

**TWITTER AND STAKEHOLDER ENGAGEMENT IN THE RIO 2016
PARALYMPICS**

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Abstract

The purpose of this study is to use the stakeholder salience model and social network analysis, with a particular focus on the concept of urgency and strength of weak ties, to identify and explore new and previously unknown stakeholders for the Canadian Paralympic Committee using Twitter conversations during the Rio 2016 Paralympic Games. Given the Paralympic Games are hosted globally, and digital and social media are increasingly used as the source for content delivery, sport organizations need to understand who their social media stakeholders are and how to maximize the audience experience. Findings supported the importance of urgency within the context of Twitter and the need to consider both strong and weak ties with the significant appearance of individuals as previously unidentified stakeholders and the emergence of both Paralympic and Olympic athletes as influencers. This research contributes to baseline data about Paralympic sport stakeholders and stakeholder engagement on social media.

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Chapter 1: Introduction

The first Paralympic Games coincided with the opening ceremonies of the 1948 London Olympic Games. The Paralympics were inspired by a spinal cord injury clinic created by Dr. Ludwig Guttmann in 1944 at the close of WWII intended to provide injured British soldiers with an opportunity to compete in organized athletic events. Originally called the Stoke Mandeville Games, they were renamed in 1960 using the Greek word “para” meaning “beside or alongside” and “Olympics” to create “Paralympics.” An agreement between the International Olympic Committee and International Paralympic Committees ensured that both the Olympic and Paralympic Games have been hosted in the same city(ies) since the summer Games in Seoul, Korea (1988) and winter Games in Albertville, France (1992). One of the goals of the stakeholders of the Paralympic Movement is to “showcase the achievements of the elite athletes with a disability, as role models that can inspire and excite” using whatever available communication tools and resources (International Paralympic Committee, 2019).

The Paralympic Games are being hosted in various distant locations (e.g. Pyeong Chang 2018, Tokyo 2020 and Beijing 2022), and consumers and viewers will be watching the Games using both traditional and digital media. With over 94% of Internet users aged between 16-64 having a social media account (Global Web Index, 2020), there is a need for the National Paralympic Committees to understand who their stakeholders are and if new and previously unknown stakeholders are appearing on social media so that they can promote the athletes and the Paralympics. The Canadian Government has made it a ministerial mandate to promote Canadian athletes at the Rio 2016 Paralympics both internationally and domestically (Trudeau, 2015).

This study is grounded on stakeholder and social network theories and will use a combination of the Stakeholder Saliency Model (SSM) developed by Mitchell et al. (1997, p.859) and Social Network Analytics (SNA) to identify existing and potential stakeholders on Twitter. The SSM uses three core attributes, power, legitimacy and urgency, to classify stakeholders. The research questions within this study will focus on the urgency attribute as it seeks to identify stakeholders on Twitter for the Canadian Paralympic Committee during the Rio 2016 Paralympic Games.

Background

The Canadian government is the single largest investor in Canada's amateur sport system (Department of Finance Canada, 2019) and federal government support is the primary source of funding for many national sport organizations (Abeza & O'Reilly, 2014). Major events such as the Olympics and Paralympics are opportunities to showcase the country's athletes (Eagleman, 2013) and deliver on Canadian Sport Policy 2012 (CSP 2012) objectives through awareness, engagement and athletic results. The Canadian federal government, on behalf of the Canadian taxpayers, is encouraging innovation and at the same time demanding accountability of its investment to ensure efficiency and effectiveness of programs. An example would be the recent funding initiative launched in 2019 by Heritage Canada, Innovative Initiative – Sport Support Program, with the objective to pilot or test quality sport programs aimed to enhance participation of athletes and participants in Canada through innovative, evidence informed approaches. This study seeks to understand if the use of social media data and analytics can help sport organization managers identify new stakeholders that can assist in achieving organizational and national objectives.

The mandate letter issued and publicly shared by Prime Minister Justin Trudeau (2015) for the Honourable Carla Qualtrough, Minister of Sport and Persons with a Disability, referenced the need to support Canada's Paralympic Athletes in Rio 2016. During the Rio 2016 Paralympic Games, Canada fielded a team of 162 athletes who participated in 19 sports over 10 days between September 7 and 18, 2016 and won 29 medals. Canadian coverage of the Games included 200 hours of broadcast coverage as well as 1,000 hours of digital viewing and 17,088 Tweets with @CDNParalympics (Canadian Paralympic Committee, 2016). Given the Olympic and Paralympic Games are in Asia for three consecutive Games (Pyeong Chang, 2018, Tokyo, 2020 and Beijing, 2022), Canadian audiences will be faced with a significant time zone viewing challenge as the competition events in Asia take place during typical Canadian sleeping hours. Since digital and social media are increasingly being used as the source for content delivery, sport organizations need to understand who their social media stakeholders are and how to maximize the audience experience.

Research shows that the customer viewing experience and expectations are also changing with the increased use of social media (Hambrick & Pegoraro, 2014; Sedereviciute & Valentini, 2011). Studies tracking the growth of social media indicate the consumer profile is shifting from creator to distributor (e.g. Abeza & O'Reilly, 2014; Sedereviciute & Valentini, 2011). Organizations have shown an increased desire to use social media as a communication tool to engage directly with different stakeholders and to bypass traditional media (Sedereviciute & Valentini, 2011). The challenge is that many organizations, including sport organizations (Parent & Deephouse, 2007), are using mass media logics, that is, broadcasting rather than engaging, and producing material to be used by mass media to reach an audience, rather than

understanding the potential and flexibility offered by communicating directly with the audience (Grunig, 2009).

Digital and social media are changing the channels, forms and networks of communication, thereby resulting in the emergence of new and different communication stakeholders. In Chapter 2, the literature demonstrates that social media communication has highlighted time sensitivity as a factor both in the delivery and response time resulting in a sense of urgency, which is a key factor in the Stakeholder Salience Model (SSM) (Mitchell et al., 1997, p.859) on which this study is based. The concept of urgency is particularly relevant when considering Twitter since the speed at which content is communicated is immediate and therefore there is an element and expectation of time sensitivity to identify and prioritize the value of the relationship with the stakeholder and then to respond.

From a theoretical perspective, the SSM (Mitchell et al., 1997) takes into account the factor of urgency as it provides a lens to identify and classify different levels of stakeholder salience. While the SSM provides a framework to help sport managers identify and prioritize current stakeholders, the literature will show that the social network reached through Twitter is much broader. Social Network Analysis (SNA) provides an opportunity to collect data and study so called “influencers” on social media networks. Influencers are individuals who can affect behaviours of others and are measured based on their ability to spread information and/or connect to others in the network. A Social Network Theory, the Strength of Weak Ties (SWT) Theory (Granovetter, 1973) considers the diffusion of information between individuals with strong ties, (or close friendships), and then considers the influence between groups with weak ties (or distant relations). It demonstrates that relationships between weak ties can become

important in expanding the network of influence and engaging with new connections. It will be argued in this research that a combination of the Stakeholder Salience Model (SSM) and Social Network Analytics (SNA), together with Granovetter's (1973) Strength of Weak Ties Theory can help to identify from Twitter conversations those influencers who can engage and ultimately expand the network and influence a broader reach. It is these new influencers on Twitter that this research seeks to identify as a potential new group of stakeholders. Using social network analysis of Twitter data gathered during the Rio 2016 Paralympics and mapping known and unknown but important stakeholders and their networks will enable the comparing of network connectivity and influence.

To date considerable sport communication research has been done relating sport and social media with sponsorship, events and sport organizations (e.g. Hambrick & Pegoraro, 2014; Naraine & Parent, 2016). However, there is a gap in the literature when it comes to identifying the characteristics of stakeholders on Twitter who can have an influence during a major sporting event, especially as it relates to Canada and the Rio 2016 Paralympics. There are additional gaps in the literature as it relates to urgency and stakeholder identification on Twitter that this study aims to address. A search of Google Scholar on November 21, 2019 for the terms "Rio Paralympics" yielded 2,430 results compared to 24,400 studies identified using the terms "Rio Olympic." This variance highlights a gap in the number of studies covering the Paralympic Games related research as compared to Olympic Games Research, and this study aims to contribute to the body of Paralympic related research.

Recent years have seen an increase in scholarly articles related to sport and social media. Studies have connected social media with sport sponsorship (e.g., Abeza et al., 2014; Thompson

et al., 2014) major events (e.g., Blaszkas et al., 2012) and sport organizations (Abeza & O'Reilly, 2014; Thompson et al., 2014).

The notion that organizations have stakeholders is widely accepted within the business and academic community (Cornelissen, 2008; Fassin, 2009; Freeman, 1984). Whereas Freeman (1984, p.46) referred to stakeholders as "... any group or individual who can affect or is affected by the achievement of the organizations' objectives", Grunig (2009, p. 6) introduced the concept of prioritizing to enable organizations to focus their attention on individuals who have a stake in the organization. Numerous studies have attempted to classify stakeholders, such as distinguishing between primary and secondary (Clarkson, 1995), direct vs indirect, generic vs specific, legitimate vs derivative (Fassin, 2009). The Stakeholder Saliency Model (SSM) introduced by Mitchell et al. (1997) that I employ in this study is widely accepted for stakeholder classification.

The SSM suggests studying stakeholders based on three different attributes (power, legitimacy and urgency). The different attributes are explained by Mitchell et al. (1997, p. 864) as power (ability to influence an organization), legitimacy (entity with a legitimate relationship or stake in the organization) and urgency (how critical the relationship is with the stakeholder). It is the element of urgency that is of particular relevance to this research because we are investigating opportunities to identify new stakeholders during the Rio Paralympics, a finite time period, using Twitter, a communication platform that the research shows is tied to time sensitive responses. The stakeholders within the SSM can be further categorized into seven different classes ranging from dormant to definitive and also applying a salience ranking based on the number of categories and attributes a stakeholder exhibits.

While the SSM is good for identifying known or existing stakeholders, the process must be performed regularly and Freidman and Miles (2002) noted weaknesses in the model when considering stakeholders with multiple attributes or when taking into account changes in a manager's perceptions over time. The concern regarding stakeholder segmentation is valid but it could be asked of most stakeholder models. The purpose of this thesis is to focus on stakeholder identification and to leverage social network analysis to identify stakeholder activities.

The use of the SSM is particularly interesting when one considers the analysis of social networks using Social Network Theory and the role of weak ties, which Granovetter (1973) articulates in his notion of Strength of Weak Ties (SWT). Granovetter challenged the once commonly held belief that only strong ties or relationships were socially valuable and demonstrated, through his research on job seekers the value of weaker connections. His research showed that close friends and relations tended to be more similar and therefore were more likely to be aware of and to share similar information; however weaker ties enabled a connection with a wider network and expanded opportunities for information sharing and influence. Relating this to the job seeker, the weaker ties were valuable in finding employment since they offered a wider network with whom a job seeker could connect. The theories of "opinion leader" (Katz & Lazarsfeld, 1955) and "influential" (Rogers, 2010) further support the notion of an individual using their social position to influence their personal network and/or visible position within a network to spread messages widely. An influential or opinion leader can be a stakeholder within the communication process through their ability to convince or affect the attitudes or behaviours of other individuals within their networks.

To ensure the organization knows who the stakeholder is and which communities they are trying to reach they need to identify and consider a potentially yet unknown stakeholder group. The unknown stakeholder could be individuals or organizations that are currently nameless or not previously identified as priority stakeholder by the sport organization to be affected or affecting the organizations activities. This is further supported by Williams and Chinn (2010) who found social media to be a valuable tool in the building of client relationships.

The aim of social network analysis (SNA) is to “examine relational systems – networks – in which actors dwell and to determine how the nature of relationship structures impact behaviors” (Rowley, 1997, p. 893). A social network can be understood as a set of nodes (individuals or organizations) linked by a set of social relationships or ties of a specified type (Laumann, 1978). The tie or relation between nodes has both strength and content. “The content can include information, advice, or friendship, shared interest or membership and typically some level of trust” (Castilla et al., 2000, p. 219). Barabasi (2002) noted that even within large networks there may be just a few hubs around which all else is organized. The concept is further supported by Coombs (2011) who explained that within a social media context inclusive of networks, stakeholders and the transfer of online information, “the greater the density and centrality of a stakeholder, the more power that stakeholder has in the relationship” (Coombs, 1998, p. 294). The potential for any individual within the network to share messages should be valued whether they have strong or weak ties when taking into consideration the network structure and relationships strengths (Wang et al., 2013).

Bruns and Burgess (2011) have suggested that social networks and their activities could be measured using social network analysis. While SNA has been used as a methodological tool

to examine a variety of contexts outside of sport (e.g. Bruns & Burgess, 2011; Dubois & Gaffney, 2014), a more limited number of studies have been used to study the relationships within sport online (e.g. Hambrick & Pagararo, 2014; Naraine & Parent, 2016).

This study proposes that when considering Twitter, a combination of the Stakeholder Salience Model combined with SNA will be useful to help identify those stakeholders who will engage and ultimately influence a broader reach. Latent and definitive stakeholders, weak and strong ties are important when considering the urgency surrounding social media and in particular conversations within Twitter. Mapping unknown but important stakeholders within social media using Social Network Analysis enables the comparing of connectivity and content shared (Sedereviciute & Valentini, 2011, p. 222).

Central Research Questions

This study combines the SSM and SNA to identify and explore stakeholders in Twitter conversations during the Rio 2016 Paralympic Games. For clarity within this study, when Twitter influencers are not previously identified as stakeholders by the CPC they are categorized as new and unknown. The following overarching questions adopt a sequential mixed methods approach and are designed to understand if the Canadian Paralympic Committee (CPC) stakeholders are influential in Twitter conversations during the Rio 2016 Paralympic Games.

- Q1: Who are the CPC stakeholders on Twitter during the Rio Paralympic Games?
- Q2: Who were the new and unknown influencers?
- Q3: How does urgency impact the identification of influencers on Twitter?

Methodology

The study is based on a mixed methods approach (Tashakkori & Teddlie, 2003) leveraging both quantitative and qualitative methods for collecting and analyzing data (Creswell, 2003), as well as an inductive and deductive reasoning, to explore the concept of identifying new stakeholders using social media.

The methodology will be informed by an approach used by Sedereviciute and Valentini (2011) to identify and classify unknown stakeholders from within social media using Mitchell et al. (1997) Stakeholder Salience Model and Social Network Analysis. The approach considered five key steps to identify stakeholders using SSM and SNA: 1. Map offline key stakeholders; 2. Organize and identify offline stakeholders into relevant groups; 3. Identify potential stakeholder from social media (application of SNA and shared contents); 4. Classify extracted stakeholders into groups based on connectivity and content divisions; and 5. Combine results from “offline” and “online” stakeholders onto one map.

The methodology within this study will include the use of both SSM and SNA to categorize and compare the stakeholders according to SSM attributes of power, legitimacy and urgency and their salience rankings. Building on the ability to study stakeholder metrics on Twitter, evidence of new and emerging urgent stakeholders will be discussed. A review of the content included within the Twitter influencer biographies and text within the retweets will provide insights into the possible strength of weak ties and impact of urgency that could be leveraged when seeking to expand the stakeholder network to include previously unknown influencers during the Games.

Thesis Structure

Chapter 1: Introduction

The goal of this chapter is to orient the reader as to the study's purpose, explain how it undertakes the research and describes what new perspectives or learnings this study contributes to existing research.

Chapter 2: Literature Review

This chapter critically reviews the relevant literature that has been used as a framework to guide the research, including the Stakeholder Salience Model, social network analysis and its measures of influence, as well as the Strength of Weak Ties Theory,

Chapter 3: Methodology

The research methodology, rationale and justification for the choice of using a mixed method design including both deductive and inductive reasoning, as well social network analysis and content analysis is explained.

Chapter 4: Results

Research results are presented in this chapter in a systematic and contextually applicable format. Presentations of the Lists and tables will illustrate the findings and serve as reference for the analysis.

Chapter 5: Discussion

The discussion relates the results to the research questions and literature and provides an explanation of significant, expected and surprising results.

Chapter 6: Conclusion

The conclusion summarizes the findings of the study, provides key insights and describes implications for the research. Possibilities for further research are addressed.

Chapter 2: Literature Review

This study's research questions and analyses are grounded in Stakeholder theory (Freeman, 1984) and the Stakeholder Saliency Model (Mitchell et al., 1997) with a particular focus on urgency and using social network theory to identify Canadian Paralympic Committee stakeholders during the Rio 2016 Paralympic Games. This chapter will provide an overview of the Stakeholder Saliency Model (SSM) and its applicability to sport. It will review the components of SSM and identify why urgency is a critical attribute of stakeholder identification when considering communicating during a major sport event using Twitter. To understand identification of stakeholders on Twitter, the concepts of influentials and how to identify them using social network analysis tools will be defined and reviewed. Background on the Paralympic Games, Canadian sport system, and SNA within sport will situate the research questions to the Canadian Paralympic Committee and Rio 2016 Games and demonstrate the gap in the Paralympic literature that will be filled with this study.

Stakeholder Literature

While there are several definitions for stakeholder, the most widely used is from Freeman (1984, p. 46) who said that “a stakeholder in an organization is (by definition) any group or individual who can affect or is affected by the achievement of the organizations' objectives.” This broad definition is important because it focuses on the relationship with the external environment and considers the concept that companies can have an impact on or be influenced by a variety of actors (Shahsaurin, 2017, p.18). Alternative definitions provide a narrower focus such as “stakeholders are those groups on which an organization is dependent for survival”

(Freeman & Reed, 1983, p.93). Mitchell et al. (1997) noted that the narrow definitions of stakeholder tended to focus on the organizations' survival instead of groups or individuals that could be associated with the organization's actions. Building on the concept of influence, Savage et al. (1991, p.61) introduced the view that stakeholders have both "an interest in the actions of organization and the ability to influence it".

Stakeholder theory is intended to help managers understand an organization's stakeholders and how to manage them. Numerous studies suggest different models of classification such as distinguishing between internal and external (Freeman, 1984), primary and secondary (Clarkson, 1995) and salience (Mitchell et al., 1997). Stakeholder theory has also been used in a public policy context and Laczniak and Murphy (2012) noted the importance of recognizing different stakeholders when the goal is not profit driven but rather benefitting society.

Freeman (1984) categorizes internal stakeholders as owners, employees, suppliers, and external stakeholders as governments, competitors, special interest groups, media, and advocates. Clarkson (1995) introduced the classification model of primary and secondary stakeholders. Primary stakeholders are deemed critical to the organization's survival and includes groups such as shareholders, investors, employees, customers and suppliers as well as government and communities, legal and regulatory, that provide infrastructure. Secondary stakeholders are deemed not essential but rather have an interest in the organizations and, according to Clarkson, (1995) are "those who influence or affect, or are influenced or affected by, the corporation, but they are not engaged in transactions with the corporation." Secondary stakeholders could disagree with actions taken by the organization to satisfy the primary stakeholders. Based on

Clarkson's definition, the media would be categorized as a secondary stakeholder, which could be problematic when considering brand or image of an organization.

The Stakeholder Salience Model (SSM), introduced by Mitchell, Agle, and Wood (1997), that is employed in this study is widely accepted for stakeholder classification. Using the SSM helps managers determine who and what really count by assigning each stakeholder a level of salience. Mitchell et al. (1997, p.854) define salience as "the degree to which a manager should prioritize competing stakeholder claims". The SSM suggests studying stakeholders based on three different dimensions. The different dimensions are explained by Mitchell et al. (1997, p. 864) as "power" (ability to influence an organization)," legitimacy" (entity with a legitimate relationship or stake in the organization) and "urgency" (how critical the relationship is with the stakeholder).

Power is defined by Weber (1947) as "the probability that one actor within a social relationship would be in a position to carry out his own will despite resistance" (p. 152). Power implies that a stakeholder can make the organization do so something that it would not have otherwise done. This power may be coercive (strength or threat), normative (legislative, media) or utilitarian (holding resources or information) (Mitchell et al., 1997, p.865). According to Mitchell et al. (1997), if a stakeholder is more powerful, decision makers and managers will assign it more salience. Since powerful stakeholders might have influence over other stakeholders, decision makers should be attentive to their needs and expectations.

Legitimacy is defined as the attribution of authority to an individual or position by others (Mitchell et al., 1997, p. 866). Stakeholder legitimacy was defined by Agle et al. (1999) as "a generalized perception or assumption that the actions of an entity are desirable, proper, or

appropriate within some socially constructed system of norms, values, beliefs, and definitions” (p. 574). Weber (1947) has described authority as the legitimate use of power, however Mitchell et al., (1997) propose both the power and legitimacy attributes can exist independently as well.

Adding an element of urgency to the model used to identify stakeholders, arguably changes the model from static to dynamic. Urgency is defined by Mitchell et al. (1997) as the degree to which stakeholder claims require immediate attention. Mitchell et al. (1997) further argued there are two key components to urgency: 1) time sensitivity – degree to which managerial delay is unacceptable to the stakeholder and 2) criticality - the importance of the claim or relationship to the stakeholder. Urgency can vary between stakeholder-manager relationships and also change within a single stakeholder-manager relationship relative to timing. Power, legitimacy and urgency are all considered socially constructed perceptual phenomena and may be perceived falsely by the managers or stakeholders. It is noteworthy that urgency alone will not guarantee high salience in the stakeholder-manager relationship; however, when combined with either power or legitimacy, which are defined as core constructs, it can have an effect on the decision-making salience or action. When combined with both power and legitimacy it will trigger both acknowledgement and action between stakeholders and managers (Mitchell et al., 1997). Wherein social media may involve time sensitivity, the importance of urgency may play a larger role in establishing stakeholder salience. The relationship between power, legitimacy and urgency can be seen in Figure 2.

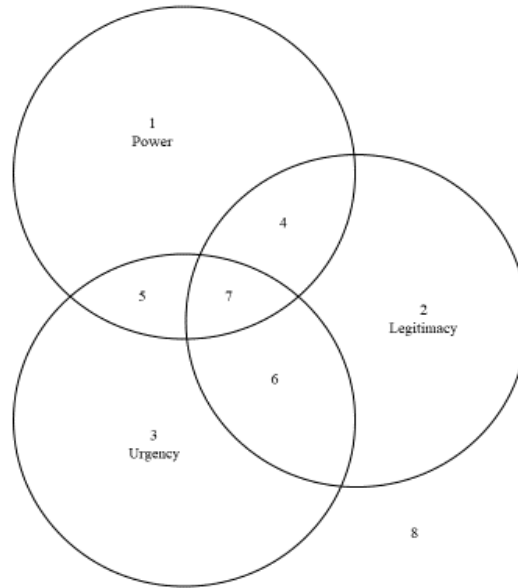


Figure 2: Stakeholder Salience Model, Mitchell et al. (1997)

The stakeholders within the SSM can be further categorized into seven different classes depending on which attributes they possess. These classes range from dormant (possess power), discretionary (legitimate), demanding (urgent), dominant (power and legitimate), dangerous (power and urgency), dependent (legitimate and urgent), and definitive (power and legitimate and urgent). A salience ranking can then be applied based on the number of classes, reflecting the number of attributes assigned to a stakeholder and these stakeholders are prioritized as latent (low salience with one attribute, considered passive), expectant (moderate salience possessing two attributes, probably an active vs passive stakeholder and often described by managers as expecting something) and definitive (high salience with three attributes and should receive

immediate attention) (Mitchell et al., 1997). Attributes, also referred to as elements, and how they can overlap are demonstrated in Figure 3 adapted from Mitchell et al., 1997, p. 873)

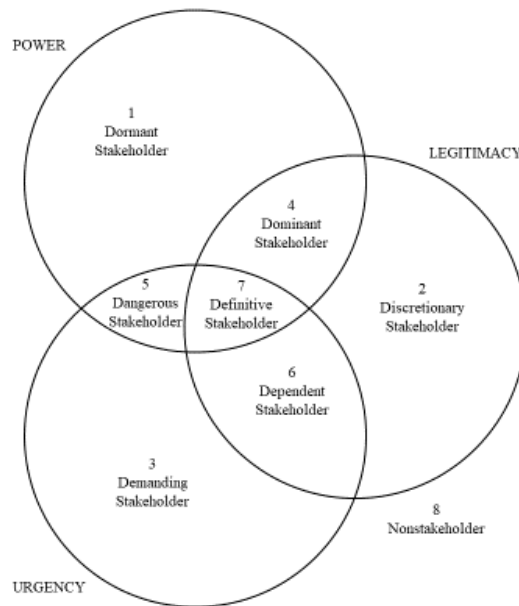


Figure 3: Stakeholder Salience Model, Classes, Mitchell et al., 1997

While the SSM is good for identifying known or existing stakeholders, the process must be performed regularly and Friedman and Miles (2002) noted weaknesses in the model when considering stakeholders with multiple attributes or when taking into account changes in a manager's perceptions of a stakeholder's salience or priority ranking over time. Myllykangas et al. (2011) also found that the SSM was a useful tool, however not sufficient, when considering the importance and value of stakeholder relationships. The attributes of power, legitimacy and urgency helped to reveal definitive stakeholders but in times of strategic change or transition in an organization, the dynamics of the relationship became an important factor and they suggested

considering “how” value is created. The concern regarding stakeholder segmentation is valid and could be asked of most stakeholder models. The purpose of this paper is to focus on stakeholder identification and to leverage social network analysis to identify new and previously unknown urgent stakeholders.

The literature suggests using SSM and SNA is an effective method to identify new stakeholders on social media. Sedereviciute and Valentini (2011) considered the dimension of connectivity within relationships on social media critical to identify new and previously unknown stakeholders. Sedereviciute and Valentini (2011) used SSM and measures of connectivity and content shared using SNA to identify previously unknown stakeholders. The result identified four new categories of stakeholders on social media, unconcerned lurkers (pose no threats or opportunities for an organization, also considered as nonstakeholders), concerned lurkers (express an interest online about an organization however are not currently connected to other members of the network) , concerned influencers (highly connected to the network, share relevant contents online and can influence the network), and unconcerned influencers (connected to the network however do not express an interest about the organization online) that could be mapped to the existing SSM.

In 2007, Parent and Deephouse applied SSM using case studies on two major sporting events in Canada to identify and prioritize stakeholders. The research focused on the Jeux de la Francophonie (2001) and the PanAm Games (1999). Using the definitions provided by Mitchell et al. (1997, p.864) to identify stakeholder attributes for power, legitimacy and urgency, Parent and Deephouse (2007) expanded the coding of the definitions to reflect characteristics and descriptions of power within a major sporting event. Sport specific terms and actions critical to

Games operations were identified as yielding a form of power such as: awarding of games, choosing which events would be included, provision of financial support, establishing protocols and codes of behavior to be followed at the event, selection and presence of athletes (the reason for the Games), overseeing of sport rules and regulations, technical delegates, formalizing and negotiating international contracts (Parent & Deephouse, 2007).

Parent and Deephouse (2007) identified and classified stakeholder groups for both major games according to power, legitimacy and urgency, including Organizing Committees, Canadian government representatives, National Sport Organizations, International sport federations, the media and community. While there have been studies that did apply SSM to identify stakeholders within a sport context (e.g. Hautbois et al., 2012; Naraine & Shenk, 2016; Parent & Deephouse, 2007), they did not include para sport or the Paralympics, nor did they reflect the stakeholders of a national multi-sport organization. This study will add to the body of stakeholder research by using the definitions used by Mitchell et al. (1997) and Parent & Deephouse (2007) to classify and identify sport stakeholders and it will further the research by studying stakeholders supporting a Canadian multi-sport organization and its athletes participating in para sport at the Rio 2016 Paralympics.

Several studies (e.g. French & Le Clair, 2018; Myllykangas et al., 2011; Parent & Deephouse, 2007; Sedereviciute & Valentini, 2011) using SSM have tended to focus on power and legitimacy. However, some researchers (e.g. French & Le Clair, 2018; Myllykangas et al., 2011; Parent & Deephouse, 2007) have acknowledged that urgency should be an area of further study. Mitchell et al. (1997) included urgency because of the dynamic nature of relationships. With the introduction of Twitter in 2006, the ability and potential need for managers to respond

quickly to stakeholder demands has heightened the need to examine the role of urgency within stakeholder identification. In 2010, in preparation of the Vancouver Olympics, the organizing committee proactively worked with activists, unions and important First Nations partners to strengthen relationships (Parent, 2013, p. 21). Previous studies suggested that additional research may identify scenarios whereby stakeholders, such as activists, may change from dormant to demanding or even dangerous stakeholders (Parent & Deephouse, 2007). This study will acknowledge the complete SSM model including the three attributes of power, legitimacy and urgency and accompanying seven classes, however, it will add to the body of stakeholder research by focusing on the urgency attribute and in particular those stakeholders deemed definitive, dependent, demanding and dangerous.

Urgency

Twitter is an effective platform for building relationships with end users because of the potential direct connections between users, however, Twitter also introduces the element of urgency within the stakeholder communication and relationship. According to a study (Huang, 2015) of over 14,040 Twitter users, humanizing the interaction especially when engaged in customer relations by including a representative's name and the brand's Twitter handle resulted in a 77% likelihood of recommending brand support. The same study also highlights the element of urgency, and in particular its definition that refers to time sensitivity, since it reported that when used as a customer service platform, over 60% of Twitter users expected a response within one hour (Huang, 2015).

Companies and organizations are recognizing the value of social media word of mouth communication and have placed a priority on response times to Twitter queries. For example

KLM Royal Dutch Airline (@KLM) aims to respond within the hour and posts the wait time on its Twitter mast head, and Capital One (@AskCapitalOne) endeavours to reply within 30 minutes or less. To provide focused customer support to Twitter conversations and help divert possible complaints from the primary brand, 30% of top brands, including Nike, Microsoft, and American Express have dedicated customer service Twitter handles and 61% of Tweets received to customer support handles were responded to within an hour. In 2016, the Washington Post reported that Metro (Washington Metropolitan Area Transit Authority) had hired tech giant Oracle to help build and manage their social media presence in response to extensive complaints from users actively sharing stories on Twitter using #hotcar and “wmata. These examples demonstrate that companies are recognizing the urgency associated with managing conversations on Twitter (Emerald Publishing Group, 2017).

Organizations and managers that prioritized the importance of responding urgently or very quickly to customers on Twitter have experienced positive results. A study by Elrhoul (2015) of customer service contacts with customers on Twitter reported an average of one to five interactions per request, and 32% resulted in positive solutions. A customer service Airline Impact Study showed that customers who received responses to Twitter posts within 6 minutes were willing to pay on average an additional \$20 for future service on that airline, compared with a \$2.33 for a response rate of over an hour. Similarly, of the users who received a response via Twitter, 82% were likely to share their positive experience via Twitter (Huang, 2015). The convenience and timeliness of being able to share a positive experience lends itself to continuing the positive interaction.

Social Network Analysis

The use of the SSM is particularly interesting when one considers the analysis of social networks using Social Network Theory and the role of weak ties, which Granovetter (1973) articulates in his notion of Strength of Weak Ties (SWT). Granovetter challenged the notion that only strong ties or relationships were valuable and demonstrated through his research on job seekers the value of weaker connections. The research showed close friends and relations tended to be more similar and therefore were more likely to be aware of and to share similar information; however weaker ties enabled a connection with a wider network and expanded opportunities for information sharing and influence. Relating this to the job seeker, the weaker ties were valuable in finding employment since they offered a wider network with whom to connect. A study of 45 Canadian not-for-profit organizations using social media and the application of Granovetter's Strength of Weak Ties theory, found that education based organizations tended focus on information sharing and develop weak ties and relationships on Twitter compared with emotionally infused strong ties and relationships created by organizations that were focused on disaster relief (Deschamps & McNutt, 2014, p.41). The study suggested a coordinated social media approach leveraging both weak tie/strong tie strategies would be useful for the not-for profit sector. The literature further suggests that digital technologies have created a desire to identify the most relevant actors in a social network (Riquelme & Gonzalez, 2016; Naraine et al., 2016) as well as opportunities for new players, lesser known individuals, to become more influential in the communication process (Dubois & Gaffney, 2014).

The aim of social network analysis (SNA) is to “examine relational systems – networks – in which actors dwell and to determine how the nature of relationship structures impact

behaviors” (Rowley, 1997, p. 893). A social network can be understood as a set of nodes (individuals or organizations) linked by a set of social relationships or ties of a specified type (Laumann, 1978). The tie or relation between nodes has both strength and content. “The content can include information, advice, or friendship, shared interest or membership and typically some level of trust” (Castilla et al., 2000, p. 219). Barabasi (2002) noted that even within large networks there may be just a few hubs around which all else is organized. The concept is further supported by Coombs (2011), who explained that within a social media context inclusive of networks, stakeholders and the transfer of online information, “the greater the density and centrality of a stakeholder, the more power that stakeholder has in the relationship” (Coombs, 1998, p. 294). An example in the social media literature related to sport event hosting, reported a case study referencing Granovetter’s strength of weak ties theory, in which there was a strong density and centrality measurement for the local government who then facilitated sponsorship connections between local businesses and the event organizers (Naraine et al., 2016, p. 524). The potential for any individual within the network to share messages should be valued whether they have strong or weak ties when taking into consideration the network structure and strength of relationships (Wang et al, 2013).

Bruns and Burgess (2011) have suggested that social networks and their activities could be measured using social network analysis. While SNA has been used as a methodological tool to examine a variety of contexts outside of sport (e.g. Bruns & Burgess, 2011; Dubois & Gaffney, 2014) a more limited number of studies have been used to study the relationships within sport online (e.g. Hambrick & Pagararo, 2014; Naraine & Parent, 2016).

Influentials

The theories of “opinion leader” (Katz & Lazarsfeld, 1955) and “influential” (Rogers, 2010) further support the notion of an individual using either their social position to influence their personal network or visible position within a network to spread messages widely.

Influentials or opinion leaders can be stakeholders within the communication process through their ability to convince or affect the attitudes or behaviours of other individuals within their networks. Four key facets of influence have been suggested to help identify an individual or group with influence: having a following, being seen as an expert, being knowledgeable, and being in a position within a community to exert social pressure (Dubois & Gaffney, 2014; Katz & Lazarsfeld, 1955). When considering how to measure influence, the who and what, as in who are followers and what is the content and quality of discussion, are critical (Huckfeldt et al., 1995) but so too is considering the path and how the message flows or the actors positioning within the network (Bakshy et al., 2011).

In social networks the actors are referred to as nodes and the relationships or interpersonal ties are considered edges. The introduction of social media platforms such as Twitter (2006), Facebook (2004) and Instagram (2010) and ability to digitally monitor and review trace data on a social network allows researchers to quantify and measure influence. The online social networking platform, Twitter, with millions of users sharing messages on a daily basis is frequently studied by scholars to measure influence using the concept of centrality (Dubois & Gaffney, 2014; Gonzalez, 2016; Pegoraro, 2016).

To measure influence, scholars frequently refer to measures of centrality, and within a social network, the centrality can be represented on a graph wherein the actors are nodes and the

relationships are edges. The centrality of a node can be measured based on several different relevance criteria. The degree centrality measures the number of edges to a node and this can be further defined by indegree (points inward) and outdegree (points outward). Degree centrality is often referred to as measuring popularity, the higher the degree the more connected or popular the person. Betweenness centrality is a node's ability to bridge different subnetworks. Eigenvector centrality measures the connection to well-connected nodes (how popular one's friends are) and closeness refers to a node's closeness to the entire network.

Riquelme and Gonzalez (2016) did a study that compiled a list of different centrality measures, in particular the Twitter influence measures and the types of Twitter API metrics used (follow-up relationships, retweets, mentions, replies, favourite/likes) as well as if they use PageRank, Timeline, Content analysis or Time complexity. The study found most influential users are active, but only a few active users are influential. However, as Cossu et al. (2015) point out, influential users on a social network are not necessarily influential in real life.

Riquelme and Gonzalez (2016) also highlighted it was not necessary for the influential user to actually write the tweet, but rather the influence can spread through node clusters and thereby this extension can be measured by number of users affected by the tweet. Many measures were seen to be used infrequently and it is suggested that new algorithms and measures may continue to be introduced to continue the study of influence on Twitter. For the purposes of this study, we will focus on the studied centrality metrics of indegree and eigenvector centrality to capture the number of followers and/or how far a message travels (Dubois & Gaffney, 2014; Rattananitnont et al., 2012). Table 1 summarizes the main Twitter metrics that will be used in this thesis as well as their relationship to SSM.

Table 1: Social Network Analysis (SNA) Metrics and Associated SSM Attributes

Metric	Description
Nodes	Users
Edges	Interpersonal ties and relationships
Degree	Number of edges of a node. The higher the connection, the more popular.
Indegree	Tweets mention a node (points inward)
Betweenness	Ability to bridge sub networks. Plays broker role that controls flow of information between subnetworks.
Eigenvector	Measures the degrees of a node that node is connected to. The popularity of ones' friends.
Retweets	Republish or repeat a post from another Twitter user
<i>Related to SSM Attributes</i>	
Power	How connected are you to others (Eigenvector) or if you control information flow (Betweenness)
Legitimacy	If others are mentioning you (Indegree)
Urgency	Who's content is retweeted the most (Retweets)

To ensure the organization knows who the stakeholder is and which communities they are trying to reach, it needs to identify and consider a potentially yet unknown stakeholder group. The unknown stakeholder could be individuals or organizations that are currently nameless or not identified as a priority stakeholder by the organization to be affected or affecting the

organization's activities. This is further supported by Williams and Chinn (2010) who found social media to be a valuable tool in the building of client relationships.

This study proposes that when considering Twitter, a combination of the Stakeholder Salience Model combined with Social Network Analysis (SNA) will be useful to help identify those stakeholders who can engage and ultimately influence a broader reach. Latent and definitive stakeholders, weak and strong ties are important when considering the urgency surrounding social media and in particular conversations within Twitter. Mapping unknown but important stakeholders within social media using Social Network Analysis enables the comparing of connectivity and content shared (Sedereviciute & Valentini, 2011).

Sedereviciute and Valentini (2011) proposed a frequently cited approach to mapping stakeholders (see Kumar & Reinartz, 2016; Men & Tsia, 2014; Valentini et al., 2013) that would enable stakeholder theory to take into account for the dynamic nature of social media. Most of the current references that cite the approach are from studies involving social media and public relations. The approach built on the Stakeholder Salience Model by Mitchell et al. (1997) by using Social Network Analysis to identify and classify unknown stakeholders from within social media. The approach considers 5 key steps to identify stakeholders using SSM and SNA:

1. Map offline key stakeholders;
2. Organize and identify offline stakeholders into relevant groups;
3. Identify potential stakeholder from social media (application of SNA);
4. Classify stakeholders into groups based on connectivity and content divisions; and
5. Combine results from "offline" and "online" stakeholder onto one map.

This approach will be used to inform the methodology and results section of stakeholder identification within this study.

Building on the concept of using SNA and stakeholder analysis to evaluate communication channels is a case study by French and Le Clair (2018) of the Rio 2016 Paralympic Games using Netlytic. The study referenced 313 million Twitter users/month in September 2016 (Facebook 1.7 billion/months and Instagram 500 million/month) (Statista, 2016). The potential influence of high-profile individuals such as sport figures such as Cristiano Ronaldo with 49.3 million followers and politicians who had significant followings made them people of interest. The study analyzed six hashtags, including #paralympics, #rio2016, @Rio2016, @Rio2016_en, @Rio2016_es and collected 4.5 million records using Netlytic. The study looked at the #paralympics and English tweets to understand attitudes and interactions between individuals during the Rio 2016 Paralympic Games. Treemaps using the software showed the attitudes were generally positive throughout the Games and the major themes were global, reputation and legacy. The most frequent key words referred to proud, elated, world, great, good and love. The social network graph visualized 38,795 nodes and 61,978 ties, with several dense clusters representing 79.4% individuals retweeting information. While the network graph showed dense groupings because there were a lot of individuals, their study found that conversations were centralized around a small number of participants who controlled most of the flow of information.

French and Le Clair (2018) referred to the “paucity” of traditional media coverage of Paralympic events and highlighted the opportunity presented during the Rio 2016 Paralympic Games for social media, in particular Twitter and Instagram to engage with broader audiences.

They described social media as providing a means by which traditional gate-keepers, journalists and editors can be bypassed and new influencers may appear and engage with audiences.

Relating to concept of urgency, French and Le Clair (2018) refer to Twitter as providing a platform upon which debate can be immediate if users do not feel issues are being sufficiently covered in the mainstream media. A notable comment stresses the need for continued study and use of social media analytics to potentially assist in changing the dialogue in media surrounding the Paralympic Games as well as dis/abled athletes.

Stakeholder Identification in Sport

National sport organizations in Canada as well as organizing committees for most major sports events are not for profit organizations and, as such, need to satisfy multiple stakeholders, not just those who provide financial support. To be eligible to receive funding from the Canadian federal government, a national sport organization must be registered under the Not for Profit Corporation Act and have a sport mandate (Sport Funding, 2019). Thus all 58 federally funded national sport organizations (NSO) and 27 multi-sport service organizations (MSO), including the Canadian Paralympic Committee, and seven Canadian Sport Centres (CSC), are registered not for profit. The Canadian Paralympic Committee posts directly on its website www.Paralympic.ca, that it “is a non-profit, private organization with 27 member sports organizations dedicated to strengthening the Paralympic Movement. The Canadian Paralympic Committee’s vision is to be the world’s leading Paralympic nation. Its mission is to lead the development of sustainable Paralympic sport system in Canada to enable athletes to reach the podium at the Paralympic Games”. Both the Olympic Games and Paralympic Games, major international multi-sport events, are registered as not for profit sport organizations. The

International Olympic Committee (IOC), considered the ‘supreme authority’ of the Olympic Movement, is “a not-for-profit independent international organization that is committed to building a better world through sport” (International Olympic Committee, 2019). Similarly, the International Paralympic Committee (2019), also a not-for-profit, promotes its mission on its website www.paralympic.org, as to “To lead the Paralympic Movement, oversee the delivery of the Paralympic Games and support members to enable Para athletes to achieve sporting excellence.” The international Olympic and Paralympic governing bodies have multiple stakeholders to satisfy. National Olympic and Paralympic organizations, including the Canadian Paralympic Committee, also have multiple stakeholders to satisfy.

Another group that must satisfy multiple stakeholders is the host organizing committee of a major sport event such as the Vancouver Organizing Committee for the 2010 Olympic and Paralympic Games (VANOC) and the Rio 2016 Organizing Committee (Rio 2016 Committee). Various organization and event stakeholders provide different types of resources, (financial, information, human resources, etc.) and the different stakeholders can have different demands, wants and interests. The local hosting community may want accessibility and a lasting positive legacy and reflection on the community. Investors will want a return on investment, media may want access to resources and technology, sport organizations will want field of play aspects including technical support and logistical support such as accommodations and transportation (Parent & Deephouse, 2007). Parent and Smith-Swan (2013) developed a Major Sport Event Stakeholder Map (Figure 1) to provide a visual representation of the complexity and numerous stakeholders involved in hosting a major sport event

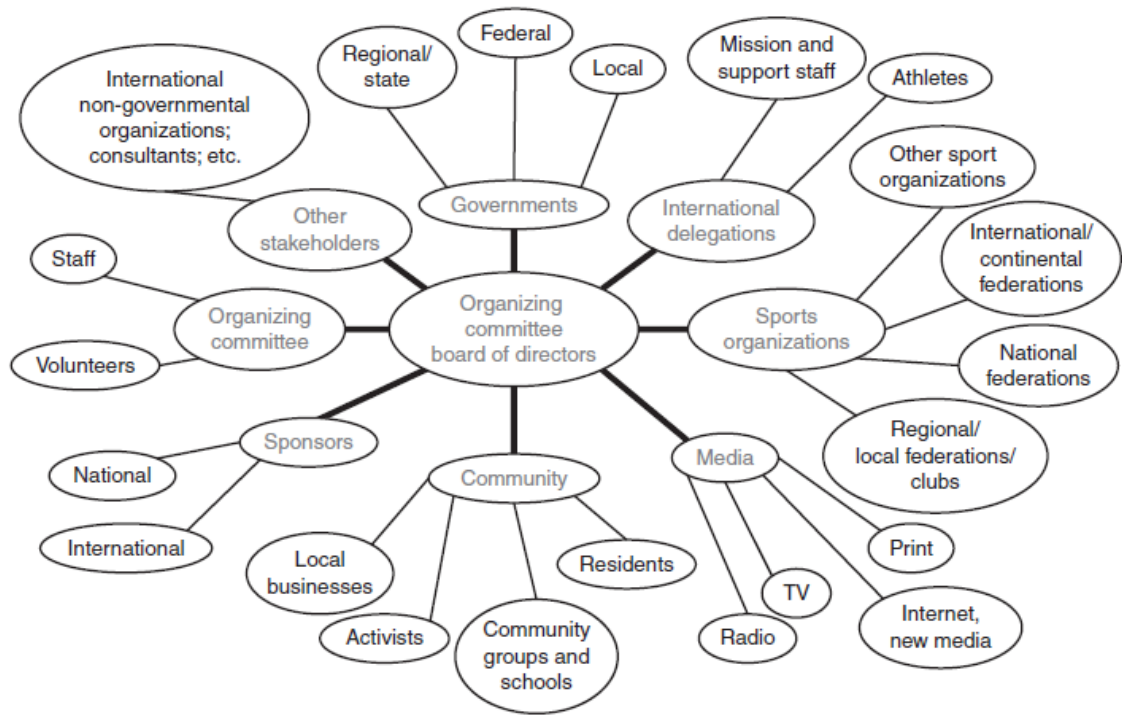


Figure 1: Major Sport Event Stakeholder Map, Parent and Smith-Swan, 2013

Governments are major investors in sport and in return may seek to “increase the nation’s visibility internationally, and to build national pride” (Parent & Deephouse, 2007). This is further supported when reviewing the Mandate Letter given by the Prime Minister of Canada, Justin Trudeau in 2015 to Minister Qualtrough, the Minister of Sport and Persons with Disabilities Mandate Letter, that set out an objective for the Minister to “Lead preparations for the 2016 Rio Olympics and Paralympics and future International sporting events. Create greater links between our athletes and young Canadians to promote health and achievement among youth.”

Just as individuals are different, so too can each group or part of a stakeholder group be different. This difference is called heterogeneity. For major sport events, understanding the

difference between local ticket consumers and those who travel to follow sport events or teams is quite important. The local consumer may be interested more on the impact of the event on their community whereas fans who travel, often have a high sport subculture and fan motivation (Snelgrove et al, 2008). Research has shown that event hosting committees should pay closer attention to what different groups within stakeholders (ex. Ticket consumers) want and thus tailor their communication messaging (Parent & Deephouse, 2007). A component associated with determining who stakeholders are and what they want is assessing which stakeholders are more important so that their demands can be prioritized and met. This prioritization is referred to as determining the level of stakeholder salience (Mitchell et al., 1997).

Following the Vancouver 2010 Olympics, Parent and Deephouse (2007) measured stakeholder salience through the identification of different stakeholder groups, different issues, and observing the emergence of a prioritization scale. The caution that emerged from the findings was to not completely disregard non-stakeholders, because the non-stakeholder, at times considered an activist group, could emerge as an urgent challenge at a later time. This ties in with the Granovetter's strength of weak ties theory referenced in this research study.

The concept of urgency with Major Games arises frequently out of necessity when dealing with critical and timely issues. It is not uncommon for a Games manager to be told to "just make it happen" or to use judgement and in the moment and "ask forgiveness instead of permission". While the National Paralympic Committee and its Mission staff will prepare, rehearse and attempt to anticipate any possible crisis or challenge, when dealing with emotionally charged international events the unexpected may still occur.

The concept of prioritizing individuals and stakeholders is familiar within sport when one considers the goal of a Major Games sporting event is to prioritize the athletes by establishing their rank and placement on the podium. Almost equally important for many of the countries participating in the Games is the critical steps involved following protocol. When it comes to individuals at the Games, the President of Rights holding organization, (e.g. The President of the International Paralympic Committee is the most important person attending the Rio 2016 Paralympic Games and takes priority over any head of political state.) The hierarchy for an international sport event places sport first and political second. Many countries and stakeholders have been known to try to exert significant pressure to get preferred access to the Games, additional tickets, etc. and the staff and the Protocol Manager need to be very confident and able to communicate and manage tensions very effectively and efficiently (Parent & Smith-Swan, 2013).

Sport and Social Network Analysis

Twitter is a social media platform created in 2006 by Jack Dorsey, Noah Glass, Biz Stone and Evan Williams as a micro blogging service originally with a 140 character limit per post. In 2012 it had more than 100 million users posting 340 million tweets per day, by September 2016 it had 313 million users per month (Statista, 2016) and 330 million per month in 2019 (Global Web Index, 2020). While Twitter was not as large as Facebook at 1.7 billion users or Instagram with 500 million users (Statista, 2016), it was still a key platform within social media. Twitter provided users with a way to connect posts (tweets) with larger themes, people and groups through the use of the hashtag ‘#’ symbol (Naughton, 2006). Twitter has also provided high

profile individuals and groups (such as within sport and politics) with a means to bypass traditional media to speak and engage directly with their followers (French & Le Clair, 2018).

National sport organizations have been using social media as a communication tool to engage with stakeholders such as sponsors, fans, supporters, participants. Studies related to sport and network analysis of social media are becoming more frequent including sport and events, (Pedersen, 2014), sport and athletes, (Lebel & Pegoraro, 2019; Pegoraro, 2010) sport and sponsorship (e.g., Abeza et al., 2014; Naraine & Parent, 2017) and recently sport organizations using social media (e.g. Abeza & O'Reilly, 2014; Thompson et al., 2014). However, there is a definite gap when looking at sport and social media and Paralympic Games research.

Pedersen (2014) reported that sport organizations were predominantly using social media for communication rather than marketing. Naraine & Parent (2016) confirmed in a recent thematic analysis of Canadian National Sport Organizations (CNSO) using Twitter that CNSOs continue to use Twitter to either promote, report or inform. Regardless of whether the sport was winter or summer sport, large or small, its degree of salience had little impact on the way in which social media was being used.

The federal government encourages federally funded CNSOs to use social media and they are encouraged to adhere to government policy parameters, such as tweeting in both official languages in Canada, English and French, as well as submit communication reports itemizing where they have promoted the government of Canada. A criteria of funding requires recognition of the Government as well as adherence to guidelines (Government of Canada communication report). The Canadian Sport Policy 2012 identifies promotion and awareness of athletes, Major Games, etc. as a desired outcome to be measured against if you are a sport organization receiving

federal funding. In past years all CNSOs have been asked to share their Twitter accounts with Sport Canada and the communication department within Sport Canada checks on CNSO Twitter and communication activity to ensure it is compliant. CNSOs also need to complete a report card assessing communication activity each year to be eligible for funding the subsequent year.

In a period of digital awareness most Members of Parliament within Canada also have Twitter handles and are encouraged to be visible on social media. To support the media but also to have direct communication with Canadians and constituents (Trudeau, 2015). Their Ministerial communication teams are tasked with driving activity around the government's agenda, demonstrating the Minister is being seen to encourage and show support of mandated activities and report on impact.

Given CNSOs are instructed to use social media, and yet are faced with numerous capacity challenges (human resource, financial, social media competency etc.), they may be ill equipped to maximize the potential of social media communication. The literature found (Naraine & Parent, 2016) that many sport organizations do not have sufficient capacity and as a result often engage in isomorphism (similar organizations (e.g. sport organizations) adopt similar processes and tend to resemble one another (Slack & Parent, 2006). The challenge with using another organizations plan is that it may not leverage the unique opportunities within a sport's particular network. Similarly, if the sport organization is frequently sending a consistent style of messaging, such as promoting, reporting or informing on its activities or results, it risks homogeneity in messaging and could limit new audience growth (Naraine & Parent, 2016). While it may be efficient to begin with a best practice as a template, the sport organization may still need to monitor its social media engagement and consider a more custom approach to maximize

impact. The literature suggests that monitoring and adapting social media strategies could facilitate audience growth, especially for Twitter, which is an area this study seeks to address.

Social media has also changed the way major sporting events are consumed and discussed. The London 2012 Olympics were dubbed by the media the Twitter Olympics and Sochi 2014 became the Viral Olympics (Whiteside, 2014). NBC livestreamed 400 hours during Vancouver 2010 and 1000 hours for Sochi 2014. Canadian Paralympic Committee broadcast consortium live streamed more than 700 hours of coverage during the Rio 2016 Paralympic Games.

Athletes, individuals and groups have recognized the value of social media with many posting pre and post events, as well as commenting and supporting during events. The Olympics are a “Great opportunity to build my brand” commented USA alpine skier, Mikaela Shiffrin, “one way is by winning another is to become an internet sensation” (Badenhausen, 2014). Canadian, World and Olympic figure skating dance champions Tessa Virtue and Scott Moir are intentional on their brand when communicating on Twitter (Buck, 2019). The IOC as well as IPC and national Olympic committees such as CPC have strict guidelines regarding what athletes can say on social media. During the London Games, triple jumper Voula Papachristou from Greece was the first athlete to be sent home and not allowed to compete because she had been caught tweeting inappropriate and unacceptable content (Whiteside, 2014). During Sochi, conversations on Twitter were studied to observe the impact of word of mouth (WOM) communication (Hambrick & Pegoraro, 2014). Social networks such as Facebook and Twitter enable the creation of spontaneous communities around events and activities. Event organizers can promote and build momentum, athletes and individuals may share they will be attending, journalists and fans

can share real-time experiences. The event provides an opportunity to create new networks and sharing of information not solely informed by intentional high profile messaging. Players and lesser well known individuals can appear and influence the conversation.

The Canadian Olympic Committee had a significant increase in Twitter followers as their account @CDNOlympicTeam grew from just over 35,000 to over 400,000 followers during the Sochi Olympics with their #WeAreWinter campaign wherein they profiled Canadian athletes embracing frigid winter conditions and recounting their stories and achievements (sirc.ca/webinar/sochi). So too did the previously unknown USA bobsledder, Johnny Quinn (@JohnnyQuinnUSA), who became the guy trapped in a washroom after taking a shower (and later an elevator) and who shared a photo of the damage after he had to punch his way through the locked and jammed door, or the viral awareness of #SocialProblems related initially to poor conditions in athletes and journalists washrooms. Hambrick and Pegoraro (2014) used social network analytics to track the conversations related to #WeAreWinter and #SocialProblems and show the evolutions of the conversations as well as the creation of communities and following of the WOM conversations.

Para Research and Paralympics

Following the Rio 2016 Paralympic Games, the Canadian Paralympic Broadcast Media Consortium was presented with the Paralympic Media Award by the International Paralympic Committee. The award recognizes the TV or radio broadcaster that presented the highest quality and most dynamic coverage of the Rio 2016 Paralympic Games. The award-winning consortium was assembled by the Canadian Paralympic Committee and the Consortium included: CBC/Radio Canada, AMI, Sportsnet, Twitter, Facebook, Send to News and Videogami.

In 2017 the Canadian Broadcasting Corporation (CBC)/Radio Canada announced a multi-Games agreement led by the Canadian Paralympic Committee to continue media coverage of the Paralympic Games starting with Pyeong Chang 2018 until Tokyo 2020. The coverage would highlight five sports as well as the opening and closing ceremonies. During the Winter 2018 Games the five sports were wheelchair curling, Para ice hockey (formerly known as sledge hockey), Para alpine skiing, Para snowboard and Para Nordic, which includes cross country and biathlon events. “We are proud to further our commitment to provide audiences in Canada with even greater access to Canada’s athletes and their sports through this unprecedented partnership with the Canadian Paralympic Committee,” said Greg StremLaw, executive director, CBC Sports, general manager, Olympics and chef de mission, PyeongChang 2018. “As Canada’s Paralympic Network, we are dedicated to strengthening the connection between Canadians and the para sport community through world-class storytelling and increased levels of coverage of events like the Paralympic Games.” The Paralympic Network includes to the media Consortium partners as well as the Canadian Paralympic Committee corporate partners Toyota, Canadian Tire, Petro Canada, and supporting partners CIBC and Bell (paralympic.ca, 2016).

While the Canadian Para Network was providing coverage of Paralympic events and committed to strengthening the connections between the para movement and Canadians, there remains a significant gap in research related to the para sport, events and social network engagement. A Google Scholar search on November 21, 2019 for “Rio Paralympics” yielded 2,430 results compared to “Rio Olympics” showing 24,400 results. The significant difference in available studies between the Paralympic and Olympic Games supports the existence of a gap in

the literature related to Paralympic research. This study seeks to contribute to the body of research regarding the Rio Paralympics.

The International Paralympic Committee (IPC) UK Government, and the London Organizing Committee of the Olympic and Paralympic Games (LOCOG) all indicated the London Games would create a positive change in the lives of persons with disabilities and improve non-disabled attitudes towards disabilities. Attempts were made to reframe the dialogue and discourse, including attempts by the IPC to influence the nature of representation by the media of persons with disabilities and impairments (Beacom, 20 et al., 2016, p.42). Examples of reframing included using the word “impairment” and describing an individual as having an impairment rather than a disabled athlete. In Britain the “Superhuman” campaign focused on the athlete and extensive inner and outer strength. It was noted, however, that there was some backlash to this campaign as it did not reflect the everyday challenges Britons with impairments were facing (Beacom et al, 2016). The London 2012 data from the International Paralympic Committee indicated two million visited www.paralympics.org during the Games and nine million views on the IPC youtube.com channel. The IPC encouraged athletes and accredited supporters to engage and connect with fans on social media and provided guidelines to reinforce protocols as well as reminders to confirm and uphold the Paralympic values while at the Games. IPC experienced a 130% growth on Facebook and 30% growth of Twitter followers of @Paralympic. Twitter became the unofficial messenger of news and updates during the London Games as the athletes and supporters became the direct source interacting with fans. While the IPC experienced significant Twitter follower growth, so too did many national Paralympic committees.

Canadian Paralympic Committee and Rio 2016 Paralympics

The Canadian Paralympic Team sent a team of 162 athletes to the Rio 2016 Paralympics who participated in 19 sports over 10 days between September 7-18, 2016. The team won 29 medals in 6 different sports and actively participated in both the opening and closing ceremonies. Flag bearer for the opening ceremony, Parade of Nations, was David Eng, Wheelchair Basketball and Aurelie Rivard, winner of 4 medals in para swimming, including 3 gold, carried the flag for Canada in the closing ceremonies. (Canadian Paralympic Committee, 2016)

Table 3: Canadian Medals at Rio 2016 Paralympics

	Gold	Silver	Bronze	Total
Athletics	3	3	2	8
Cycling	1	3	5	9
Swimming	4	2	2	8
Rowing		1		1
Sailing		1	1	2
Triathlon		1		1
Total	8	11	10	29

Source: Canadian Paralympic Committee, 2016

The Canadian Paralympic Team prepared the Team Canada Dossier for Rio 2016 that was published and shared with friends and colleagues of Paralympic sport. The introduction was prepared by the Chantal Petticlerc, Chef de Mission and Norm O'Reilly, Assistant Chef de Mission. The Dossier covered everything from basic arrivals, games operations, classification to

medical services, safety and security and communications. Trying to consider possible risks, such as Zika virus, anti-doping or gang-related violence, personal security or civil unrest, were part of the Emergency Preparedness and Response Plan. The Dossier also covered communication and the goal of the CPC Communication team to “promote and garner positive media coverage for Canadian Paralympic Team, pre, during and post-Games with athletes’ best interests in mind, continuing to build awareness of the Paralympic brand and Paralympic athletes.”

During the Rio Games, the CPC unveiled an unprecedented, fully accessible broadcast plan to deliver the most comprehensive coverage ever offered in Canada for a Paralympic Games. CPC led the Paralympic Broadcast Consortium partners in creating coverage on broadcast/digital platforms including CBC/Radio-Canada, Sportsnet, Accessible Media Inc. Yahoo Sport Canada and SendtoNews. They also highlighted the Twitter hashtags to be used from their @CDNParalympic account that included #Rio2016, #TeamCanada, #Paralympic, #GoCanadaGo, , #EquipeCanada, #CDNParalympic and #ParaTough.

ParaTough is the name of the media brand campaign created by the Canadian Paralympic Committee and BBDO to increase awareness of para sport and support Canadian athletes participating at the Rio 2016 Paralympic Games. The campaign focused on showing a series of grueling workout videos hosted by Canadian Paralympians and was broadcast on radio, tv, print, digital and dedicated website paratough.ca. The Twitter handle #ParaTough was used extensively throughout the campaign. (Canadian Paralympic Committee, 2016)

This research seeks to add to the body of research on a para sport and to explore the relationship between traditional stakeholders of a national Paralympic committee, the Canadian

Paralympic Committee, and those influencers identified on Twitter during the Rio 2016 Paralympics. Using SSM and SNA this study seeks to identify known and potentially unknown CPC stakeholders that emerged during the Rio Paralympics and investigates the impact of urgency had on potential prioritization of the stakeholder.

Central Research Questions

This study combines the SSM and SNA to identify and explore stakeholders in Twitter conversations during the Rio Paralympic Games. When Twitter influencers are not previously identified they are categorized as new and unknown because they were not previously identified by the CPC. The following questions adopt a sequential mixed methods approach and are designed to understand if the Canadian Paralympic Committee (CPC) stakeholders are influential in Twitter conversations during the Rio 2016 Paralympic Games.

RQ1: Who are the CPC stakeholders on Twitter during the Rio Paralympic Games?

- a) Who were the traditional stakeholders during the summer Rio Paralympic Games, according to the SSM?
- b) Who were the influencers during the summer Rio Paralympic Games, according to the SNA of Twitter?
- c) Are Twitter influencers also traditional stakeholders?

RQ2: Who were the new and unknown influencers?

- a) What are their roles?
- b) Are they affiliated with CPC stakeholders?

RQ3: How does urgency impact the identification of influencers on Twitter?

Chapter 3: Methodology

This chapter will describe the methodological process used to collect the data and explore the study's research questions. In particular it will provide a rationale for the research approach, outline the strategy, justify the use of the data collection procedures using social network analysis and detail the thematic analysis process.

Research Approach

The study is based on a mixed methods approach (Tashakkori & Teddlie, 2003) leveraging both quantitative and qualitative methods for collecting and analyzing data to explore the concept of identifying new stakeholders using social media. Quantitative research begins with a problem statement, continues to a literature review and is followed by the data collection. As Creswell (2009, p.18) states, quantitative research “employs strategies of inquiry such as experimental and surveys and collects data on predetermined instruments that yield statistical data”. Qualitative data analysis uses “textual or visual evidence to understand the phenomena observed in the research” (Merrigan et al., 2012, p.78). Social Network Analysis and Content Analysis were used to analyze the Twitter data and explore the significance of tweets and author bios, in the identification of stakeholders and influencers on Twitter. The combination of both quantitative and qualitative research methods formed a means of triangulation to provide depth and perspective to the discussion to validate the evidence (Creswell, 2009).

This study adopted both an inductive and deductive approach to explore the concept of identifying new stakeholders using social media data. Inductive reasoning creates a systematic approach to reviewing the raw data that allows new themes to emerge (Strauss and Corbin, 1998;

Scrivens, 1991) The approach often includes the collection of raw data, alignment with research objective and drawing of conclusions or new models. The deductive model refers to data analysis that sets out to test whether the data is consistent with prior assumptions, identified by the investigator (Thomas, 2006).

This study focuses on using Mitchell et al's Stakeholder Salience Model together with Social Network Analytics to identify existing stakeholders and potential influencers on Twitter. By using social network analysis metrics from Twitter conversations and applying coding procedures to content the researcher will evaluate the results against the research questions and also observe emerging trends as they relate to this specific set of data being studied.

Selection of Data

The Canadian Government encouraged the use of social media to promote sport in Canada and at major international events. As noted in Chapter 2, the Canadian Government encouraged the promotion and increased awareness of Canadians and to Canadians at the Rio 2016 Olympic and Paralympic Games (Trudeau, 2015). This study is an opportunity to understand and identify the stakeholders, including political, media and sport community within a digital environment.

Twitter was selected because the Canadian government supports and encourages the use of Twitter by its politicians and federally funded sport organizations. In the last quarter of 2016 Twitter had 7.4 million monthly active users in Canada with a 37% penetration rate (Statista.ca, 2016). The London 2012 Olympics and Paralympics had been dubbed the "Twitter Olympics" for their widespread introduction and use of Twitter as a communication platform throughout the

Games (Whitehead, 2012). The result makes this study on Rio 2016 an instructive case to inform the use of Twitter by the sport community.

The Rio 2016 Paralympic Games (September 7, 2016 – September 18, 2016) were the summer Games immediately following the London Paralympic 2012 Games in a quadrennial cycle and were chosen by the researcher to further the understanding of Olympic and Paralympic studies. The London 2012 Olympics and Paralympics had been dubbed the “Twitter Olympics” for their widespread introduction and use of Twitter as a communication platform throughout the Games (Whitehead, 2012). The London 2012 Paralympics provided a heightened marketing focus on the awareness of athletes with a disability in Britain with their Superhuman campaign. This study will add to the body of literature about the Olympic and Paralympic movement through the study of the 2016 Games.

The Canadian sport Twittersphere is large enough to provide sufficient data but small enough to engage in meaningful analysis. A number of scholars have begun to study Twitter and Canadian sport and thus provide useful basic descriptions (Hambrick & Pegoraro, 2014; Naraine & Parent, 2016).

To study the influencers on Twitter, for this study two distinct Twitter sources were used: @CDNParalympics (Canadian Paralympic Committee) and #ParaTough. ParaTough was the marketing campaign created by the Canadian Paralympic Committee for the Rio 2016 Paralympics. By using both @CDNParalympics and #ParaTough it increased the reliability (Yin, 2008) and provided an opportunity to study two communities within the Canadian sport Twittersphere.

Table 3: Network Collection Summary

Metric	@CDNParalympic	#ParaTough	Total Combined
Users (nodes)	7,922	1,226	9,148
Tweets	17,088	7,396	24,484

The researcher developed Twitter conversation tracking strings using @CDNParalympics and #ParaTough. Using a Twitter Streaming API software, Netlytic, the researcher captured the data during the 2016 Paralympic Games. The data collection was performed and saved between September 7, 2016 and October 7, 2016 using Netlytic. Datasets saved included: 17,088 tweets with @CDNParalympics and 7,396 tweets with #ParaTough for a total of 24,484 tweets (Table 3).

The datasets were exported from Netlytic in two formats: .csv and .gexf. The .csv file was imported into Excel, a Microsoft spreadsheet software, and enabled the researcher to search the Twitter data, including but not limited to author, author_bio, Tweet content, source, followers, followed, retweets. Excel was also used to sort, filter and compare the data.

The .gexf file was loaded into Gephi v. 0.9.2, a program frequently used by academics to analyze relationships between actors on a social network. Within SNA actors, the individuals or organizations, are visually represented as nodes on a network graph and the relationships are described as edges. The influence an actor has on a network can be measured using different metrics. Frequently used metrics that can be identified using Gephi and used to consider an actor's influence within the network include the network's diameter and density as well the position of nodes within the network and their relative centrality, betweenness and degree. The

various statistical options were run within Gephi and the data was saved and exported for analysis using Excel.

Based on the context of the study surrounding the Rio 2016 Paralympic Games, the dates for data capture ran for a specific time period (September 7, 2016 to October 7, 2016). The 31 days (one month) started on the date of the opening ceremonies of the Rio 2016 Paralympic Games (September 7, 2016). Capturing a full month of data provided the researcher the ability to study Twitter conversations commencing on the first day of the Games and continuing beyond the closing ceremonies (September 18, 2016) to include conversations as the athletes and team members returned back to Canada and met with Canadians in their hometowns and communities. The researcher recognizes this is a single short time span to collect data and the study would be strengthened with a longer or repeated data collection period.

Data Collection and Analysis Procedures

To answer the research question “Who are the CPC stakeholders on Twitter during the Rio Paralympic Games?” a process similar to the approach referred to in Chapter 2 and identified by Sedereviciute and Valentini (2011) that integrated SNA with SSM was used. As mentioned earlier, the study proposed using the following steps to map and compare “online” (traditional) and “offline” (influencer) stakeholders using SNA with the Stakeholder Salience Model:

- a) map key “offline” stakeholders (using SSM);
- b) organize the identified “offline” stakeholders into relevant groups;
- c) identify potential stakeholders from social media (application of SNA and analysis of shared contents;

- d) classify extracted stakeholders into groups (based on connectivity and content dimensions);
- e) combine results derived from “offline” and “online” stakeholder into one map.

Using this process, social media stakeholders (influencers) can be aligned with offline (traditional) stakeholders based on the attributes of power, legitimacy and urgency. For the purposes of this study offline stakeholders will be referred to as traditional stakeholders and online stakeholders will be referred to as influencers.

The CPC had a list of its traditional stakeholders on its website and prioritized the stakeholders according to CPC’s own hierarchical priority rankings (Member, Sport Partner, Premier Partners, Official Partners and Suppliers, Partners). According the Mitchell et al. (1997), senior management of an organization categorize their stakeholders using a ranking system that can be subjective. This self-categorized by CPC list was used to compare against stakeholder attributes typically associated with power, legitimacy and urgency to help determine stakeholder salience (Appendix A). The availability of the list of existing stakeholders and alignment with several scholar’s stakeholder attribute definitions (Mitchell et al., 1997; Parent & Deephouse, 2007) provided a qualified point of reference to compare and identify traditional stakeholders for this study. As noted in the Stakeholder Literature section of Chapter 2, Parent and Deephouse (2007) provided descriptions and examples of stakeholder identification within a sport hosting context that would typically have the power, legitimacy and urgent attributes.

From the literature review, key stakeholder attributes associated with power, legitimacy and urgency were identified and associated with commonly used metrics. These were captured in Table 1 (SNA Metrics Table) found in the section Influentials of Chapter 2.

To measure influence on Twitter, commonly used metrics include measuring if an actor has a following or if they are seen as an expert. Several scholars have used measures of centrality including indegree, eigenvector and/or betweenness to measure degrees of power and influence (Dubois & Gaffney, 2014; French & Le Clair, 2018; Parent & Deephouse, 2007). Riquelme & Gonzalez (2016) studied numerous different metrics being used to study influence on Twitter and suggested a using combination of metrics that measured PageRank and metrics, for this reason both Eigenvector and then Betweenness were used to identify users with the power attribute. Indegree represented the number of followers and thus the user was seen as having a legitimate following. Retweets indicated the metric for urgency because the user is being seen as an expert and users were interacting (Dubois & Gaffney, 2014). An increased interaction in a short time period would reflect the criteria of time sensitivity (Mitchell et al., 1997). For this study, Gephi, v. 0.9.2, was used to analyze relationships between actors on a social network was used to identify measures of centrality identified in Table 4 for each tweet and the files were exported to Excel for review and analysis.

Once the datasets were sorted according to the various Centrality and retweet metrics, from the 24,484 Tweets, within Excel, =Countif formulas and Unique identifiers were applied to minimize subjective error and to create a data sets. The top 50 Twitter unique users associated with power, legitimacy and urgent attributes were coded to identify stakeholder salience levels of the Twitter users. In keeping with other studies (e.g. Cha & Gummadi, 2010; Dubois & Gaffney, 2014) 50 users per attribute (metric) were collected as this was considered a large enough sample to provide variety and yet small enough to be manageable and provide meaningful analysis.

The list of Twitter influencers was then compared with the original list of traditional CPC stakeholders to identify which users were in common and different and how they ranked from a salience perspective.

To answer the research question “Who were the new and unknown influencers?”, the top 50 users in each attribute, (power, legitimacy and urgency) were amalgamated into one list of 87 unique users. The researcher collected user descriptions from the downloaded Twitter data, user_id and the author bio field. If additional information was required for clarity, the user’s Twitter web page, Canadian Paralympic Committee webpages or readily available info on the web was collected. The researcher performed a content analysis (See Appendix B) to review and code the users according to fields identified from within the content of the user biography. The Twitter user account was coded as attributed to an individual or organization, Rio Olympic or Paralympic participant, medalist, stakeholder affiliation and thematic categories including government, media, sponsor or sport.

To answer the research question “How does urgency impact the identification of stakeholders on Twitter during the Rio 2016 Paralympic Games” the research performed a content analysis in Excel of those Tweets that were retweeted more than ten times to identify most frequently used unique words. The words top 10 words were compared with the definition of urgency from within SSM from the literature review to determine association with time sensitive or critical nature.

Ethical Considerations

This study included data collected from the Internet and is consistent with the guidelines set out by the Association of Internet Researchers (AoIR). Wherein the study was about data

collected from a primary partners website, in this case the Canadian Paralympic Committee, the partner was consulted on several occasions regarding the study. Data collected for analysis from the API streaming software Netlytic sourced publicly available data that was not hidden behind password protection. The data was shared on Twitter and/or posted on the website for public viewing. Only the data necessary for the study was captured. These points are in keeping with the most recent version of the AoIR guidelines 2019 (Internet Research Ethics 3.0).

Chapter 4: Results

This chapter will discuss the findings observed while seeking to answer the research questions related to identification of stakeholders and influencers on Twitter and the impact of urgency during the Rio Paralympic Games. The results will include the use of both SSM and SNA to categorize and compare the stakeholders according to SSM attributes of power, legitimacy and urgency and their salience rankings. Building on the ability to study stakeholder metrics on Twitter, evidence of new and emerging *urgent* stakeholders will be discussed. A review of the content included within the Twitter influencer biographies will provide insights into the possible strength of weak ties that could be leveraged when seeking to expand the stakeholder network to include previously unknown influencers during the Games.

Traditional Stakeholders

To answer the research question “Who are the CPC stakeholders on Twitter during the Rio Paralympic Games?” it was necessary to first identify the existing traditional, or offline, Canadian Paralympic Committee (CPC) stakeholders. The CPC posted on their website www.paralympic.ca the list of their stakeholders and partners and it was downloaded in August 2016 to be used as the baseline list of traditional stakeholders. The stakeholders were categorized on the website by CPC as “Members,” “Sport Partners,” “Premier Partners,” “Official Partners and Suppliers” and “Partners”. The CPC refers to Members as sport organizations that have an agreement with the CPC and that have athletes who may be competing for Canada in the Paralympic Games. The CPC categories were compared with definitions of stakeholder attributes provided by Mitchell et al. (1997), for power, legitimacy and urgency. The researcher consulted

a member of CPC management to confirm the CPC category alignment with the attribute definitions. The CPC stakeholders were then coded according to SSM attributes and types of stakeholders (Appendix B). A summary list of stakeholders comprised of 70 organizations/groups including: 27 Members, 3 Sport Partners, 7 Premier Partners, 9 Official Partners and Suppliers and 24 Partners is provided in Table 1. According to SSM stakeholder classes as defined in the Stakeholder Theory section of Chapter 2, most of the stakeholders were classified as Definitive, with the remaining either Dominant or Discretionary. There were no Dependent, Dangerous or Demanding traditional stakeholders identified.

Table 1: Summary of CPC Stakeholders categorized by SSM

Name	Description	Quantity	Classes	Salience
Members	Para Sports with competing athletes	27	Definitive (P,L,U)	Definitive
Sport Partners	OTP, COC, Gov't of Canada	3	Definitive (P,L,U)	Definitive
Premier Partners	Major Corp. Supporters (ex. CIBC, Pfizer)	7	Definitive (P,L,U)	Definitive
Official Partners & Suppliers	Service Providers (ex. Flight Ctr, P&G)	9	Dominant (P,L)	Expectant
Partners	Affiliate Supporters (ex. ALA, AlterGo)	24	Discretionary (L)	Latent
Total		70		

Notes: P=Power; L=Legitimacy; U=Urgency. OTP=Own the Podium, COC=Canadian Olympic Committee, P&G=Procter & Gamble, ALA=Active Living Alliance

The classification of stakeholders is recognized by Mitchell as a subjective classification by the organization manager that can change, thus the element of urgency, which can reflect an element of time sensitivity, adds a dynamic element to the classification. For example, those sports participating in the summer Rio 2016 Paralympics vs winter sports not directly involved in the Rio Games may be deemed by the manager to be more urgent during the 2016 Paralympic Games. Of the 27 Members, it was noted that 19 sports were listed as sports competing at the 2016 Rio Paralympics (Table 4), two of which, Shooting and Table Tennis, did not have Twitter accounts at the time and 8 were not competing at Rio 2016 as they were considered winter sports (ex. Alpine, Curling, Cross Country Ski, Hockey, Snowboard). It was noted that no individuals were identified as stakeholders on the list.

Table 4: CPC Sport Member Stakeholders

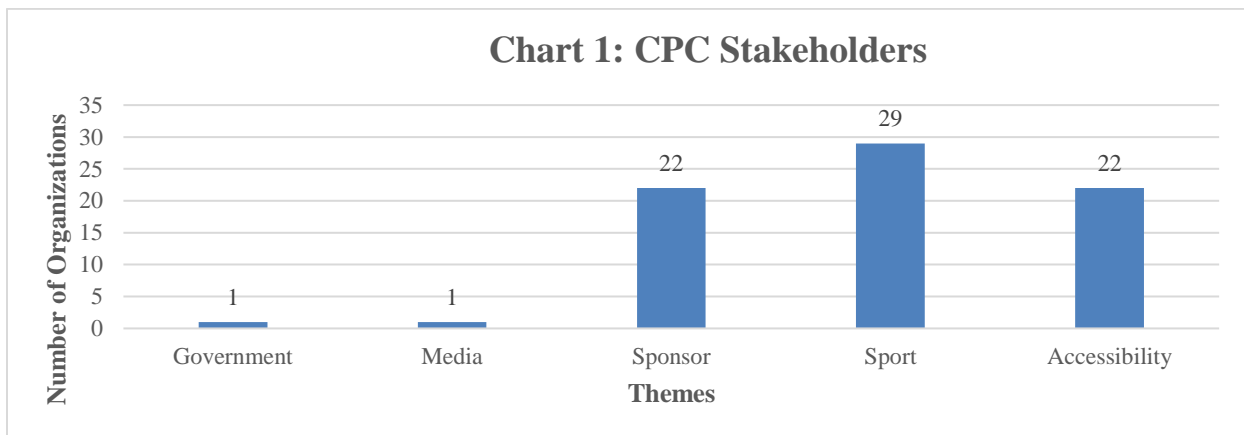
#	Sport Organization	Athletes at Rio 2016	Twitter Handle
<i>Summer Sports</i>			
1	Athletics Canada	Y	@AthleticsCanada
2	Boccia Canada	Y	@Boccia_Canada
3	Goalball Canada	Y	@CDNWGoalball

4	Archery Canada	Y	@ArcheryCanada
5	Canoe/Kayak Canada	Y	@CanoeKayakCAN
6	Canadian Cycling Association	Y	@CyclingCanada
7	Equine Canada	Y	@Equestrian_Can
8	Judo Canada	Y	@JudoCanada
9	Rowing Canada	Y	@rowingcanada
10	Shooting Federation of Canada	Y	n /a
11	Swimming Canada	Y	@SwimmingCanada
12	Triathlon Canada	Y	@TriathlonCanada
13	Sail Canada	Y	@SailCanada
14	Table Tennis Canada	Y	n/a
15	Wheelchair Basketball Canada	Y	@WCBallCanada
16	Canadian Fencing Association	Y	@FencingCanada
17	Rugby Canada	Y	@RugbyCanada
18	Tennis Canada	Y	@TennisCanada
19	Volleyball Canada	Y	@VballCanada

Source: Canadian Paralympic Committee, 2016

To further understand the identification of stakeholders, the list of traditional stakeholders was coded to identify common themes or the industry of the stakeholder, including government, media, sponsor, sport and accessibility. While some stakeholders fit into multiple categories, the predominant unique role was used within the coding. For example, ParaSport Ontario or BC Disability Sports were considered to provide a unique lens from an accessibility industry

perspective. The researcher acknowledges the subjective element within this coding. The stakeholder list (70) included a breakdown by the following themes as seen in Chart 1: Government (1), Media (1), Sponsor (22), Sport (29), Accessibility (12). Notable within the Sport category was the inclusion of 7 Canadian National Sport Organizations that participated in the Olympic Games but not the Paralympic Games such as the Canadian Olympic Committee, Gymnastics Canada, Synchro Canada, Bobsleigh Canada. It was also noted the inclusion of 4 Provincial para sport organizations (ex. Parasport PEI, Parasport Nova Scotia).



Using SNA with SSM to Identify Influencers

To identify influencers on Twitter using SSM, and answer RQ 1b, “Who were the influencers during the summer Rio Paralympic Games according to the SNA of Twitter?” it was necessary to identify the SNA metrics associated with the attributes of power, legitimacy and urgency. As noted in the literature, measures of centrality including indegree, eigenvector and betweenness are commonly used to identify influencers on Twitter. Riquelme and Gonzalez

(2016) did a study of different methods and metrics used to study influencers on Twitter and found using a combination of both PageRank and Twitter metrics to be insightful.

Metrics from Table 1 were used to identify Twitter users associated with power, legitimacy and urgency. To identify users with *power* the literature suggested eigenvector and betweenness were common SNA metrics. The Twitter users in the study were individually sorted and ranked by eigenvector centrality and also by betweenness (Table 5). Within Gephi the eigenvector and betweenness centrality values were identified and subsequently within Excel the 9,148 users (nodes) were sorted and ranked from highest to lowest. The top 50 users from each list were compared and it was noted 25 users (50%) were the same. The researcher also noted 19 of those 25 similar names appeared in the top 25 listed by eigenvector centrality (14 in top 25 Betweenness). Eigenvector measures popularity and the leading medal winning sports (Table 2, Chapter 2) and medalists for Canada, including swimming, athletics, cycling appear in the top results as well as popular elected government leaders, including the Prime Minister @justintrudeau and Minister of Sport and Persons with Disabilities @cqualtro. Athletes such as Aurelie Rivard (@aurelierivard), who won multiple gold medals in swimming and Benoit Huot (@benhuot), a multi-paralympic swimming medalist were among the top users as ranked by eigenvector. The betweenness results reflect the shortest path and connections to other social networks. The results showed evidence of deeper communication into communities such as with rowing that showed national Twitter engagement with @rowingcanada as well as municipal and local engagement @lu_rowing (Sudbury Rowing Club) and @ottawarowing (Ottawa Rowing Club).

Table 5: Determining Power: Top 25 Unique Users sorted by Eigenvector or Betweenness

(excerpt from list of top 50)

Ranked by Eigenvector	Ranked by Betweenness
Cdnparalympics	cdnparalympics
Aurelierivard	SwimmingCanada
Justintrudeau	Martinrichard
Swimmingcanada	Cqualtro
Rio2016_en	Canparacycling
Benhuot	Katarina_roxon
Canparacycling	Rowingcanada
Brentlak	Marisspaps
Cibc	Csiontario
Canadianpm	Cibc
Athleticscanada	Cbcolympics
Tessroutliffe	Justintrudeau
Stilwell2013	Tosportscouncil
Brigittelegare	Signabutler
Cbcolympics	ottawarowing
The_real_deng	Cpetitclerc
88rossco	Lu_rowing

Katarina_roxon	Sportmatters613
Wcballcanada	Canadianpm
Paralympics	The_real_deng
Tristenchernove	Benhuot
Cqualtro	Robsnoeklive
Wcrugbycanada	Prlawless1
Csiontario	Wcballcanada
Rowingcanada	Accessiblemedia

Note: Shaded areas reflect users that appeared in the top 50 of both Eigenvector and Betweenness Lists

While both eigenvector and betweenness identify different facets of influence and use different metrics (PageRank vs Closeness measurements), the conclusion of a study in 2016 by Gonzalez comparing numerous measures of activity, popularity and influence on Twitter found that over half the existing influence measures used the PageRank algorithm to rank influencers on social media networks. To minimize subjectivity in ranking and to enable a smaller sample set to be used, the eigenvector list was chosen as the list for identifying stakeholders with power. The result produced a single list ranking users associated with the power attribute (Table 6).

The second stakeholder attribute to identify from the Twitter data was legitimacy. From an operation perspective for Twitter users, legitimate is when others mention you, therefore the user has credibility and relevance. As noted in Table 1 indegree is the number of times others mention you. It is a reflection of your relevance within the network and the conversations occurring at the time. The data collected using Gephi identified in-degree as one of the

characteristics of a node. The 9,148 nodes were ranked from largest to smallest within Excel according to indegree. The result produced a priority list of users with a high degree of legitimacy within the network according to SNA (Table 6).

Urgency was the third attribute to identify. Urgency introduces an element of time sensitivity and the act of others retweeting a message and therefore carrying the message further throughout the network within in time period. To study this, the researcher identified which users' messages were retweeted the most during the study period of 31 days. To figure out how many times a Tweet was retweeted, a =COUNTIF equation was applied in Excel to the list of 24,484 Tweets and it counted the number of retweets. The list of Tweets was then sorted according to largest number of retweets, with 1,465 retweets of a Tweet by Justin Trudeau (Table 6) being the highest retweeted descending to single Tweets that were not retweeted. A second sort was applied to the ranked list to create a ranked list of unique Tweets. From 24,484 Tweets, there were 5,051 unique Tweets identified. From within the 5,051 unique Tweets, 361 unique Tweets were retweeted at least ten times. Ten times repeated was chosen by the researcher and advisor as a reasonable indicator of intentional retweeting and a method to frame the collection of data to a manageable dataset size. The researcher then co-related the 361 unique Re-Tweets with their authors. The formula to identify unique occurrences was once again applied, thereby identifying 82 unique authors for the 361 Re-Tweets. A list of the top 50 unique authors (influencers) was compiled with a retweet range of 71-1,465 times (Table 6).

The list of influencers produced a table with the top 50 stakeholders as ranked according to the SSM categories of power, legitimacy and urgency.

Table 6: Determining Saliency: Top 50 Users ranked by SSM Attributes

Power	Legitimacy	Urgency
Cdnparalympics	cdnparalympics	Justintrudeau
Aurelierivard	Aurelierivard	Cdnparalympics
Justintrudeau	Justintrudeau	CanadianPM
Swimmingcanada	Canadianpm	HudsonsBay
Rio2016_en	swimmingcanada	TeamCanada
Benhuot	Rio2016_en	RickMercer
Canparacycling	Brentlak	Swimmingcanada
Brentlak	Athleticscanada	Royalfamily
Cibc	Benhuot	Wick_22
CanadianPM	Stilwell2013	megbenfeito
Athleticscanada	Canparacycling	KayNurse11
Tessroutliffe	Tessroutliffe	Miss_VanessaLee
Stilwell2013	Cibc	RowingCanada
Brigittelegare	Cqualtro	CSIOntario
Cbcolympics	Katarina_roxon	Cibc
The_real_deng	Paralympics	GGDavidJohnston
88rossco	88rossco	Overholtemily
Katarina_roxon	Cbcolympics	WCRugbyCanada
Wcballcanada	Teamcanada	Paralympics
paralympics	The_real_deng	The_real_deng
Tristenchernove	Wcballcanada	premierBradWall
Cqualtro	Rowingcanada	InakiGomezG
wrugbycanada	Hudsonsbay	sarblackAT
Csiontario	Cbc	Cgc_jcc
Rowingcanada	Wrugbycanada	Tararouty
Cbc	Tristenchernove	Cbc

Rickmercer	Alistermcqueen	Liberal_party
Teamcanada	Cpetitclerc	Benhuot
Cpetitclerc	Sdaniel97	athletesCAN
Sdaniel97	Rickmercer	Nenshi
mikeysammer	nenshi	cbcolympics
Sailcanada	Cyclingcanada	Prlawless1
Nenshi	Cbcsports	Cqualtro
Hudsonsbay	Csontario	Michellewill5
Canoekayakcan	Sailcanada	LizzieMurph
Wick_22	Vballcanada	CurlingCanada
alistermcqueen	Miss_vanessalee	Phcouillard
Miss_vanessalee	Cbcscottrussell	Accessiblemedia
Chelsgotell	Rio2016	UCIParacycling
Cbcscottrussell	Royalfamily	AyimWhoAyim
Marktewks	Brigittelegare	Tnyhaug49
Vballcanada	Cac_ace	VballCanada
Rio2016	Meghanrows	Catrioald
Drtardiff	Marktewks	TorontoComms
Flightcentreca	Motocurt84	CBCScottRussell
Natestein	Trevor_hirsch10	Athleticscanada
Trevor_hirsch10	Toddy7t	Petrocanada
Cyclingcanada	Blindrower	ClaraHughes_
Phcouillard	Pammypam	Caninnovation
Sportcanada_en	Petrocanada	S4L_SPV
cbcports	Mikeysammer	JimWatsonOttawa

To determine stakeholder salience, it was necessary to establish the number of attributes for each stakeholder. The stakeholders were coded with “1” for each attribute. To provide clarity between attributes, each attribute was colour coded. The lists were alphabetized and combined

into one list. Once combined the attributes were matched against each unique user. A final list was created identifying unique users according to their salience ranking. A total of 85 unique users, therefore 85 influencers, was identified. Table 7 shows the summary mapping of 85 CPC influencers who were identified using on Twitter using SNA during the Rio Paralympic Games.

Table 7: Summary Mapping of Twitter Influencers to SSM

Class	Quantity	Salience
Definitive (P,L,U)	22	Definitive
Dominant (P,L)	21	Expectant
Dependent (L,U)	2	Expectant
Dangerous (P,U)	2	Expectant
Dormant (P)	6	Latent
Discretionary (L)	7	Latent
Demanding (U)	25	Latent
Total	85	

Of the 85 users identified, 22 were identified as definitive, 25 were expectant and 38 as latent (Table 7). Of interest in this review are the 2 Dependent and 2 Dangerous users. As noted earlier, the focus of a manager should typically be on active users, therefore users with at least 2-3 attributes. Dependent and Dangerous are both considerate moderately active users (vs passive) and classified as Expectant. Therefore it is noteworthy the emergence of @PetroCanada (one of CPC’s Premier Partners) and the @RoyalFamily (the previous Olympics were held in 2012

London, UK, home to the @RoyalFamily and had a large focus on para sport) as Dependent, and @phcouillard (Premier of Quebec, Philippe Couillard) and @Wick_22 (Hailey Wickenheiser) as Dangerous.

To answer the research question RQ 1c “Are Twitter influencers also traditional stakeholders?” the list of 85 Twitter influencers was compared with the list of 70 traditional stakeholders. The results were then mapped using SSM. The results show 17 stakeholders appeared on both the traditional stakeholder and Twitter influencer lists (Table 8). The 17 were mapped according to salience attributes identifying: Definitive (8), Dominant (5), Dependent (1), Dormant (3) and Demanding (1). The mapping identifies the salience levels, or priority focus levels, with 8 high salience (definitive), 5 moderate (expectant) and 4 low (latent). Of interest to this study looking at urgency was the identification of Petro Canada as a Dependent stakeholder (Legitimate and Urgent). As mentioned in the literature, it is suggested the stakeholder should be active (vs passive) and have at least 2 attributes. While Curling Canada appears as Demanding with just one attribute (urgency) and therefore a low salience, it is of interest that Curling Canada appears as in the top re-tweeters since while it is a Member for CPC, it is a winter sport and not participating in the event. This is also relevant when considering Granovetter’s SWT since as a winter sport Curling make be a weaker tie during the summer Paralympics, however it still has a significant following and its engagement can be seen to expand summer sport awareness to winter sport followers.

Urgency considers both time sensitivity and the critical nature of the relationship. Canada won 29 medals in 5 different sports (athletics, cycling, swimming, rowing, sailing) and the researcher observed that of the 19 sports participating at Rio (Table 2), five medal winning Sport

Member stakeholders (Athletics, Cycling, Rowing, Sail, Swimming) appeared and ranked as either definitive or dominant on Twitter. The use of SSM and SNA enabled the researcher to identify 17 traditional stakeholders who were also influencers on Twitter during the Rio Paralympics.

Table 8: Mapping Traditional Stakeholders Also Influential on Twitter

#	Description	Definitive (P,L,U)	Dominant (P,L)	Dependent (L,U)	Dangerous (P,U)	Dormant (P)	Discretionary (L)	Demanding (U)
1	Athletics CA	1						
2	Rowing CA	1						
3	Swimming CA	1						
4	Rugby CA	1						
5	Volleyball CA	1						
6	Team Canada	1						
7	CIBC	1						
8	HudsonsBay	1						
9	Cycling CA		1					
10	Equestrian Canada		1					
11	Sail Canada		1					
12	WC Basketball CA		1					
13	Petro Canada			1				
14	CanoeKayak Canada					1		
15	Curling CA							1
16	Flight Centre					1		
17	Sport Canada _EN					1		
Total		8	4	1	0	3	0	1

Notes: P=Power, L=Legitimate, U=Urgency, CA=Canada, Sport Canada_EN=Sport Canada English Twitter Handle

New and Unknown Influencers

To answer the research question RQ2 “Who were the new and unknown influencers?” it was necessary to collect additional information about the 85 Twitter influencers. Content analysis of the Twitter bios helped respond to the research question. As mentioned in Chapter 3, the researcher collected user descriptions from the downloaded Twitter data and the author bio field and if additional information was required readily available info on the web was collected. The data showed 49 Twitter handles that were associated with individuals and 36 associated with organizations. This is notable since the traditional CPC stakeholders only identified organizations, even though the stakeholder definition commonly accepted in the literature refers to individuals or organizations that can be affected by or have an effect on the organization. Of the definitive and expectant influencers 8 out of 22 (36%) and 16 out of 25 (64%) respectively were individuals as were 24 of 38 (63%) of the latent classified new users.

Previously unknown influencers

The researcher reviewed the list of 85 unique Twitter stakeholders and removed the 17 stakeholder names that appeared on both the traditional stakeholder and Influencer lists. The result identified 68 new and previously unknown influencers. These 68 new influencers had salience levels of definitive (13), expectant (21) and latent (34) (Table 9).

Table 9: Summary of Mapping New Influencers to SSM

Stakeholder Class	Quantity	Salience
Definitive (P,L,U)	13	Definitive
Dominant (P,L)	18	Expectant

Dependent (L,U)	1	Expectant
Dangerous (P,U)	2	Expectant
Dormant (P)	3	Latent
Discretionary (L)	7	Latent
Demanding (U)	24	Latent
Total	68	

As mentioned earlier, the literature suggested focusing on active vs passive users to identify influencers on Twitter, which meant they had a salience level of either high (definitive) or moderate (expectant). Therefore, 34 new and previously unknown high (definitive) and moderately active (expectant) influencers were identified. (Table 10)

Table 10: Salience of New and unknown Influencers on Twitter

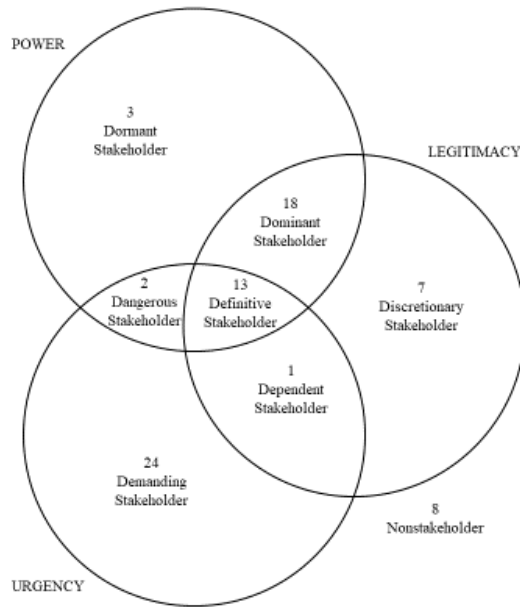
#	Influencer (@*)	Description	Stakeholder Class	Salience Level
1	benhuot	Paralympian	Definitive (P, L, U)	Definitive
2	canadianpm	Gov't	Definitive (P, L, U)	Definitive
3	cbc	Media	Definitive (P, L, U)	Definitive
4	cbcolympics	Media	Definitive (P, L, U)	Definitive
5	cbscottrussell	Media	Definitive (P, L, U)	Definitive
6	cqualtro	Cdn Minister of Sport	Definitive (P, L, U)	Definitive
7	csiontario	Cdn Sport Centre	Definitive (P, L, U)	Definitive
8	justintrudeau	Cdn Prime Minister	Definitive (P, L, U)	Definitive
9	miss_vanessalee	Olympian	Definitive (P, L, U)	Definitive

10	nenshi	Mayor of Calgary	Definitive (P, L, U)	Definitive
11	Paralympics	IPC	Definitive (P, L, U)	Definitive
12	Rick mercer	Media personality	Definitive (P, L, U)	Definitive
13	The_Real_Deng	Paralympian	Definitive (P, L, U)	Definitive
14	88rossco	Paralympian	Dominant (P, L)	Expectant
15	alistermcqueen	Paralympian	Dominant (P, L)	Expectant
16	aurelierivard	Paralympian	Dominant (P, L)	Expectant
17	brentlak	Paralympian	Dominant (P, L)	Expectant
18	brigittelegare	Sport individual PR	Dominant (P, L)	Expectant
19	canparacycling	Sport org	Dominant (P, L)	Expectant
20	cbsports	Media	Dominant (P, L)	Expectant
21	cpetitclerc	Paralympian	Dominant (P, L)	Expectant
22	katarina_roxon	Paralympian	Dominant (P, L)	Expectant
23	marktewks	Olympian	Dominant (P, L)	Expectant
24	mikeysammer	Paralympian	Dominant (P, L)	Expectant
25	rio2016	Rio 2016 host	Dominant (P, L)	Expectant
26	rio2016_en	Rio 2016 host	Dominant (P, L)	Expectant
27	sdaniel97	Paralympian	Dominant (P, L)	Expectant
28	stilwell2013	Paralympian	Dominant (P, L)	Expectant
29	tessroutliffe	Paralympian	Dominant (P, L)	Expectant
30	trevor_hirsch10	Paralympian	Dominant (P, L)	Expectant
31	tristenchernove	Paralympian	Dominant (P, L)	Expectant
32	royalfamily	British Royal Family	Dependent (L,U)	Expectant

33	phcouillard	Premier of Quebec	Dangerous (P,U)	Expectant
34	wick_22	Olympian	Dangerous (P,U)	Expectant

To provide a visual representation of the 65 previously unknown influencers, the influencers were mapped using Mitchell’s SSM Venn diagram.

Mapping New CPC Influencers on Twitter to SSM



To answer the question RQ2b, “Are the new and unknown influencers affiliated with CPC stakeholders?” the researcher drew upon Granovetter’s strength of weak ties theory. When considering strength of weak ties, one considers who may be affiliated but not considered a direct stakeholder or contact with the CPC. Comparing the list of 70 traditional CPC stakeholders identified from RQ1, with the list of new and previously unknown influencers reveals support for the strength of weak ties theory. Within the 34 newly identified definitive and

expectant influencers (Table 10), individual names appear that are affiliated with traditional stakeholder organizations identified by CPC. Paralympic athletes, Olympic athletes, media personalities and federal government leaders are individuals connected to stakeholder organizations previously identified by CPC such as a sport organization (e.g. Swimming Canada is a Member), Canadian Olympic Committee and Government of Canada are Sport Partners. Each of these individuals has their own network and reach beyond the CPC.

Fourteen of the 34 new influencers are Canadian Paralympic athletes competing at Rio. Athletes as individuals are critical to the CPC and its performance at the Rio 2016 Paralympic Games as the Games are all about the athletes. The two names appearing with definitive salience, Benoit Huot (@benhuot) and David Eng (@The_Real_Eng), as noted in Chapter 2 are Paralympians for Canada with significant multi Games experience, multi-medalists, and David Eng was the flag bearer for the Rio 2016 opening ceremonies Parade of Nations. With their previous Games experience, both individuals may have been comfortable engaging on social media and providing interviews with the media during the Games in which they were competing and thus the Twitter metrics show them with a high salience level (definitive). The 12 Paralympians with moderate salience (expectant) were competing during the Games and their focus may have been on competition until they had finished competing. Other Twitter users may have been tweeting about them thus the prevalence of their Twitter handles, as several were medalists, (e.g. Aurelie Rivard who won 4 medals, 3 of which were gold and was also named the flag bearer for the Rio 2016 closing ceremonies). Table 11 shows some of the most retweeted tweets from this dataset, many of which include medal winning athlete Twitter handles such as @AurelieRivard and

@The_Real_Eng who were also flag bearers. This supports the analysis regarding strength of weak ties as others may be talking about them not be direct CPC stakeholder.

Table 11: Selection of Most Retweeted Tweets

@Author	#	Tweet
JustinTrudeau	1465	RT @JustinTrudeau: Amazing night for the @CDNParalympics team - congratulations to Canada's medalists on the great start. #ParaTough
CDNParalympic	557	RT @JustinTrudeau: Congratulations to all of today's @CDNParalympics medal winners! #ParaTough
HudsonsBay	492	RT @CDNParalympics: The moment.@ AurelieRivard wins gold medal and breaks the world record! #ParaTough ... #TeamCanada #swimming
TeamCanada	388	RT @CanadianPM: 3 #silver and 2 #gold @CDNParalympics medals today. Bravo to the athletes for giving it their all! #ParaTough
RickMercer	384	RT @CDNParalympics: 6 MEDAL DAY!! DAY 7 GOODNESS. #gold #gold #silver #bronze Charles Moreau #bronze #bronze Shelley Gautier
SwimmingCanada	312	RT @CDNParalympics: David Eng leads #teamcanada #Paralympics #Rio2016
RoyalFamily	277	RT @hudsonsbay: We're rooting for @CDNParalympics in Rio! #WeWereMadeForThis #TeamCanada
Wick_22	275	RT @JustinTrudeau: #Paralympics athletes - this is remarkable. You're making Canadians proud every single day. #paratough
MegBefeito	269	RT @CDNParalympics: David Eng to carry Flag during the opening ceremonies at the @Rio2016_en Paralympic Games! #teamcanada #paratough

phcouillard 95 RT @CDNParalympics: Tristen Chernove wins #silver medal for
#TeamCanada in C2 #CyclingTrack #Rio2016

A further analysis of observes the appearance of an Olympic athlete within the high (Definitive) salience level, out of 13 names this represents 8% (Table 10). Two Olympic athletes also appear in the moderate (expectant) salience level, representing 10% (2 out of 20). While a user with only one attribute is not considered an influencer according to the literature, when considering strength of weak ties, it is interesting to note 11 Olympic athletes appeared in the low (latent) salience level within the dataset. The Canadian Olympic Committee is a traditional stakeholder for CPC identified as a Sport Partner, however, the Olympic athletes themselves are not considered directly connected to the Canadian Paralympic Committee. Olympic athletes are neither competing Paralympians nor are they a traditional stakeholder organization, however their engagement on Twitter extends the conversation and the reach to new and previously unknown networks. The Rio 2016 Olympic Games occurred prior to the Paralympic Games, therefore the athletes were done competing and were able to cheer on fellow Canadian athletes competing at the Paralympics. The appearance of Olympic athletes as influencers at the high, moderate (and low) salience levels, supports the inclusion of SWT in the theoretical discussion as their participation expands the network and reach for CPC.

The presence of government influencers is consistent with the literature that referenced the importance of the government officials using Twitter to promote the Games. As noted in Chapter 2 and response to RQ1, the Government of Canada is a major investor in sport, a traditional stakeholder of CPC and the Mandate Letter (Trudeau, 2015) to the Minister of Sport

and Persons with a Disability encouraged supporting athletes participating in the Rio 2016 Games. The appearance of both Minister Qualtro (@cqualtro) and Prime Minister Trudeau (@JustinTrudeau) as definitive influencers demonstrates a strong affiliation between the individual and the government. The appearance of municipal and provincial government officials with an expectant salience, Mayor Nenshi (@Nenshi) and Premier of Quebec Philippe Couillard (@phcouillard), highlights a connection to extended networks and once again supports the strength of weak ties. The extended dataset including latent salience also includes the former mayor of Ottawa (@Jim Durrell) and the Governor General of Canada (@GGDavidJohnston). All of these individuals are affiliated with different levels of government and are extending the network reach beyond the traditional CPC stakeholders.

Urgency Impact on Influencer Identification

When considering the research question “How does urgency impact the identification of influencers on Twitter?”, the three influencers Hailey Wickenheiser (@wick_22), Premier Philippe Couillard (@phcouillard) and @royalfamily are of interest because they are considered active and have moderate (expectant) salience levels and include the urgency attribute. The official Twitter handle for the British Royal Family is @RoyalFamily and they appear with an SSM salience level of Dependent which has attributes of both legitimate and urgent. The Royal Family is from Britain and represents a monarchy of which Canada is a member of its Commonwealth. Britain hosted the London 2012 Paralympics and @RoyalFamily has a large twitter following (4.2M as of April 13, 2020) – as noted in Table 1 in Chapter 2, a large following, referred to as indegree, is a Twitter metric used for identifying legitimacy, therefore while it does not directly have power over the CPC it represents a stakeholder that is both

legitimate and urgent. As an active influencer it could present an opportunity to expand awareness of Canadian parasport through Britain.

The appearance of Hailey Wickenheiser (@wick_22) and Premier Philippe Couillard (@phcouillard) are notable as according to SSM they have the attributes of power and urgent and are classified as Dangerous. As mentioned in the literature in Chapter 2, a dangerous stakeholder is often associated with an activist as it has power and urgency. Both are recognized personalities and, as described in their Twitter bios, Hailey Wickenheiser (@wick_22) is a six time Olympian, winner of four gold medals and active on Twitter with 76.3K Twitter followers and Philippe Couillard is the 31st premier of Quebec with 118.6K Twitter followers as of April 13, 2020. The power attribute, was measured using eigenvector centrality, which reflects how connected they were to others in their networks (Table 1), both @wick_22 and @phcouillard ranked in the top 50 names out of 9,149 unique users (Table 6). Urgency was measured by retweets, which showed whose content is retweeted the most and therefore activity in the Twittersphere (Table 1). Table 6 shows @wick_22 ranked 9th and @phcouillard ranked 37th and as shown in Table 11, the @wick_22 Tweet was retweeted 275 times and @phcouillard was retweeted 95 times. As noted in the literature, the response time on Twitter is critical and time sensitive, especially when seeking a positive outcome. As urgency is an SSM attribute that reflects time sensitivity and conversations and response rates on Twitter are time sensitive, the identification of Dependent and Dangerous influencers supports the need to findings to the research question “How does urgency impact the identification of stakeholders on Twitter?”

Another observation using content analysis of the retweets found the most retweeted tweets referred to congratulating and encouraging the medalists or celebrating the opening

ceremonies. SNA capture Twitter conversations connected to a specific time frame and the urgency to posting is time sensitive. Out of 24,484 Tweets, the words “Canada” and “team” appeared in the most Tweets with 13,263 and 10,232 appearances, and “medal” appeared 7,182 (29%) of the time, with gold (5,216), win (3,494), silver (3,442) and bronze (2,450) being visibly present in the top words tweeted. Of the top 50 tweets, 38 refer to medals and 7 refer to opening or closing ceremonies. (Table 12).

Table 12: Words Most Frequently Tweeted

Description	Tweets
Canada	13263
Team	10232
Medal	7182
Team Canada	1089
Gold	5216
Congrat	4888
Win	3494
Silver	3442
Swim	3348
Aurelie	2856
Amazing	2521

The appearance of events, such as medal performances, in the predominant top Tweets shows that while there may be other conversations going on during the Games, the time sensitive

and critical ones capturing the largest activity reflected *urgent* characteristics. Therefore, it was confirmed urgency does have an impact on the identification of stakeholders on Twitter. SSM can be used to identify active influencers to who have the urgency attribute and whom the organization should monitor either for opportunity or to manage risks if they may be deemed potential activists. The content analysis highlighted the most retweeted Tweets, therefore most highly circulated tweets were about time sensitive events, such as winning of medals and those users tweeting or retweeting were potential influencers. As noted in the literature, influential users tend to be active, however only a few active users are influential. Both to identify influencers using SSM and through content analysis of retweets, it was noted urgency had an impact.

Chapter 5: Discussion

Stakeholder Identification

When considering the question “Who are the stakeholders on Twitter during the Rio Paralympic Games” it was interesting to note in Chapter 4 that between the 70 traditional stakeholders and 85 influencers on Twitter from our dataset, 17 appeared on both lists. This tells us that not all of CPC’s traditional stakeholders are actively engaging on Twitter and including @CDNParalympics or its marketing campaign #ParaTough. Of the 27 CPC Sport Members, of which 19 were competing at Rio, 11 Tweeted (including 5 that were the medalists) using the CPC Twitter tags, and of the 43 sponsors (Sport, Premier, Official Partners & Suppliers and Partners) only 6 Tweeted using the CPC Twitter tags. While it was not part of the scope of this study to understand why the stakeholders did not include the CPC Twitter tags, it does present an opportunity for future study to determine why the partnership or marketing was not visibly supported on Twitter. Possible areas of future study might include looking further at messaging and engagement. The literature referred to some organizations using Twitter simply as a broadcast medium instead of a potential tool for engagement with users and stakeholders to further relationships. Perhaps this an opportunity for CPC to review communication and messaging strategy on Twitter during the Games. Another area to consider could be the partnership agreements between CPC and its stakeholders and potentially including social media engagement and support for the CPC brand during the Games. An opportunity to move some stakeholder from passive on Twitter to active and thereby engaging in spreading the key messages during the Games.

New and unknown influencers

The use of SNA enabled the researcher to study and answer the question, “Who are the new and unknown influencers?” With the introduction and use of social media to promote and engage viewers during the Games sport organizations now have access to user data previously unavailable. Quantitative metrics provide opportunities to study social networks and identify and evaluate elements such as users, relationships, reach and engagement.

The use of SNA and SSM provided an opportunity to identify influencers who could be stakeholders on Twitter. The emergence of the role the individual vs the organization plays became evident, with 58% of the influencers on Twitter identified as individuals. The emergence of the role of the individual builds on several studies from the literature including the strength of weak ties and also the personalized nature of social media. Social media is about relationships and users engaging with users. The studies show followers associate with individuals, and be it the Prime Minister, the media personality or the athlete winning multiple medals, it would be worthwhile to identify in advance and during the Games individuals that could expand the social network reach and engagement.

Emergence of Individuals within Government

Building on the emergence of the individual as an influencer, the role of the individuals within Government was notable. While the Government of Canada is the single largest funder of sport in Canada, it was individual people within the government that emerged as influencers during the Games. The Twitter handles for the Prime Minister Justin Trudeau and the Minister of Sport and Persons with a Disability, Carla Qualtrough, ranked extremely high. The appearance of

the Premiers of Quebec, Phillippe Couillard and Saskatchewan, Brad Wall, as well as popular Mayors from Calgary (Nenshi) and Ottawa (Jim Watson) showed that Twitter is a tool used by elected government to engage and reach Canadians. Literature further support the use of Twitter as a tool used by government and political figures (Dubois & Gaffney, 2014).

This may be an opportunity for sport organizations to intentionally develop relationships with elected officials at various levels of government and their respective communication teams. Perhaps identifying athletes, programs and connections to elected officials, riding and their priorities, as seen in Minister Qualtrough's mandate letter, could enhance and provide expanded opportunities of mutual benefit in future social media engagement in upcoming Major Games such as the Olympics and Paralympics. As noted in the literature (Laczniak & Murphy, 2012), the use of social media is a useful stakeholder marketing tool in the public policy context as it extends the messaging and engagement to include broader audiences. Ministers and elected officials want to be associated with success, especially cheering on local and Canadian athletes at Games that attract national and international audiences. The CNSO could also use the opportunity to expand their reach, so that elected officials who have a broader audience than the typical sport audience, are spreading the message, CPC branding message, to their audience. This builds on the challenge identified in the literature wherein sport tends to speak with sport audiences, the engagement of the homogenous audience. Sport organizations need to look at the data to identify potential new stakeholders and influencers who can help to expand their reach and audience.

Emergence of the individual athlete as an influencer

The emergence of the individual as well as the role of government on social media was previously discussed, but of note was the affiliation of the athletes with CPC traditional sport member stakeholders. Paralympians competing in the Games, and in particular, medalists, were identified as influencers on Twitter. Benoit Huot (@benhuot) and David Eng (@The_Real_Deng), athletes who were both medalists at Rio and competitors at previous Paralympics, appeared as influencers and were associated with Sport Member stakeholders (Swimming Canada and Wheelchair Basketball Canada). Using SSM identified them both as Definitive stakeholders with attributes of power, legitimacy and urgency. Ten Paralympian medalists also emerged as Dominant (P,L) stakeholders with an expectant (medium) salience level. The identification makes sense because the athletes were competing and therefore they are have power and are legitimacy, but are not actively engaged on Twitter – because they are competing. People are mentioning them (in-degree), they are popular and have followers (eigenvector) but they themselves were not posting and retweeting during the Games. Similarly, the appearance of Paralympian medalists as latent (low salience), because they were being mentioned but not active on Twitter during the Games.

Of note is the emergence of Olympic athletes Tweeting during the Paralympics. With Olympians appearing at the Definitive, Expectant and Latent Levels, it is noteworthy. Why is it key to note the Olympic athlete involvement during the Paralympic Games? Olympians are athletes who may have just competed at the Rio Games and their events are now over so they are free to divert their attention from training and celebrate the efforts of fellow athletes. Several of the athletes are Olympic medalists with larger followers, (e.g. Meg Benfeito, diver). Canadians

and the world audience may have just been watching their competition and are interested in them as people, following their Twitter feeds. The Olympic athletes, similar to the COC (@TeamCanada) are actively supporting the athletes competing at the Paralympics. These influencers offer a tremendous opportunity to expand the Twitter engagement to new audiences. Instead of communicating with users who typically follow para sport, broadening the audience to include users who follow the Olympic athletes is huge. Their role as a bridge to a new social network offers extended opportunities for engagement. Granovetter refers to strength of weak ties, and the engagement of Olympic athletes and their following offer an opportunity to expand the reach. Canadian athletes, whether competing at the Olympics or Paralympics are part of Team Canada. Considering 15 of the 68 (22%) unknown influencers identified were Olympians (current or former), it presents an opportunity for CPC to expand its list of influencers and ultimate reach on social media. It would be interesting to know if Canadian Paralympians were tweeting about their fellow Olympians during the Olympics. Canada is a country that leads in policy development regarding inclusion and diversity. Could there be an opportunity to further demonstrate leadership in inclusion, by engaging Olympic and Paralympic athletes together intentionally in each other's marketing?

Impact of Urgency

Urgency has been the underlying theme throughout this study and the final sub-question asks "How does urgency impact the identification of stakeholders on Twitter during the Games?" Urgency was a critical addition to the stakeholder theory by Michell et al. (1997) as it allowed for time sensitive and critical actions to be taken into account. In the case of a major sporting event like the Paralympic Games, time sensitivity is very relevant. The Paralympic Games occur

during a finite time period every quadrennial (4 years), scheduled races and events occur a set times and medals are won or lost in a fraction of second.

Reviewing the Tweets to reveal 29% were about medals is indicative of the focus on time sensitive occurrences. Twitter is about capturing the moment “live”, tweeting about medal performances is time sensitive. Tweeting about the time sensitive events such as the opening ceremonies, after the closing ceremonies would not make sense. An awareness that Tweets related to medals and ceremonies have such traction, is an opportunity for CNSOs to be intentional about their messaging and also to consider engaging beyond the simple broadcasting of a result.

The literature referred to the time sensitive window of opportunity for customer service on Twitter. The companies posting Twitter response times. The data showing a response within certain time frames often prompted a positive response on Twitter. Could there be an opportunity for sport organizations to observe key Twitter influencers and respond in a timely manner to elicit added positive engagement.

Wherein two influencers were identified as Dangerous, the Premier of Quebec Philippe Couillard and Hailey Wickenheiser, both had power and urgent attributes, it might have been prudent to monitor the Twitter activity. Influencers identified as Dangerous would be worthwhile for CPC to monitor during the Games since either positive or negative Tweets from these influencers could have an impact on communication. Similar to the literature that referenced keeping alert to activists, the benefit of monitoring the Twitter activity could provide insight into contributing to the narrative and discussion.

Chapter 6: Conclusion

Summary

The study demonstrated that stakeholders on Twitter during the Rio Paralympics can be identified using SSM with SNA. It also confirmed influencers on Twitter can be thought of as relevant stakeholders (in the SSM model) based on the notion of urgency. And finally, it validated the need to consider Granovetter's strength of weak ties to identify potential influencers who could have an impact on expanding an organizations' stakeholders on Twitter.

The use of SSM as a tool to identify both traditional and online stakeholders was effective to prioritize which stakeholders had high, medium and low salience. Sport Member organizations and major funders, including the Government of Canada ranked highly as definitive traditional stakeholders of the CPC. The online influencers included some of the traditional CPC stakeholders, however, also introduced new influencers to be considered as definitive. Comparing both traditional (70) and online (85) stakeholders, produced a list of 17 common stakeholder organizations. The common stakeholders included 11 Sport Members, the Government of Canada and Canadian Olympic Committee and 4 sponsors. All 17 were considered high salience (Definitive) traditional stakeholders, and yet online they were a combination of 8 high/Definitive, 5 medium/Expectant and 4 low/Latent salience stakeholders. Of the Definitive stakeholders, the top 3 (Athletics Canada, Rowing Canada and Swimming Canada) were Sport Members whose athletes won medals at the Games. Of the latent stakeholders, 3 (@CanoeKayakCAN, @Flightcentre and @Sportcanada_en) were considered

Dormant since while they did possess the power and legitimate attributes their Twitter activity did not meet the dataset threshold and therefore were not considered *urgent* on Twitter.

When considering urgency, it was notable on the Twitter influencer SSM mapping, 2 influencers were identified as Dependent (Petro Canada, Royal Family) and 2 as Dangerous (Premier of Quebec Philippe Couillard and Hailey Wickenheiser). Dependent and Dangerous stakeholders both contain 2 stakeholder attributes, and both include an element of urgency, meaning they are moderately active vs passive on Twitter. Dependent includes legitimate and urgent attributes, and the Royal Family and Petro Canada are users with significant followings and their relationship with CPC would be legitimate as a governing monarch or sponsor. The identification of Dangerous stakeholders is important, since the organization should monitor the activity of the users, as they both have attributes of power and urgency which are commonly associated with activists.

Reaction to time sensitive and critical activities such as celebrating the winning of medals and opening or closing ceremonies emerged as common themes in the Tweets and identification of influencers. 7182 (29%) Tweets contained the word medal and of the top 50 Tweets, 37 (74%) included medals and 7 (14%) opening or closing ceremonies. The need to engage and respond in a time sensitive manner reflect the urgency of the communication. As mentioned in the literature, the window to engage on Twitter and elicit a positive response is time sensitive. While there were other topics of discussion throughout the Games, those that reflected medals and ceremonies were retweeted the most, with the top retweet of 1,465 times, was posted by the Prime Minister of Canada @JustinTrudeau “Amazing night for the @CDNParlaympic Team – congratulations to Canada’s medalists on the great start #ParaTough. And the retweet was the

measure of urgency in this study. Adrenaline is often associated with the excitement of competition and the opening and closing ceremonies.

The emergence of the individual as an influencer on Twitter is supported by the personalized nature of social media and Granovetter's strength of weak ties theory. Of the 85 identified influencers on Twitter, 58% were individuals. This is interesting because only organizations had been identified as traditional stakeholders by the CPC. Of the new influencers identified using SNA and SSM, individual media personalities, government leaders and athletes dominate the list. Names such as Scott Russell and Rick Mercer represent media personalities, and leaders at various levels of Government including federal, from the Prime Minister Justin Trudeau and the Minister of Sport and Persons with a Disability Carla Qualtrough, to provincial with Premiers Brad Wall and Phillippe Couillard and municipal with mayors Nenshi and Watson. The use of Twitter by elected government officials has been mentioned in the literature. The intentional association with the Games and athletes presents an opportunity for sport organizations to expand the relationship and messaging being shared. Politicians want to be seen engaging with Canadians and celebrating local success and this could present an opportunity to expand the visibility and reach by both users.

The most surprising results were uncovered with the emergence of Olympic athletes actively engaging on Twitter during the Paralympic Games. This builds on importance of this research studying the strength of weak ties within stakeholder identification, as the individuals are athletes not directly involved in the Paralympic movement or Paralympic Games, and yet still Canadian athletes currently or previously competing at the Olympics. The voices and Tweets from swimmers, rowers, basketball players, race walkers, cyclists, divers, speed skaters, hockey

players and more were reminders of the power of sport to unite and bring people together to celebrate human achievement. Whereas the Paralympic athletes appeared as dominant stakeholders in this study, they were focused on competing and therefore not as active on Twitter during the Games. Once their events were finished, they were well positioned to become active influencers. However, Olympic athletes were finished competing, the Olympic Games had wrapped up with their closing ceremony weeks earlier. Canadians and audiences around the world had been watching, cheering and following Olympic athletes just a few weeks earlier. To see these athletes Tweeting about the Paralympians, watching Team Canada in the opening and closing ceremonies and engaging throughout the Games presents an opportunity to broaden the influencers engaged by the para movement.

Limitations and Future Research

It is anticipated that while differences and similarities between traditional and social media stakeholders will be observed, the characteristics of influentials on Twitter will translate into engaged stakeholders. Furthermore, during periods of urgency or delivery of time sensitive news and results, it is expected findings will reveal the creation of new network communities from weak ties that are often individuals rather than organizations who emerge as key stakeholders on Twitter. It is recognized that several limitations of this research included the focus on a short time period of one month around the Games, a focus on only one National Paralympic Committee and studying of only one social media platform, Twitter. Expanding the research to include multiple Games, including both the Olympic and Paralympic in Rio as well as the Tokyo 2020 and/or Beijing 2022 Games, or even including other major high profile sport events such as the Youth Olympic Games or PanAm Games would add to reliability of data

collection and research surrounding connecting stakeholders and their social media networks. Similarly expanding the data collection beyond one sport organization, in this research it was the Canadian Paralympic Committee, to include more sport organizations competing at the Games, such as multiple summer sports, winter sports, individual or team sports would add to the breadth of sport stakeholders and data reliability. It is also recognized that social media includes numerous platforms, and while a limitation of this study was the focus on Twitter, other platforms including Facebook, YouTube, Instagram, Snapchat would provide additional insights into stakeholder connections. Areas of future research could broaden the time period to include multiple games and as well as additional sporting organizations. Similarly, expanding the social media analytics to study various other platforms, such as Facebook, YouTube, Instagram would strengthen the research into the stakeholder identification on social media.

Policy and Practical Considerations

The implications are that closer attention should be given to social network analytics prior to major games to identify potential latent stakeholders, individual or organizational, that have their own strong networks and the characteristics of strong influencers. Further emphasis on the engagement of stakeholders during the Games cycle could have a significant impact on stakeholder communication strategies for sport organizations and events. Understanding who the social media stakeholders are and how to engage with the sport audience has the potential to enhance reach, sport investment as well as public policy opportunities and influence participation. Measuring the impact and reach of stakeholder engagement using different types of social media, as well as considering the different characteristics of stakeholder influencers, could

be helpful in the development of evidence informed policies as well as measuring policy outcomes.

Canada is a country that has demonstrated leadership surrounding inclusion and diversity. The Canadian Sport Policy 2012 highlighted the necessity for inclusion and to leverage the Rio Olympic and Paralympic Games to engage with Canadians. Social media has opened the doors to engage broader audiences and expand our social networks. When the Paralympics were created, the name referred to para – alongside the Olympics. Perhaps it is time to engage our Olympians and Paralympians alongside each other as they promote and encourage physical excellence and achievement of dreams. Perhaps future studies could investigate the opportunities to align and investigate how on this global social network we could work together, support each other and cheer for each other. We are all part of Team Canada!

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Appendix A
Canadian Paralympic Committee Stakeholders
 Retrieved from Paralympic.ca, August 8, 2016

Members

Athletics Canada
 Boccia Canada
 Football Canada
 Goalball
 Alpine Canada
 Archery Canada
 Canoe/Kayak Canada
 Canadian Cycling
 Assoc.
 Equine Canada
 Judo Canada
 Cross Country Canada
 Rowing Canada
 Shooting Federation of
 Canada
 Canada Snowboard
 Taekwondo Canada
 Swimming Canada
 Triathlon Canada
 Powerlifting
 Sail Canada
 Hockey Canada
 Table Tennis Canada
 Wheelchair Basketball
 Canada
 Curling Canada
 Canadian Fencing
 Assoc.
 Rugby Canada
 Tennis Canada
 Volleyball Canada
 Canadian Blind Sport
 Assoc.

Canadian Cerebral Palsy
 Sports Association
 Canadian Soccer Assoc.
 Canadian Wheelchair
 Sports Association

Sport Partners

Government of Canada
 Own the Podium
 Canadian Olympic
 Committee

Premier Partners

Pfizer
 Petro-Canada
 Bell
 Hudson's Bay
 Canadian Tire
 CIBC
 Air Canada

Official Partners & Suppliers

Fasken Martineau
 P&G
 SportCheck
 Flight Centre
 Sports Experts
 Hillberg & Berk
 Royal Canadian Mint
 BBDO Canada
 CNW Group

Partners

Active Living Alliance for
 Canadians with a Disabilit
 Alter Go
 BC Disability Sports
 Bobsleigh Canada
 Skeleton
 Canadian Amateur
 Dance Association
 Canadian Amputee
 Sport Association
 Canadian Association
 for Disabled Skiing
 Canadian Association of
 Athletes with an
 Intellectual Disability
 Canadian Forces
 Personnel & Family
 Support Services
 Field Hockey Canada
 Football Canada
 Gymnastics Canada
 Karate Canada
 Paraspport Nova Scotia
 ParaSport Ontario
 Paraspport & Recreation
 PEI
 Powerchair Football
 Canada
 Synchro Canada
 Water Ski and
 Wakeboard Canada

Appendix B: Coding schedule:

To review content, Tweets, author bios and websites when necessary were consulted to determine the following:

1. Twitter user name
2. Individual name
3. Individual
4. Association/Organization
5. Government
6. Media
7. Sponsor
8. Sport
9. Other
10. Rio Participant/Rio Non Participant
11. Rio Medallist
12. Tweet descriptions