cohesion. These interactions can potentially stimulate deeper and more personal conversations than informal interactions inside the workplace.

Through Hypothesis 2c, I expected the relationship between informal social interactions outside the workplace and team cohesion to be stronger than the relationship between informal interactions inside the workplace and team cohesion. The results indicate that informal social interactions outside the workplace do have a stronger impact on team cohesion than informal social interactions inside the workplace. These findings may suggest that employees who spend more time with work team members outside the workplace will improve the cohesion of their team better than those who only interact inside the workplace.

Hypothesis 3 anticipated a positive relationship between team cohesion and team performance. After analysis, I found significant evidence to support this hypothesis at the 99%

level. Team cohesion is strongly, positively, and significantly related to team performance. These findings suggest that cohesive teams will perform better than non-cohesive teams. These results are in agreement with the extant literature on the matter (Casey-Campbell & Martens, 2009; Evans & Dion, 1991). The richness of this thesis lies in the robust conceptualization and measures of both team cohesion and team performance in the work context. By operationalizing team performance as a combination of productivity, system viability, and professional growth, this thesis adds much-needed depth to the construct. The high levels of social integration, collective self-esteem, and past experiences exhibited by cohesive teams seem to lead to increased levels of productivity, system viability, and professional growth. The fact that the dimensions of team cohesion appear to strongly impact each of the three dimensions of team performance can explain the positive relationship between the two variables.

Hypotheses 4a and 4b proposed a mediating effect of team cohesion on the relationships between informal interactions inside the workplace and team performance (4a), and informal interactions outside the workplace and team performance (4b). Both hypotheses found strong support. The effects of informal social interactions inside and outside the workplace on team performance are both mediated by team cohesion. Informal interactions lead to an increase in team cohesion, which consequently increases team performance.

At the time of writing, the global pandemic has meant that many employees are working from home and can only interact virtually. For this reason, I also looked briefly at the role that virtual interactions may play in the proposed framework. I found that virtual interactions are significantly correlated to team cohesion. Because survey answers concerned recent virtual meetings that were mostly imposed due to the pandemic, it is hard to draw conclusions from these results. It is unclear whether virtual interactions during these meetings led to an increase in team cohesion or whether already cohesive teams had more virtual interactions than non-cohesive teams. Most employees included in this cross-sectional study had been part of their teams before the pandemic.

Contributions

Several conceptual and practical contributions can be drawn from this study. I address the gap in the literature concerning the antecedents of team cohesion and impart further insights into the cohesion-performance research corpus. This thesis identifies and finds evidence supporting a positive relationship between social interactions inside the workplace and team cohesion, and social interactions outside the workplace and team cohesion. To my knowledge, this is the first research to investigate the link between these variables. I contribute to the existing literature on team cohesion by implementing a robust conceptualization of the construct and by shining light on the important role of social interactions on team cohesion. I also focus on the work environment context, which has long been overlooked in past studies. This thesis provides further support for the relationship between team cohesion and team performance. Finally, the diverse and multinational aspects of the data gathered in this research stand out among other studies on the same topic. The sample is internationally representative, which allows for better generalization of the results.

This research offers valuable practical implications as well. It supports the idea that managers should promote interactions among team members outside the workplace. By doing so, managers will stimulate an increase in team cohesion and thus performance amongst their teams. While it can be difficult to influence what employees do during their free time, managers should make sure employees maintain good relationships both inside and outside the workplace. Managers could organize dinner parties or other events that allow for deep conversations to foster team interactions and, consequently, team cohesion. Still, these suggestions can be threatened by rare factors such as world pandemics. Such situations can prevent employees from interacting outside. If hand sanitizers and face masks are not enough, managers should probably encourage virtual interactions instead. This thesis opens the field to further research targeting the role of virtual interactions on team cohesion.

Limitations

This paper is not free of limitations. First of all, the sample size could be more substantial (N=141). While diverse, the sample is not very representative of the working population as attested by the age distribution of the participants (68.09% of participants are under 26 years old or over 46 years old). This is a threat to the external validity of the research because it jeopardizes the full generalizability of the results. Furthermore, due to the sampling method, some teams may be overrepresented in the sample. Indeed, it is unclear whether participants are the only ones describing their teams in the survey or if other members of their team also answered the survey. These limitations can be addressed by acquiring more data using a non-convenient sampling method. Ideally, teams would be represented by a consistent number of members in the sample. This would result in a stronger model and enhance the generalizability of the results.

In this empirical study, I performed a cross-sectional correlation data analysis. It is therefore impossible to confirm the causal direction of the observed relationships. In other words, there is not enough evidence to support that social interactions inside and outside the workplace have direct effects on team cohesion, or that team cohesion has a direct effect on team performance. This limitation could be tackled with a longitudinal design that would allow for a more robust study of these effects. Also, it seems likely that an increase in social interactions inside and outside the workplace may lead to an increase in team cohesion, which, in turn, may lead to increased interactions—resulting in a feedback loop or in an exponential relationship. Spurious relationships between these variables should also be examined. External factors such as team leadership or the nature of work could come into play. This should be taken into consideration when studying social interactions and team performance.

Concerning the survey, 23.25% (n=53) of survey respondents did not fully complete the survey. This could be due to either the survey being too long or the language too complex. Since partial data was not saved, I do not have any information on these participants. The survey took on average 8 minutes and 28 seconds to complete. Some participants could have been discouraged by the 25-item questionnaire on team cohesion at the beginning of the survey.

Another explanation is that the survey was only distributed in English and French. Most participants came from countries with at least moderate English proficiency scores according to the Education First English Proficiency Index (Education First, 2019). Nevertheless, these scores do not speak for the whole population, and some questions could have been perceived as complex. This limitation could be addressed by translating the survey into more languages, making the survey shorter, or offering incentives to the participants.

The items composing the variables for social interactions inside and outside the workplace have been developed through short informal interviews with a few people. These measures could be further expanded by gathering more testimonies from team members in various organizations. In general, a more careful look at the locations in which these informal interactions occur would be necessary. For example, interactions occurring inside the office, cubicle, or other individual workspace have not been included in the analysis. These need to be added to the measure of informal interactions inside the workplace. Furthermore, I drew an implicit link between interaction location and interaction formality. While instinctively conceivable, this link is not guaranteed and needs potential reevaluation.

Most measures included in the survey are subjective and self-reported. Team cohesion is perceived and experienced by team members, self-reporting thus makes sense. Nonetheless, it may be preferable to reduce bias by computing team cohesion as the combination of the scores reported by all members of a single team.

Future Research

Further research should try to address these limitations to the best of their abilities. Specifically, supplemental work should be done to develop more robust measures of social interactions inside and outside the workplace, and investigate their links with measures of team cohesion. A longitudinal study would also provide valuable insights regarding the direction of the relationships under investigation.

As a growing type of social interactions and as a new standard in the work environment, virtual work interactions are gaining prominence. Future studies should investigate the role of these interactions in the work context. A thorough measure of virtual interactions is necessary.

Human interactions form the basis of society. The latter can be defined as a community or social group whose members have developed common traditions and institutions through social interactions with one another (Society, 2020). At a larger scale, each nation forms a specific society. While we do live in a highly globalized world, there are significant differences in people's behaviors depending on the country. This is, of course, a generalization and many people nowadays live in countries with a different culture than that of the countries in which they grew up. This results in a growing number of multicultural individuals, as attested by the sample of the survey.

Geert Hofstede's cultural dimensions theory (2001) would be useful to examine this issue. Because work culture often depends on national culture, employees fitting in their work cultures are more likely to be accepted by their team members, coworkers, and employers (Wayne & Liden, 1995). For example, individualism versus collectivism of national culture represents the "degree to which people in a society are integrated into groups" (Hofstede, 2011, p.7). Employees in individualistic countries will most likely prioritize work tasks over relationships, whereas relationships prevail in collectivistic countries (Hofstede, 2011). When people give importance to relationships, they are more likely to seek meaningful social interactions to ensure the cohesion of the in-group. This suggests that the effects of informal interactions on team cohesion will be weaker for those in countries with higher cultural individualism.

The dimension of indulgence versus restraint is a recent addition to Hofstede's model and has not been extensively researched. A culturally indulgent country will represent a society that allows free gratification of basic and natural human drives connected to life enjoyment and fun. At the opposite, a culturally restraining country represents a society that inhibits the gratification of needs and controls it through strict social norms (Hofstede, 2011). Employees in such countries are reportedly more likely to remember positive emotions (Hofstede, 2011). Because positive emotions allow for more meaningful interactions, it seems that cultural indulgence

would affect how social interactions influence team cohesion. These characteristics suggest that the effects of informal interactions on team cohesion will be stronger for those in countries with higher cultural indulgence. In brief, insights may be critical for managers in multinational enterprises that employ people in different countries.

There are many opportunities for further research on the wide topics of social interactions, team cohesion, and team performance. Identifying the role of cultural factors on these relationships in a global landscape is also important. Lastly, understanding the causal direction of the relationships and establishing the reliability of the results are essential factors of well-rounded studies.

Conclusion

The purpose of this thesis was to uncover the role of informal social interactions inside and outside the workplace on the development of team cohesion and team performance. After performing a thorough literature review on relevant concepts and theory, I proposed eight testable hypotheses. I then collected data using an online questionnaire. After analysis, the results provide significant support for all hypotheses. Specifically, informal interactions inside the workplace are positively related to team performance through team cohesion, and informal interactions outside the workplace are also positively related to team performance through team cohesion. The effects on team cohesion are stronger for informal interactions outside the workplace than for informal interactions inside the workplace. I offered several explanations for these results and discussed conceptual and practical implications. This study is not without its limitations and future research avenues are provided in order to acquire more information regarding the direction and behavior of these relationships. Specifically, the study of virtual interactions and the consideration of the cultural dimensions of individualism and indulgence as moderators of the relationships between social interactions and team cohesion are strongly advised. Overall, this thesis suggests that social interactions outside the workplace should be greatly encouraged in order to increase team cohesion and performance.

References

Aubke, F., Woeber, K., Scott, N., & Baggio, R. (2014). Knowledge sharing in revenue management teams: Antecedents and consequences of group cohesion. *International Journal of Hospitality Management*, *41*, 149-157.

Argyle, M. (2013). *Cooperation: The basis of sociability.* Routledge.

Ashforth, B. E., & Mael, F. (1989). Social identity theory and the organization. *Academy of Management Review*, *14*(1), 20-39.

Backhouse, A., & Drew, P. (1992). The design implications of social interaction in a workplace setting. *Environment and Planning B: Planning and Design*, *19*(5), 573-584.

Bailey, K., & Breslin, D. (2020). The COVID-19 Pandemic: What can we learn from past research in organizations and management?. *International Journal of Management Reviews*.

Bar-Tal, D. (2000). *Shared beliefs in a society: Social psychological analysis.* Sage publications.

Berman, E. M., West, J. P., & Richter, Jr, M. N. (2002). Workplace relations: Friendship patterns and consequences (according to managers). *Public Administration Review*, *62*(2), 217-230.

Bloom, N., Liang, J., Roberts, J., & Ying, Z. J. (2015). Does working from home work? Evidence from a Chinese experiment. *The Quarterly Journal of Economics*, *130*(1), 165-218.

Boxall, P. (1996). The strategic HRM debate and the resource−based view of the firm. *Human Resource Management Journal*, *6*(3), 59-75.

Boyd, R., & Richerson, P. J. (2009). Culture and the evolution of human cooperation. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *364*, 3281-3288.

Buchan, A., & Taylor, J. (2016). A qualitative exploration of factors affecting group cohesion and team play in multiplayer online battle arenas (mobas). *The Computer Games Journal*, *5*(1-2), 65-89.

Butterworth, J., Hagner, D., Helm, D. T., & Whelley, T. A. (2000). Workplace culture, social interactions, and supports for transition-age young adults. *Mental Retardation*, *38*(4), 342.

Cameron, J. E. (2004). A three-factor model of social identity. *Self and Identity*, *3*(3), 239-262.

Carron, A. V. (1982). Cohesiveness in sport groups: Interpretations and considerations. *Journal of Sport Psychology*, *4*(2), 123-138.

Carron, A. V., Widmeyer, W. N., & Brawley, L. R. (1985). The development of an instrument to assess cohesion in sport teams: The Group Environment Questionnaire. *Journal of Sport and Exercise Psychology*, *7*(3), 244-266.

Casey‐Campbell, M., & Martens, M. L. (2009). Sticking it all together: A critical assessment of the group cohesion–performance literature. *International Journal of Management Reviews*, *11*(2), 223-246.

Chadsey, J., & Beyer, S. (2001). Social relationships in the workplace. *Mental Retardation and Developmental Disabilities Research Reviews*, *7*(2), 128-133.

Chang, A., & Bordia, P. (2001). A multidimensional approach to the group cohesion-group performance relationship. *Small Group Research*, *32*(4), 379-405.

Charbonneau, D., & Wood, V. M. (2018). Antecedents and outcomes of unit cohesion and affective commitment to the Army. *Military Psychology*, *30*(1), 43-53.

Cui, V., Vertinsky, I., Robinson, S., & Branzei, O. (2018). Trust in the workplace: The role of social interaction diversity in the community and in the workplace. *Business & Society*, *57*(2), 378-412.

De Jaegher, H., Di Paolo, E., & Gallagher, S. (2010). Can social interaction constitute social cognition?. *Trends in Cognitive Sciences*, *14*(10), 441-447.

Education First. (2019). English Proficiency Index. Retrieved July 01, 2020, from https://www.ef.edu/__/~/media/centralefcom/epi/downloads/full-reports/v9/ef-epi-2019-english.pdf.

Evans, C. R., & Dion, K. L. (1991). Group cohesion and performance: A meta-analysis. *Small Group Research*, *22*(2), 175-186.

Festinger, L., Schachter, S., & Back, K. (1950). *Social pressures in informal groups; a study of human factors in housing.* Harper.

Friedkin, N. E. (2004). Social cohesion. *Annual Review of Sociology*, *30*, 409-425.

Gawel, J. E. (1996). Herzberg's theory of motivation and Maslow's hierarchy of needs. *Practical Assessment, Research, and Evaluation*, *5*(11), 1-3.

Goodman, P. S., Ravlin, E., & Schminke, M. (1987). Understanding groups in organizations. *Research in Organizational Behavior*, *9*, 121-173.

Gully, S. M., Devine, D. J., & Whitney, D. J. (1995). A meta-analysis of cohesion and performance: Effects of level of analysis and task interdependence. *Small Group Research*, *26*(4), 497-520.

Hackman, J. R. (Ed.). (1990). *Groups that work (and those that don't).* San Francisco, CA: Jossey-Bass.

Hadley, L., Poitras, M., Ruggiero, J., & Knowles, S. (2000). Performance evaluation of national football league teams. *Managerial and Decision Economics*, *21*(2), 63-70.

Henderson, M., & Argyle, M. (1985). Social support by four categories of work colleagues: Relationships between activities, stress and satisfaction. *Journal of Organizational Behavior*, *6*(3), 229-239.

Hinde, R. A. (1976). Interactions, relationships and social structure. *Man*, 1-17.

Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations.* Sage publications.

Hofstede, G. (2011). Dimensionalizing cultures: The Hofstede model in context. *Online Readings in Psychology and Culture*, *2*(1), 8.

Höllerer, M. A., Walgenbach, P., & Drori, G. S. (2017). The consequences of globalization for institutions and organizations. *The SAGE Handbook of Organizational Institutionalism*, 214-242.

Jung, M. F. (2016). Coupling interactions and performance: Predicting team performance from thin slices of conflict. *ACM Transactions on Computer-Human Interaction (TOCHI)*, *23*(3), 1-32.

Kao, C. C. (2019). Development of team cohesion and sustained collaboration skills with the sport education model. *Sustainability*, *11*(8), 2348.

Katz, N. (2001). Sports teams as a model for workplace teams: Lessons and liabilities. *Academy of Management Perspectives*, *15*(3), 56-67.

Kaymak, T. (2011). Group cohesion and performance: A search for antecedents. *Ekonomie a Management, 4(1)*, 78-91.

Kim, Y., Park, S., & Kim, T. (2017). The development of a team building program for korean curling team. *International Journal of Applied Sports Sciences*, *29*(2), 155-168.

Kirmeyer, S. L. (1988). Observed communication in the workplace: Content, source, and direction. *Journal of Community Psychology*, *16*(2), 175-187.

Kramer, R. M. (1991). Intergroup Relations and Organizational Dilemmas-The role of categorization processes. *Research in Organizational Behavior*, *13*, 191-228.

Lowenthal, P., Borup, J., West, R., & Archambault, L. (2020). Thinking Beyond Zoom: Using Asynchronous Video to Maintain Connection and Engagement During the COVID-19 Pandemic. *Journal of Technology and Teacher Education*, *28*(2), 383-391.

Meier, L. L., & Spector, P. E. (2013). Reciprocal effects of work stressors and counterproductive work behavior: A five-wave longitudinal study. *Journal of Applied Psychology*, *98*(3), 529-539.

Mollick, E. (2012). People and process, suits and innovators: The role of individuals in firm performance. *Strategic Management Journal*, *33*(9), 1001-1015.

Mullen, B., & Copper, C. (1994). The relation between group cohesiveness and performance: An integration. *Psychological Bulletin*, *115*(2), 210-227.

Murphy, K. R., & Cleveland, J. N. (1995). *Understanding performance appraisal: Social, organizational, and goal-based perspectives.* Sage publications.

O'Reilly III, C. A., Caldwell, D. F., & Barnett, W. P. (1989). Work group demography, social integration, and turnover. *Administrative Science Quarterly*, *34*(1), 21-37.

Organization. (2020). In *Cambridge Dictionary*. Retrieved July 01, 2020, from https://dictionary.cambridge.org/dictionary/english/organization.

Raghuram, S., Hill, N. S., Gibbs, J. L., & Maruping, L. M. (2019). Virtual work: bridging research clusters. *Academy of Management Annals*, *13*(1), 308-341.

Richard, O. C. (2000). Racial diversity, business strategy, and firm performance: A resource-based view. *Academy of Management Journal*, *43*(2), 164-177.

Riordan, C. M., & Griffeth, R. W. (1995). The opportunity for friendship in the workplace: An underexplored construct. *Journal of Business and Psychology*, *10*(2), 141-154.

Rushmer, R. K. (1997). How do we measure the effectiveness of team building? Is it good enough? Team Management Systems−a case study. *Journal of Management Development*, *16*(2), 93-110.

Sachs, J. L., Mueller, U. G., Wilcox, T. P., & Bull, J. J. (2004). The evolution of cooperation. *The Quarterly Review of Biology*, *79*(2), 135-160.

Simmel, G. (1949). The sociology of sociability. *American Journal of Sociology*, *55*(3), 254-261.

Society. (2020). In *Merriam-Webster's online dictionary*. Retrieved July 01, 2020, from https://www.merriam-webster.com/dictionary/society.

Stets, J. E., & Burke, P. J. (2000). Identity theory and social identity theory. *Social Psychology Quarterly*, *63*(3), 224-237.

Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behavior. *Psychology of Intergroup Relations*, *2*, 7-24.

Tekleab, A. G., Karaca, A., Quigley, N. R., & Tsang, E. W. (2016). Re-examining the functional diversity–performance relationship: The roles of behavioral integration, team cohesion, and team learning. *Journal of Business Research*, *69*(9), 3500-3507.

The World Bank. (2020). Individuals using the Internet (% of population). Retrieved July 01, 2020, from https://data.worldbank.org/indicator/IT.NET.USER.ZS.

Wayne, S. J., & Liden, R. C. (1995). Effects of impression management on performance ratings: A longitudinal study. *Academy of Management Journal*, *38*(1), 232-260.

Webb, N. M. (1989). Peer interaction and learning in small groups. *International Journal of Educational Research*, *13*(1), 21-39.

Westre, K. R., & Weiss, M. R. (1991). The relationship between perceived coaching behaviors and group cohesion in high school football teams. *The Sport Psychologist*, *5*(1), 41-54.

World Health Organization. (2020). Timeline of WHO's response to COVID-19. Retrieved July 01, 2020, from https://www.who.int/news-room/detail/29-06-2020-covidtimeline.

Wright, P. M., Dunford, B. B., & Snell, S. A. (2001). Human resources and the resource based view of the firm. *Journal of Management*, *27*(6), 701-721.

Wu, Y. J., Chen, S. C., & Pan, C. I. (2019). Entrepreneurship in the internet age: internet, entrepreneurs, and capital resources. *International Journal on Semantic Web and Information Systems (IJSWIS)*, *15*(4), 21-30.

Appendix
Survey Transcript

In this survey, 'team' refers to a group of employees you often work on common projects with and with whom you interact frequently.

Do you work as part of a team at your workplace?

Yes or No

Social Interactions.

Please refer to last month before the 2020 COVID-19 pandemic affected your normal work routine to answer the following questions.

Here are examples of circumstances in which you have informal interactions with members of your team. How often does this occur in a typical week?

Informal meeting in the cafeteria	___ *times per week*
Lunch break in the cafeteria	___ *times per week*
Work gym	___ *times per week*
Break room	___ *times per week*
Smoke break	___ *times per week*
Post-work happy hour	___ *times per week*
Lunch break outside of work	___ *times per week*
Commuting together/Carpooling	___ *times per week*

Here are examples of circumstances in which you have informal interactions with members of your team. How often does this occur in a typical month?

Mini-vacation trip	___ *times per month*
Dinner party	___ *times per month*
Sporting events	___ *times per month*
Going to the movies	___ *times per month*
Going to a live performance	___ *times per month*

Here are examples of circumstances in which you have virtual interactions with members of your team. How often does this occur in a typical week?

During virtual meetings	
Work-related interactions (focusing on work tasks)	___ *hours per week*
Non-work-related interactions (discussing personal issues or casual chat)	___ *hours per week*
Non-work-related social interactions outside of meetings	
Texts, Telephone, WhatsApp, Skype, Facebook, Facetime, etc.	___ *hours per week*

Team Cohesion

Please choose one of the following for each statement.

Scale: 1 (Strongly disagree) to 5 (Strongly agree)

1. The successes of other members of the team help me achieve my own objectives.
2. The team is confident that members will perform as expected.
3. Relationships between team members are best described as "win-lose", if they win, I lose.
4. Everyone's input is incorporated into most important team decisions.
5. Members of this team trust one another.
6. All coworkers really stick together.
7. Members of this team are always ready to cooperate and help each other.
8. There is a great deal of competition between coworkers of the team.
9. When final decisions are reached, it is common for at least one member of the team to be unhappy with the decision.
10. All team members get along together very well.
11. My team members are quick to defend each other from criticism by outsiders.
12. I am a worthy member of my team.
13. My team is an important reflection of who I am.
14. Overall, I feel like my team is not worthwhile.
15. I am a cooperative participant in the team.
16. I regret that I belong to this team.
17. I feel like I don't have much to offer to the team.
18. In general, belonging to a team is an unimportant part of my self-image.
19. In general, I'm glad to be a member of this team.
20. I feel I am a useless member of the team.
21. I feel good about the team.
22. I generally prefer working in groups to working alone.
23. Overall, the team has little to do about how I feel about myself.
24. I have enjoyed my experiences working with groups in the past.
25. My team is unimportant to my sense of the kind of person that I am.

Team Performance

How would you assess the productivity of your team?

Scale: 1 (Not productive at all) to 5 (Very productive)

How well do you think you have worked together as a group in the past?

Scale: 1 (Not poorly) to 5 (Very well)

How much did you enjoy working with other members of the team?

Scale: 1 (Not much at all) to 5 (A great deal)

How much would you like to work again with the same team for future tasks?
Scale: 1 (Not much at all) to 5 (A great deal)

How much technical knowledge have you learned on team projects?
Scale: 1 (Not much at all) to 5 (A great deal)

How much have group tasks have helped you understand how to work in a team environment?
Scale: 1 (Not much at all) to 5 (A great deal)

Demographics.

How would you rate the gender diversity in your team?
Scale: 1 (Not diverse at all) to 5 (Very diverse)

How would you rate the age diversity in your team?
Scale: 1 (Not diverse at all) to 5 (Very diverse)

What is the size of your team?
___ *employees*

How long have you been a part of your work team?
___ *years*

What is the type of industry of your organization?
[choose from list of 30 industries]

How long have you been an employee of your organization?
___ *years*

What is your occupation?
_____

What gender do you identify with?
Woman or Man or Other

What is your age?
___ years old

What is your marital status?
Married/Equivalent or Single/Divorced/Widowed/Other

How many children do you have living at home?
___ children

In which country do you currently reside?
[choose 1 from list of countries]

What is your country of origin?
[choose at least 1 from list of countries]

Scatter Plots with Fit Line

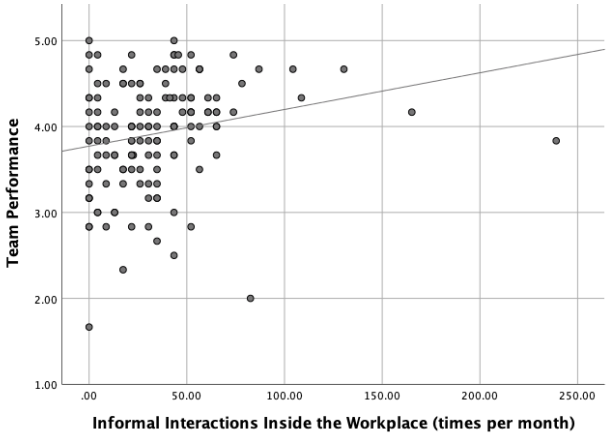

Figure 2.
Scatter Plot of Team Performance by Interactions Inside the Workplace

Figure 3.
Scatter Plot of Team Performance by Interactions Outside the Workplace

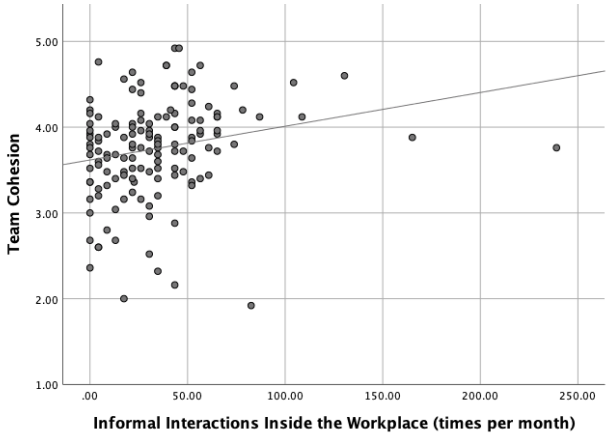

Figure 4.
Scatter Plot of Team Cohesion by Interactions Inside the Workplace

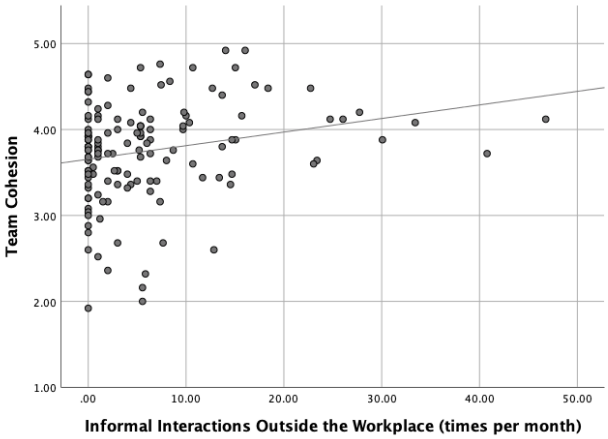

Figure 5.
Scatter Plot of Team Cohesion by Interactions Outside the Workplace

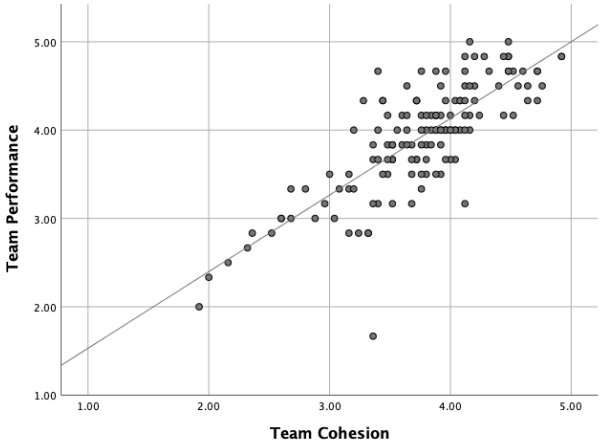

Figure 6.
Scatter Plot of Team Performance by Team Cohesion